

Books and Book-Chapters Published

CENTRE FOR LASER TECHNOLOGY

1. Second harmonic generation in nanocrystalline ZnO films in Perspectives in Modern Optics and Optical Instrumentation, Editors J Joseph, A Sharma, and V K Rastogi published by Anita Publication, New Delhi, R. K. Thareja.
2. Synchronisation of chaos, chapter in the book, External feedback effects on semiconductor lasers, (D. Kane and K. A. Shore (eds)), John Wiley and Sons, 2004, S. Sivaprakasam and C. Masoller.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Developed module 1 (of three lectures) for NPTEL, on Finite Elements Methods being currently aired on Eklavya Channel, C.S. Upadhyay.
2. Developing the web-based course on "Finite Element Methods" along with Prof. P.M. Dikshit (ME), C.S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Fluid mechanics and heat transfer with non-Newtonian liquids in mechanically agitated vessels, Advances in Heat Transfer, 37, 2003, 77-178, R. P. Chhabra.
2. Mathematical Methods in Chemical and Environmental Engineering, Thomson Learning, Singapore, 2004, 689 pages, A. K. Ray and S. K. Gupta.
3. Fundamental of Polymer Engineering, Marcel Dekker, New York, 2003, A. Kumar and R.K. Gupta.
4. An Introduction to Thermodynamics;, Universities Press, Hyderabad, 2003, Y.V.C. Rao.
5. Engineering Thermodynamics Through Examples, Universities Press, Hyderabad, 2003, Y.V.C. Rao.
6. Mathematical Methods in Chemical and Environmental Engineering, Thomson Learning, Singapore, 2004, 689 pages, A. K. Ray and S. K. Gupta.

7. Fundamental of Polymer Engineering, Marcel Dekker, New York, 2003, A. Kumar and R.K. Gupta.
8. An Introduction to Thermodynamics, Universities Press, Hyderabad, 2003, Y.V.C. Rao.
9. Engineering Thermodynamics Through Examples, Universities Press, Hyderabad 2003, Y.V.C. Rao.
10. Oxidative Dehydrogenation of Propane over Metal Oxide Catalysts in Metal Oxides: Chemistry and Applications, Marcel Dekker Inc., In Press, Book Chapter, Goutam Deo, Maymol Cherian and T.V. Malleswara Rao.

DEPARTMENT OF CIVIL ENGINEERING

1. LiDAR Remote Sensing For Forest Eco-System Studies, Geoinformatics for Tropical Ecosystems, Asian Association of Remote Sensing, Japan, 2003, Book Chapter, Roy, P.C., Joshi, P.K., and Lohani, B.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Mobile commerce, Allied Publisher, ISBN 81-7764-553-6, December 2003, R.K Ghosh, - collection edited jointly with H. Mohanty.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Parametric Optimization of a Fuzzy Logic Controller for Nonlinear Dynamical Systems using Evolutionary Computation, in New Optimization Techniques in Engineering, Springer Verlag, 2004, Chapter 19, pp. 479-500, Laxmidhar Behera.
2. Lecture Notes on Digital Switching – Electronic Book distributed via Web, Y.N. Singh.
3. Physics and Technology of High-K Gate Dielectrics -II, PV 2003-22; The Electrochemical Society Proceedings Series, Pennington, NJ, 2003, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Contract Economics, New Age International, New Delhi, 2004, T. V. S. Ramamohan Rao.
2. Development and Human Rights, Project for Economic Education, Mumbai, 2003, Munmun Jha (ed.).

3. Optimality of Language Design, O.N. Koul and Imtiaz Hasnain (eds.), *Linguistics: Theoretical and Applied* (A festschrift for Ruqaiya Hasan), Indian Institute of Language Studies, Creative Books, Delhi, 2004, Achla M. Raina.
4. Ancient Indian and Modern Generative Linguistics: Some Comparative Observations, O.N. Koul and Imtiaz Hasnain (eds.) *Linguistics: Theoretical and Applied* (A festschrift for Ruqaiya Hasan), Indian Institute of Language Studies, Delhi, 2004, B. N. Patnaik.
5. Human Development Research in India, A. Agarwal and A. K.Saxena (eds.), *Psychological Perspectives in Environmental and developmental issues*, Concept Publishing Company, New Delhi, 2003, pp.203-209, Lila Krishnan,.
6. Attitudes, Social Cognition and Justice, J. Pandey (ed.), *Psychology in India revisited – Development in the Discipline*, Volume 3, *Applied Social and Organizational Psychology*, Sage Publications, New Delhi, 2004, Lila Krishnan.
7. Social Aspects of Development: Some Issues, Munmun Jha (ed.), *Development and Human Rights*, Project for Economic Education, Mumbai, 2003, A. K. Sharma.
8. Economic Rights: Objectives, Instruments and Achievements, Munmun Jha (ed.), *Development and Human Rights*, Project for Economic Education, Mumbai, 2003, T. V. S. Ramamohan Rao.
9. The Scope of Judicial Reforms in Rehabilitation and Resettlement of Project Affected Persons, Munmun Jha (ed.), *Development and Human Rights*, Project for Economic Education, Mumbai, 2003, Binayak Rath.
10. People's Participation for Efficient and Accountable Management of Irrigation System, *India Infrastructure Report – 2003*, Oxford University Press, New Delhi, pp 243-246, 2003, Rath B.
11. Technological Advancement as a Threat to Human Value System, In DM Mohapatra (Ed) *Technology, Environment and Human Value: A Metaphysical Approach to Sustainable Development*, Concept Publishing Company, New Delhi, pp 27-38, 2004, Rath B.
12. The Burial of the Dead and other Intertextual Connections in Arundhati Roy's *The God of Small Things*, Farhat Ullah Khan & Mohd. Asim Siddique, (eds.), *Tradition and Modernity: Essays on Indian Writing in English*, Department of English, Aligarh Muslim University, Aligarh, April 2003, pp.37-56, T. Ravichandran.

13. Determining the Indeterminate: The Polysemy of Postmodernism, K. S. Iyer (ed.), *New Directions in American Literature*, New Delhi: Prestige Books, 2003, pp. 52-59, T. Ravichandran.
14. Cybernetic Identity in Thomas Pynchon: From V To V-2, Mohit Ray (ed.), *Studies in English Literature: Vol. V*, Atlantic Publishers and Distributors, New Delhi, 2003, pp. 164-173, T. Ravichandran.
15. Postmodern Identity: De/Construction Versus Performativity, Kailash C. Baral & Prafulla C. Kar (eds.), *Identities: Local and Global*, Pencraft's International, Delhi, 2003, pp.112-119, T. Ravichandran.
16. Anita Desai's Cry, the Peacock: A Male Point of View, Mohit K. Ray & Rama Kundu (eds.), *Studies in Women Writers in English*, Atlantic Publishers & Distributors, Delhi, 2004, pp. 159-166, T. Ravichandran.
17. Entrapments at Home and Abroad in Anita Desai's Fasting, Feasting, Mohit K. Ray & Rama Kundu (eds.), *Studies in Women Writers in English*, Atlantic Publishers & Distributors, Delhi, 2004, pp. 188-197, T. Ravichandran.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Information Technology for Management, School of Management Studies, Indira Gandhi National Open University, 2004, V. Bansal.
2. Information Systems for Managers, School of Management Studies, Indira Gandhi National Open University, 2004, V. Bansal.
3. Chapter in the Book - Innovation, Flexibility and Technology Transfer, Information, Communication & E-Marketing to rural India, Editor- Dr. Abid Haleem, Jamia Millia Islamia University, Publisher- Tata McGraw Hill, , 2004, pp 57-56, Jayanta Chatterjee.

DEPARTMENT OF MATHEMATICS

1. Text Book of Ordinary Differential Equations, 2nd Edition, 5th reprint, 2003, Deo, S.G. Lakshmikantham, Raghavendra, V.
2. Algebras from Rough-Neuro Computing: Techniques for Computing with Words, Eds. Pal, S.K., Polkowski, L. and Skowron, A., Springer-Verlag, Berlin, 2004, pp. 157-184. Banerjee, M., Chakraborty, M.K.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. The Qutub Complex, Aryan Books International, New Delhi, 2004. (In Press), R. Balasubramaniam.
2. Structure and Properties of Engineering Materials, Tata McGraw-Hill, New Delhi, 2003 (ISBN 0-07-048287-X), V.S.R. Murthy, A.K. Jena, K.P. Gupta and G.S. Murthy.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Computational Fluid Flow and Heat Transfer, published as a part of the IIT Kanpur Series (580 pages) by Narosa Publishers, N. Delhi, ISBN: second edition;; [International edition distributed by Alpha Science, London], July 2003, K. Muralidhar and T. Sundararajan, Editors.
2. Introduction to Fluid Mechanics and Fluid Machines, Second Edition, Tata McGraw Hill Publishing Company, New Delhi, 2004, S.K. Som and G. Biswas.
3. Two Chapters in Computational fluid Flow and Heat Transfer, Narosa, India (1995), Revised Edition, 2003, Dr. V.Eswaran, Edited by K. Muralidhar and T. Sundararajan under the auspices of IIT Kanpur Series.
4. Heat Transfer, Book Completed by using QIP Funds, P.S. Ghoshdastidar.
5. Electrochemical Machining, Electrochemical Machining, Published by American Society of Metals, Columbus, Ohio, U.S.A., ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and Protection, 2003, V.K.Jain.
6. Electrochemical Allied Processes, Published by American Society of Metals, Columbus, Ohio, U.S.A, ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and protection, 2003, V.K.Jain.
7. Electrochemical Hybrid Processes, Published by American Society of Metals, Columbus, Ohio, U.S.A., ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and Protection, 2003, V.K.Jain.
8. An introduction to genetic algorithms for engineering optimization. In G. C. Onwubolu and B. V. Babu (eds.) New Optimization Techniques in Engineering (NO TIE), Springer, 2003, pp. 13-51, Deb, K.
9. The Good of the Many Out- weights the Good of the One: Evolutionary Multiobjective Optimization, IEEE Newsletter: connections, 1(1), 2003, pp. 9-13, Corne, D.W., Deb, K., Fleming, P.J., Knowles, J.D.

10. Proceedings of the Second Evolutionary Multi-Criterion Optimization (EMO-03 Conference (Lecture Notes in Computer Science (LNCS) 2632), Heidelberg: Springer, 2004, Fonseca, C., Fleming, P., Zitzler E., Deb, K., and Thiele, L.
11. Multi-objective evolutionary algorithms: Introducing bias among Pareto-optimal solutions. In A. Ghosh and S. Tsutsui (Eds.) *Advances in Evolutionary Computing: Theory and Applications*, Chapter 10. London: Springer-Verlag, 2003, pp. 263-292, Deb, K.
12. Biofuels, Chapter in *Handbook Waste to Wealth*, being published by Tata Energy Research institute, Delhi, 40 Pages, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. *Small Hydrogenated Silicon Clusters in Disordered Materials*, 2003, Editors: S. Prakash, N. Goyal, K. Tripathi, R. Prasad, Narosa Publishing House.
2. Ground State Structures of Si_2H_n clusters by D. Balamurugan and R. Prasad, in *Disordered Materials*, Editors: S. Prakash, N. Goyal and K. Tripathi, Narosa Publishing House, 2003, R. Prasad.
3. Oscillating exchange coupling in Fe/Nb multilayers, In *Disordered Materials*, Editors: S. Prakash, N. Goyal and K. Tripathi, Narosa Publishing House, New Delhi, 2003, N.N. Shukla and R. Prasad.
4. Chapter 19: Light and Thermally Induced Metstabilities in Nanocrystalline Silicon, In *Advances in Nanoscience and Nanotechnology NISCAIR*. N.P. Mandal and S.C. Agarwal.
5. Second harmonic generation in nanocrystalline ZnO films in *Perspectives in Modern Optics and Optical Instrumentation*, Anita Publication, New Delhi, R.K. Thareja, Editors, J. Joseph, A. Sharma and V. K. Rastogi.
6. Proceedings of the workshop QCD 2002, published by PRAMANA, Indian Academy of Sciences, *Journal of Physics*, Vol 61, No. 5, Nov., 2003, P. Jain along with S.D. Joglekar and V. Ravishankar acted as guest editors.
7. Synchronisation of chaos, chapter in the book, *External feedback effects on semiconductor lasers* eds. D. Kane and K.A. Shore, John Wiley & Sons, 2004, S. Sivaprakasam and C. Masoller.

Research Papers Published in Journals and Conference Proceedings

CENTRE FOR LASER TECHNOLOGY

1. Emission spectroscopy of laser ablated Si plasma related to nanoparticle formation, *Appl. Surf. Sci.*, 222, 2003, 382, V. Narayanan and R. K. Thareja.
2. Simplified model to account for dependence of ablation parameters on temperature and phase of the ablated material, *Appl. Surf. Sci.* 222, 2003, 293, Sushmita R Franklin and R K Thareja.
3. Photo-excited photonic characteristics of ZnO thin films deposited by laser ablation method, *Elect Eng Japan* 144, 2003, T. Ohshima, T. Ikegami and K. Ebihara, R.K. Thareja.
4. Preparation of ZnO thin films on various substrates by pulsed laser deposition, *Surf. Coating Tech.* 169/170, 2003, 517, T. Ohshima, R. K. Thareja, T. Ikegami and K. Ebihara.
5. Synthesis of p-type ZnO thin films using co-doping techniques based on KrF excimer laser deposition, *Thin Solid Films* 435, 2003, 49, T. Ohshima, T. Ikegami, K. Ebihara, J. Asmussen and R. K. Thareja.
6. Dependence of ablation parameters on temperature and phase of the ablated material, *J. Appl. Phys.* 93, 2003, 5763, S. Franklin and R. K. Thareja.
7. Photoluminescence from Silicon nano-particles synthesized by pulsed laser ablation *Mod. Phys. Lett. B* 17, 2003, 121, V. Narayanan and R. K. Thareja.
8. Ulrike Willer and Wolfgang Schade, 'Phase transformation in room temperature pulsed laser deposited TiO₂ thin films' *Appl. Surf. Sci.*, 206, 2003, 137, A. K. Sharma, R. K. Thareja.
9. Pulsed laser deposited ZnO films for UV laser and nonlinear medium, *ISRAPS Bull.* 13, 03, 2003, R. K. Thareja and A. Mitra.
10. Effect of NO and ozone on electrical conductivity of ZnO thin films by pulsed laser deposition, 3rd International Workshop on Basic Aspects of Non-equilibrium Plasma

- Interacting with Surfaces, P-9, Feb 7-9, 2003, Awaji, S Korea, Paper: T. Ohshima, P. K. Shin, I. Kawashima, K. Ebihara, T. Ikegami, and R. K. Thareja.
11. National Symposium on Engineering Optics, Merrut Univ, April 7, 2003, Mirrorless Lasers, Paper: R. K. Thareja.
 12. Visualization of the convective field above a heated cylinder by a laser schlieren technique, accepted for publication in International Communication in Heat and Mass Transfer, 2004, Atul Srivastava, P.K. Panigrahi and K. Muralidhar.
 13. Buoyancy-driven convection in superimposed fluid layers in an octagonal cavity, accepted for publication in International Journal of Thermal Sciences, 2004, Sunil Punjabi, K. Muralidhar and P.K. Panigrahi.
 14. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, accepted for publication in Optics and Lasers in Engineering, 2004, A. Srivastava, A. Phukan, P.K. Panigrahi and K. Muralidhar.
 15. Comparison of interferometry, schlieren and shadowgraph for visualizing convection during the growth of a KDP crystal from its aqueous solution, accepted for publication in Journal of Crystal Growth, 2004, Srivastava, K. Muralidhar and P.K. Panigrahi.
 16. Interferometric Study of Buoyancy-driven Convection in a Differentially Heated Circular Fluid Layer, accepted for publication in Heat and Mass Transfer, 2004, A. Srivastava, P.K. Panigrahi and K. Muralidhar.
 17. Buoyancy-driven convection in superposed air-water layers: numerical and experimental study, Institution of Engineers India Journal, Mechanical Engineering Division, Vol. 84, pp 31-35, 2003, A. Sethia, Sunil Punjabi and K. Muralidhar.
 18. Numerical simulation and optical visualization of solute transport during the initial stages of crystal growth from its solution, presented at National Laser Symposium, IIT Kharagpur, December 2003, Sunil Verma, A. Srivastava, V. Prabhakar, K. Muralidhar and V.K. Wadhawan.
 19. Convection during the growth of KDP crystals: Flow visualization and modeling, presented at the 4th Asian Meeting of Ferroelectrics AMF-4, IISc Bangalore, December 2003, Sunil Verma, K. Muralidhar and V.K. Wadhawan.
 20. Beam hardening in X-ray CT, Proceedings of the National Seminar on Non-destructive Testing, held in Thiruvananthapuram, 11-13 December, 2003, pp. 183-

- 188, Mishra, K.K., Quraishi, A.M., Mishra, S., Kumar, A., Srivastava, A., Muralidhar, K. and Munshi, P.
21. Synchronization regimes in chaotic optical communication systems“, IEE Proc. Optoelectronics , 150, 191-198, April 2003, I. Pierce, I. A. Valle, S. Sivaprakasam, P. Rees, P. S. Spencer and K. A. Shore.
 22. Nullified time-of-flight lead-lag in synchronisation of chaotic external cavity laser diodes, Optics Letters, 28, 1397-1399, August 2003, S.Sivaprakasam, J.Paul, P.S.Spencer, P.Rees and K.A.Shore.
 23. Anticipated chaos in a nonsymmetric coupled external-cavity-laser system, Phys.Rev. A., 68, Art. No. 033818, September 2003, Paul Rees, Paul S. Spencer, Iestyn Pierce, S. Sivaprakasam and K.A.Shore.
 24. Comparison of closed-loop and open loop feedback schemes of message decoding using chaotic laser diodes, Optics Letters, 28, 2168-2170, Nov. 2003, M.W.Lee, J.Paul, S.Sivaprakasam and K.A.Shore.
 25. Polarisation resolved relative intensity noise measurements of a vertical cavity surface emitting laser subjected to strong optical feedback , IEEE Photonics Tech Letters, 16, 9-11, January 2004, S. Sivaprakasam, S. Bandyopadhyay, Y.Hong, P.S. Spencer And K. A. Shore.
 26. Dual-channel chaotic optical communications using external-cavity semiconductor lasers, J. Opt Soc America, 21, pp. 514-521, March 2004, J. Paul, S. Sivaprakasam and K. A. Shore.
 27. Analysis of Implantation Induced Bragg Gratings in Quantum Wells, pp - Proceedings of CODEC - 04, Jan. 01-03, 2004, Kolkata, India, R. K. Sonkar and U. Das.
 28. Parametric Study of Pellets for Elemental Analysis with Laser Induced Breakdown Spectroscopy, Hongbo Zheng, Fang-Yu Yuh and Jagdish P. Singh, Applied Optics, Vol 43, p 1-6 2004, Bansi Lal.
 29. In-situ Monitoring of Glass Batch Composition Using Laser Breakdown Spectroscopy, Proc 105th Annual Meeting & Exposition, April 27-30, 2003, Nashville, Tennessee, USA, Bansi Lal, Fang-Yu Yueh, Jagdish P. Singh and William G. Ramsay.

30. Optimization of Laser Ablative Propulsion Parameters: A Proposal, in Beamed Energy Propulsion, pp.251-254, Ed Andrew V. Pakhomov AIP Conference Proceedings, 664, 2003, Bansi Lal, Fang-Yu Yueh and Jagdish P. Singh.
31. Wavelet Transform of Breast Tissue Fluorescence Spectra: A Technique for Diagnosis of Tumors, , IEEE JSTQE, Vol. 9, No. 2, March/April 2003, Nidhi Agarwal, Sharad Gupta, Bhawna, Asima Pradhan and K. Vishwanathan, Prasanta K. Panigrahi.
32. Recovery of Turbidity Free Fluorescence from Measured Fluorescence: An Experimental Approach, Optics Express, Vol. 11, No. 24, 3320-3330, 2003, N. C. Biswal, S. Gupta, N. Ghosh and Asima Pradhan.
33. Experimental and Theoretical Investigation of Fluorescence Photobleaching and Recovery in Human Breast Tissues and Tissue Phantoms, Applied Optics, Vol. 43, No. 5, Feb. 2004, S. Gupta, Bhawna, Pallab Goswami, Asha Agarwal and Asima Pradhan.
34. Detection of milk adulteration using fluorescence spectroscopy: Proc. Nat. Laser Symp. 2003, Sharad Gupta, N. C. Biswal and Asima Pradhan.
35. Extraction of biochemical information form intrinsic fluorescence: Proc. Nat. Laser Symp. 2003, N. C. Biswal, Sharad Gupta and Asima Pradhan.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Proposed Hill Council for Kargil: A Shadow of Breakdown of Syneretic Kashmiriyat in Valley, Mainstream, New Delhi, Feb. 15, 2003, p.13-16, Kunal Ghosh & Vikas Kumar.
2. Presentation of Ahmadiyahs in Islamic Pakistan & Secular India, Mainstream, New Delhi, July 12, 2003, p.6, Kunal Ghosh.
3. Israel's Secret Agenda: Road Map Must Lead to Temple Mount, Mainstream, New Delhi, Sept. 6, 2003, p 19-22 & 28, Kunal Ghosh.
4. A C^0 element for free vibration of composite plates with uncertain material properties, Advanced Composite Materials, Vol 11, No. 2003, B.N. Singh, D. Yadav and NGR Iyengar.
5. Nonlinear Response Statistics of Composite Laminates with Random Material Properties under random Loading, Composite Structures, 60 2003, 375-383, Amit K. Onkar and D. Yadav.

6. K. Ghosh, I.V.S. Sridhar, A. Singhal and Om Prakash, Estimation of Drag Coefficient from Radar Tracked Trajectory Data of an Artillery Shell, *Journal of Aerospace Sciences & Technologies*, Vol. 56, No. 1, Feb., 2004.
7. K. Ghosh, I.V.S. Sridhar, A. Singhal and Om Prakash, Trajectory Modelling of an Artillery Shell using Feed Forward Neural Networks, *Journal of The Institution of Engineers India*, Vol. 84, November, 2003, pp. 47-49.
8. K. Ghosh, A. Jha and A. Singhal, Neural Models for Predicting Trajectory Performance of an Artillery Rocket, *Journal of Aerospace Computing, Information and Communication*, June, 2003 Accepted.
9. J.Ed Akin, T. Tezduyar, M.Ungor, S.Mittal, Stabilization Parameters and Smagorinsky Turbulence Model, *Journal of Applied Mechanics, Transactions of the ASME*, 70, 2003, 2-9.
10. S.Mittal, B. Kumar, Flow Past a Rotating Cylinder, *Journal of Fluid Mechanics*, 476, 2003, 303-334.
11. S.P. Singh and S.Mittal, Simulation of drag crisis in flow past a circular cylinder using 2D computations, *Journal of Aerospace Sciences & Technologies*, 55, 2003, 56-62.
12. S.Mittal, Effect of aslip splitter plate on vortex shedding from a cylinder, *Physics of Fluids*, 3, 2003, 817-820.
13. S.Mittal, Flow Control Using Rotating Cylinders: Effect of Gap, *Journal of Applied Mechanics, ASME*, 70, 2003, 762-770.
14. S.Mittal and V. Kumar, Vortex induced vibrations of a pair of cylinders at Reynolds number 1000, *International Journal of Computational Fluid Dynamics*, 2003.
15. S.Mittal, Three-dimensional instabilities in flow past a rotating cylinder, *Journal of Applied Mechanics, ASMe*, 71, 2004, 89-95.
16. S.P. Singh and S.Mittal, Role of shear layer instability in the transition of boundary layer on a bluff body, *Journal of Visualization*, 7, 2004, 107.
17. Ahmad N.S., Upadhyay C.S. and Venkatesan C., Actuation, Sensing and Shape Control of a art Beam Using a General Electro-thermo-elastic formulation, 11th AIAA/ASME /AHS Adaptive Structures Conference, AIAA-2003-1637, Norfolk, Virginia, USA, April 2003.

18. Ahmad N.S. Upadhyay C.S. and Venkatesan C., Linear and Nonlinear Analysis of a Smart Beam Using General Electrothermoelastic Formulation, AIAA Journal, Vol. 42, No.4, April 2004.
19. P.M. Mohite and C.S. Upadhyay, Focussed adaptivity for laminated plates, Computers and Structures, 81 2003, pp 287-298.
20. Effects of initial temperature on the structure of laminar CH₄- air premixed flames emission, Fuel, 82, 2003, 1471-1475, D. P. Mishra
21. An experimental study of flammability limits of LPG/air mixtures, Fuel, 82, 2003, 863-866, D. P. Mishra & A. Rahman
22. An experimental study of lean premixed combustor, International Journal of Turbo & Jet Engines, 20, 2003, 245-253, D. P. Mishra & R.Khanna.
23. An experimental determination of stability limits of CNG-Air premixed flame, proceedings of the xviii National Conference on IC Engines & Combustion, December 17-19, 2003, Combustion Institute Indian Section IITM Chennai, 355, D. P. Mishra.
24. Emission studies of Impinging premixed flames, proceedings of the xviii National Conference on IC Engines & Combustion, December 17-19, 2003, Combustion Institute Indian Section IITM Chennai, 361, D. P. Mishra.
25. Experimental Investigation of lean premixed swirl burner, 18th Engineering Congress, December, 2003, R.Kannan & D. P. Mishra.
26. Wind Tunnel and Open Air Tests of Vertical Axis Wind Turbine Model, 26th National Renewable Energy Convention of Solar Energy Society of India & International Conference on New Millennium, Coimbatore, Jan. 17-19, 2003, p. 386-391., Kunal Ghosh, B.Chandra, V.Johar, M.Sathyakan & Vivek.
27. Experiments on Vinh-Houmaire Turbine, 17th Canadian Congress of Applied Mechanics CANCAM 03, Univ. of Calgary, Alberota, Canada, June 1-6, 2003, p 408-409, Vol. II, Kunal Ghosh, B.Chandra, V.Johar, Sathyakan & Vivek.
28. Religio-Linguistic Political Phenomena of Indian North-East: Roman Versus Devnagari Versus Bengali-Assamese Script, Social Science Abstracts, Vol. XXVII, 2003, Session: Linguistics, Proceedings of 27th Indian Social Science Congress, Dec. 03-07, 2003, IIT Kharagpur, p.235, Kunal Ghosh.

29. Creation of a Separate Hill Council for Kargil and the Decaying Kashmiri Ehtos : Language is the Common Denominator, Social Science Abstracts, Vol XXVII, 2003, Session:Linguistics, Proceedings of 27th Indian Social Science Congress, Dec. 03-07, 2003, IIT Kharagpur, p.235, Kunal Ghosh & Vikas Kumar.
30. Numerical and Experimental Investigation of Impact on Skewed I-Section Bracket. IMPLAST-03, 8th International Symposium on Plasticity and Impact Mechanics, Vigyan Bhawan, New Delhi, 16-19 March 2003. Phoenix Publishing House Pvt. Ltd. 1084-1091, N.G.R.Iyengar, N.N.Kishore, Prashant Kumar, Abhishek K Singh, and Bhanu kishore.
31. Dynamic Response of composite panels with random Material Properties and Random Loading, IMPLAST-03,8th International Symposium on Plasticity and Impact Mechanics, Vigyan Bhawan, New Delhi, 16-19 March, 2003. Phoenix Publishing Pvt. Ltd. 110001110, Bhriugu N Singh, Dayand Yadav and N.G.R.Iyengar
32. Laser Based Ultrasonics LBU for automated Inspection of composite specimens 2003 SEM Conference, Proc. Society for experimental Mechanics,USA, Charlotte, North Carolina USA, June 2-4,2003,Session 16, Paper 9, N.N.Kishore, N.G.R.Iyengar and P.S.Sarin.
33. Development of Graded Barium Titanate Patches for Dynamic Applications, 2003 SEM Conference,June 2-4,2003, Session 46, paper 30, V.R.Rao,S.Kamle and N.G.R.Iyengar.
34. Stability analysis of composite laminates Using Simple Higher Order Theory, Proc. ISAMPE National Conference on Composites & National Seminar On Aerospace Structures, Spet. 5-6,2003,375-381, N.G.R.Iyengar & Arindam Chakraborty.
35. A C^o Element for Free Vibration of Composite Plates with Uncertain Material Properties., Advanced Composite materials, Vol. 11, 2003, 331 - 350, Singh, B.N, D. Yadav and N.G.R.Iyengar.
36. Loads and vibration in helicopters: Status and future directions, Invited paper: International Seminar – Aero India 2003, Bangalore, 2003, Venkatesan, C.
37. Actuation, sensing and shape control of a smart beam using a general electro-thermo-elastic formulation, 11-th AIAA/ASME/AHS Adaptive Structures Conference, Norfolk, Virginia, April 2003, Nazir, S.A., Upadhyay, C.S., and Venkatesan, C.

38. Secondary Flows and Separation in S-duct Diffusers - Their Detection and Control, FEDSM 2003-45109, Proceedings of the 4th ASME/JSME Joint Fluids Engineering Conference, 2003, Honolulu, Hawaii, USA, Sullerey, R.K. and Pradeep A.M.
39. Performance Comparison of Air Turborocket Engine with Different Fuel Systems, AIAA 2003-4417, 39th AIAA/ASME/SAE /ASEE Joint Propulsion Conference, Huntsville, Alabama, USA, 2003, Sullerey, R.K., Pradeep, A.M. and Mayank Kedia.
40. Pradeep, A.M. and Sullerey, R.K., 2003, Wall Shear Stress Measurements in Pressure Gradients, Proceedings of the 30th National Conference on Fluid Mechanics and Fluid Power FMFP, December 11-13, National Institute of Technology, Suratkal, Karnataka, India.
41. Sullerey, R.K. and Pradeep, A.M., 2003, Flow Control in Rectangular to Circular Transitioning S-duct Diffusers, Proceeding of the 13th National Conference of the Indian Society of Mechanical Engineers, December 30-31, Indian Institute of Technology Roorkee, India.
42. Pradeep A.M. and Sullerey, R.K., 2003, A Displacement Based Wall Shear Stress Sensor, Journal of Institution of Engineers, India, Vol. 84, pp. 27-31.
43. Pradeep, A.M., and Sullerey, R.K., 2004, Application of Shear Sensitive Liquid Crystals in Flow Visualization & Skin Friction Estimation, Optical Diagnostics in Engineering, 7, pp. 1-9.
44. Sullerey, R.K., and Pradeep, A.M., 2004, Secondary Flow Control using Vortex Generator Jets, accepted for publications in Trans. ASME, Journal of Fluids Engineering.
45. Secondary flow Control in a Circular S-duct Diffuser Using Vortex Generator Jets, AIAA2004-2615, to be presented at the AIAA 2nd Flow Control Conference, Portland, Oregon, USA, 2004, Pradeep, A.M. and Sullerey, R.K.
46. Neural Models for Predicting Trajectory Performance of an Artillery Rocket, AIAA Atmospheric Flight Mechanics Conference, Austin, Texas, USA, Aug. 11-15, 2003, Paper No. 2003-5471, A. K. Ghosh and Om Prakash.
47. Study of Flow in a Supersonic Mixed-Compression Inlet, Proceedings of the 6th Annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August 11-13, 2003, Manish Kumar Jain and S.Mittal.

48. Finite Element Computation of Fluid Flows, in Abstracts of the International Indian-Russian, Workshop, High Performance Computing in Science and Engineering, HPC SE 2003, Moscow, Russia, 2003, S.Mittal.
49. Shear Layer Instability and Drag-crisis for flow past a Cylinder, in Abstracts of the Seventh U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, S.Mittal and S.P. Singh.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. A gene mutated in juvenile myoclonic epilepsy encodes a protein regulating $Ca_v2.3$ channel. *Nature Genetics* in press, 2004, Suzuki T, Delgado-Escueta AV, Aguan K, Shi J, Alonso ME, Hara J, Nishida M, Numata T, Takeuchi T, Morita R, Medina MT, Bai D, Ganesh S, Sugimoto Y, Inazawa J, Bailey JN, Ochoa A, Jara-Prado A, Rasmussen A, Ramos-Peek J, Cordova G, Rubio-Donnadieu F, Inoue Y, Osawa M, Kaneko S, Oguni H, Mori Y, and Yamakawa K.
2. The carbohydrate-binding domain of Lafora disease protein targets Lafora polyglucosan bodies. *Biochemical and Biophysical Research Communications* 31, 1101-1109, 2004, Ganesh S, Tsurutani N, Suzuki T, Hoshii Y, Ishihara T, Delgado-Escueta AV, and Yamakawa K.
3. Recent developments in the quest for myoclonic epilepsy genes. *Epilepsia* 44, 13-26, 2003, Delgado-Escueta AV, Perez-Gosienkfiao KB, Bai D, Bailey J, Medina MT, Morita R, Suzuki T, Ganesh S, Sugimoto Y, Yamakawa K, Ochoa A, Jara Prado A, Rasmussen A, Ramos-Peek J, Cordova S, Rubio-Donnadieu F and Alonso ME.
4. The Lafora disease gene product laforin interacts with HIRIP5, a phylogenetically conserved protein containing a NifU-like domain. *Human Molecular Genetics* 12, 2359-2368, 2003, Ganesh S, Tsurutani N, Suzuki T, Ueda K, Agarwala KL, Osada H, Delgado-Escueta AV, and Yamakawa K.
5. Surface tension parameterization in molecular dynamics simulations of a phospholipid-bilayer membrane: Calibration and effects, *J. Phys. Chem. B* in press, 2004, R. Sankararamkrishnan and H. Weinstein.
6. Structure and Regulation of the cAMP binding domains of Epac2, *Nature. Struct. Biol.*, 2003, 10, 26-32, Balaji Prakash, Holger Rehmann, Eva Wolf, Alma Rueppel, Johan de Rooij, Johannes. L. Bos & Alfred Wittinghofer. Cover Article
7. Identification of residues in the human guanylate-binding protein 1 critical for nucleotide binding and co-operative GTP hydrolysis. *J. Mol. Biol.*, 2004, in press, Gerrit J. K. Praefcke, Stephan Kloep, Hauke Lilie, Balaji Prakash, & Christian Herrmann.

8. Short C=O...C intermolecular contacts for molecular assembly. Accepted by royal society journal CrystEngg Comm. in press, Gitalee Bhattacharjee, G. Savitha and Gurunath Ramanathan.
9. The Leucine Zipper Motif of the Drosophila AF10 Homologue Can Inhibit PRE-Mediated Repression: Implications for Leukemogenic Activity of Human MLL-AF10 Fusions Molecular and Cellular Biology 23:119-130, 2003, Perrin, L.; Bloyer, S. ; Ferraz, C.; Agrawal, N.; Sinha P. and Dura, J.M.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Pervaporation of Hydrazine Hydrate: Separation characteristics of membranes with hydrophilic to hydrophobic behaviour, J. Membrane Sci. in press, S.V. Satyanarayana, P.K. Bhattacharya.
2. Composite membranes for hydrophobic pervaporation: Study with toluene-water system, Chem. Eng. J. in press, S.V. Satyanarayana, A. Sharma and P.K. Bhattacharya.
3. Pervaporation from a dense membrane: Role of permeant-membrane interactions, Kelvin effect and membrane swelling, Langmuir in press, S.V. Satyanarayana, A. Sharma and P.K. Bhattacharya.
4. Removal of Aniline from Aqueous Solution in a Mixed Flow Reactor using Emulsion Liquid Membrane, J. Membrane Sci., 226, 185-201, 2003, S. Datta, P.K. Bhattacharya and N. Verma.
5. Real Coded Genetic Algorithm for Optimization of Pervaporation Process Parameters for Removal of Volatile Organics from Water:, Ind. Eng. Chem. Res., 42:1331-1338, 2003, S. V. Satyanarayana and P.K. Bhattacharya.
6. A note on wall effect on the terminal falling velocity of a sphere in quiescent Newtonian media in cylindrical tubes, Powder Technol., 129, 53-58, 2003, R. P. Chhabra, S. Agarwal and K. Chaudhary.
7. A note on pressure drop for the cross-flow of power-law liquids and air/power law liquid mixtures past a bundle of circular rods, Chem. Eng. Sci., 58, 1365-1372, 2003, T.V. Malleswara Rao and R.P. Chhabra.
8. Hydrodynamic behaviour of an ensemble of encapsulated liquid drops in creeping motion: A fluid-mechanics based model for liquid membranes, Fluid Dynamics Research, 32, J. 201-215, 2003, M. Ferreira, A.A. Soares and R.P. Chhabra.

9. Two-dimensional steady flow of a power law fluid past a square cylinder in a plane channel: Momentum and heat transfer characteristics, *Ind. Eng. Chem. Res.*, 42, 5674-5686, 2003, A.K. Gupta, A. Sharma, R.P. Chhabra and V. Eswaran.
10. Power law fluid flow past a square cylinder: Momentum and heat transfer characteristics, *Chem. Eng. Sci.*, 58, 5315-5329, 2003, B. Paliwal, A. Sharma, R.P. Chhabra and V. Eswaran.
11. Convective heat transfer for power law fluids in packed and fluidised beds of spheres, *Chem. Eng. Sci.* 59, 645-659, 2004, Rupali Shukla, S.D. Dhole, R.P. Chhabra and V. Eswaran.
12. Propane Dehydrogenation over Alumina Supported Chromia Catalysts, *Bulletin of the Catalysis Society of India*, 2, 29, 2003, S. Thapliyal and G. Deo
13. Effect of Oxide Support, Loading and Surface Area on the Kinetic Parameters for Propane ODH over Supported Vanadium Oxide Catalysts, *Chemcon-2003, IIChe Annual Meeting*, Bhubaneswar, December, 2003, K.K. Routray and G. Deo.
14. In situ UV-vis-NIR Diffuse Reflectance and Raman Spectroscopy and Catalytic Activity Studies of Propane ODH over $\text{CrO}_3/\text{ZrO}_2$ catalysts, *Chemcon-2003, IIChe Annual Meeting*, Bhubaneswar, December, 2003, T.V.M. Rao, J.-M. Jehng, I.E. Wachs and G. Deo.
15. Oxidative Dehydrogenation of Propane using Phosphorous modified 3% $\text{V}_2\text{O}_5/\text{TiO}_2$ and 3% $\text{Cr}_2\text{O}_3/\text{TiO}_2$ Catalysts, *Chemcon-2003, IIChe Annual Meeting*, Bhubaneswar, December, 2003, R.P. Singh, P. Singh and G. Deo.
16. Chemical characterization of supported rhenium oxide catalyst using LPG oxidation reaction, *Chemcon-2003, IIChe Annual Meeting*, Bhubaneswar, December, 2003, G. Manik and G. Deo.
17. Transesterification of vegetable oils for biodiesel production: engine testing for performance and emissions. *Proceedings of the XVIII National Conference on IC engines and combustion*, College of Engineering, Thiruvananthapuram, Kerala, India. December 17-19, 2003. 571-580. AK Agarwal, S Garg, N Kaistha and S Sinha.
18. Calculation of Fire & Explosion Index F&EI Value for the Dow Guide taking credit for the Loss Control Measures', *Journal of Loss Prevention in the Process Industries*, 16 4, 235-241, 2003, J.P.Gupta, G. Khemani and M.S. Mannan.

19. Real Cost of Process Safety – a Clear Case for Inherent Safety, *Trans IChemE U.K. Process Safety and Environmental Protection*, Vol. 81 B, 406-413, 2003, J.P. Gupta, D.C. Hendershot and M.S. Mannan.
20. Hydroxylamine Production: Will a QRA Help You Decide, *Reliability Engineering and System Safety*, 812, 215-224, 2003, M. S. Mannan, W.J. Rogers, J. T. Baldwin, J.P.Gupta, Y. Wang, S.R.Saraf, and K. Krishna.
21. A simple graphical method for measuring inherent safety, *Journal of Hazardous Materials*, 104 issues 1-3, 15-30, 2003, J.P.Gupta and D.W. Edwards.
22. Bhopal: Eighteen, going on Nineteen and Fading?, Invited Guest Editorial, *Trans. IChemE U.K., Process Safety and Environmental Protection*, 81 B, 227-228, 2003, J. P. Gupta.
23. Use of failure rate databases and process safety performance measurements to improve process safety, *Journal of Hazardous Materials*, 104, 75-93 2003, N. Keren, H.H. West, W.J. Rogers, J.P. Gupta, M.S. Mannan.
24. 20 years after Bhopal – Effects on Process Safety, *Proceedings of Process Safety and Industrial Explosion Protection, Session 1, International ESMG Symposium 2004, Nurnberg, Germany, March 16-18, 2004*, J. P. Gupta.
25. Inherent Safety Measurement Indices, *Proceedings of Process Safety and Industrial Explosion Protection, Session 4, International ESMG Symposium 2004, Nurnberg, Germany, March 16-18, 2004*, J. P. Gupta.
26. Multi-objective Optimization of an Industrial Fluidized-bed Catalytic Cracking Unit FCCU using Genetic Algorithm GA with the Jumping Genes Operator, *Comp. Chem. Eng.*, 27, 1785-1800, 2003, R. B. Kasat and S. K. Gupta.
27. Multi-objective Optimization of Venturi Scrubbers Using a 3-D Model for Collection Efficiency, *J. Chem. Tech. Biotech.*, 78, 308-313, 2003. G. Ravi, S. Viswanathan, S. K. Gupta and M. B. Ray.
28. Dynamic Model of an Industrial Steam Reformer and its Use for Multiobjective Optimization, *Ind. Eng. Chem. Res.*, 42, 4028-4042, 2003, A. D. Nandasana, A. K. Ray and S. K. Gupta.
29. Applications of Genetic Algorithm in Polymer Science and Engineering, *Materials and Manuf. Processes*, 18, 523-532, 2003, R. B. Kasat, A. K. Ray and S. K. Gupta.

30. Applications of the Non-Dominated Sorting Genetic Algorithm NSGA in Chemical Reaction Engineering, Intern. J. Chem. Rxn. Eng., 1, R2, 1-16, 2003, A. D. Nandasana, A. K. Ray and S. K. Gupta.
31. Multi-objective Optimization of Semi-batch Copolymerization Reactors using Adaptations of Genetic Algorithm GA, Macromolecular Theory Simulation, 13, 73-85, 2004, A. Nayak and S. K. Gupta.
32. Simulation and Multiobjective Optimization of the Continuous Tower Process for Styrene Polymerization, J. Appl. Polym. Sci., in press. R. Sharma and S. K. Gupta.
33. Multiobjective Optimization of an Industrial Crude Distillation Unit using the Elitist Non-dominated Sorting Genetic Algorithm, Chem. Eng. Res. Des., 00, 0000-0000, 2004, S. V. Inamdar, S. K. Gupta and D. N. Saraf.
34. Genetic Algorithm GA and Multiobjective Optimization with the Jumping Gene Transposon Adaptation—a Primer, 2004, S. K. Gupta and S. Bhatt.
35. Selection of Mass Transfer Correlations for Rate Based LLX Model, Korean J. Chemical Eng., 204, 609-616, 2003, Debjit Sanpui and Ashok Khanna.
36. Closure Equations in the Estimation of Binary Interaction Parameters, Korean J. Chemical Engineering, 204, 736-744, 2003, Syed Akhlaq Ahmad and Ashok Khanna.
37. Estimation for LLE of PIONA families and Its Validation, Computers and Chemical Engineering, Debjit Sanpui, Manish K Singh and Ashok Khanna.
38. Estimation of LLE for PIONA families in Sulfolane and Its Validation, Fluid Phase Equilibria, 2152, 2004, Ashok Khanna, Manish K Singh, Saurabh Bajpai and Debjit Sanpui.
39. Rate Based Non-Isothermal LLX Model – Its Experimental Validation, AIChE J, 502, 2004, Debjit Sanpui, M K Singh and A Khanna.
40. Ternary Mass Transfer Studies in Bench Scale LLX Column and Its comparison with Simulations, Korean J. Chemical Eng., Debjit Sanpui, Manish K Singh, Ashok Khanna.
41. Synthesis and Characterization of Metallocene Catalysts – Cocatalysts, Proc. of Indian Chemical Eng. Congress 2003 CHEMCON 2003, 19-20 December, 2003, Bhubaneswar, CHM 290 – 234, S. Kumar, V. Katiyar and A. Khanna.

42. Thermodynamic Equilibrium of Ionic Liquids: A Brief Review, Proc. of Indian Chemical Engineering Congress 2003 CHEMCON 2003, 19-22 December 2003 Bhubaneswar, CHM-077, p. 263, T. Banerjee, S. Kumar and A. Khanna.
43. Thermodynamics of Ionic Liquids – A Review, Proc. of International Conference on Chemical Engineering 2003 ICChE 2003 December 29-30, 2003, Dhaka, Paper No. 9, p. 45-49, T. Banerjee, M. K. Singh, A. Agarwal and A. Khanna.
44. HDPE Polymerization using Synthesized Metallocenes and Cocatalysts, Proc. of International Conference on Chemical Engineering 2003 ICChE 2003, December 29-30, 2003, Dhaka, Bangladesh Paper No. 34, p. 149-153, S. Kumar, V. Katiyar and A. Khanna.
45. HDPE Polymerization using synthesized metallocenes and cocatalysts, Indo-US Conference on Recent Advances in Organo metallic Catalysis and Olefin Polymerization at IIT Madras, Chennai, December 10-12, 2003, P. 28, p51-52, Vimal Katiyar, Sushil Kumar and Ashok Khanna.
46. Liquid phase oxidation of n-octane catalyzed by silica gel supported vanadium VO_2^+ complex using molecular oxygen, React Kinet Catal L, 802, 223-231, 2003, G.S. Mishra, A. Kumar.
47. Synthesis and characterization of a nanofiltration carbon membrane derived from phenol-formaldehyde resin, Carbon, 4115, 2961-2972, 2003, N. Kishore, S. Sachan, K.N. Rai, Anil Kumar.
48. Oxidation of cyclohexane with molecular oxygen using a Schiff base cobalt complex bonded to carbamate-modified silica gel, Transit Metal Chem, 288, 913-917, 2003, A. Kumar, G.S. Mishra and Anil Kumar.
49. Covalently bonded Schiff base cobalt complex catalyst for the selective oxidation of linear alkanes using molecular oxygen, J. Mol. Catal. A- Chem, 2011-2, 179-188, 2003, A. Kumar, G.S. Mishra and Anil Kumar.
50. Preparation of high capacity weak base polymethyl methacrylate-ethylene glycol dimethylacrylate copolymer anion exchange resin by modification using NO_x , J. Appl. Polym. Sci., 897, 1991-1999, 2003, S. Sinha, N. Jayaswal, Anil Kumar.
51. Silica gel supported [1,4-bis(salicylidene) amino-phenylene] vanadium oxo complex catalyst for the oxidation of n-heptane using molecular oxygen, J. Mol. Catal. A-Chem., 1921-2, 275-280, 2003, G. S. Mishra and Anil Kumar.

52. Study of Carbon Nanotubes Prepared by Chemical Vapor Deposition using Transmission Electron Microscopy, XXVI Annual Conference on Electron Microscopy and Applied Fields, Shimla, April 16-18, 2003, Malladi V. Pawan Kumar, Gouthama and D. Kunzru.
53. Spectrophotometric Determination of Phosphorus in Aqueous and Organic Phases obtained on Pyrolysis of Naphtha, Asian J. of Chem., 2, 930-931, 2003, D. Kunzru.
54. Effect of Molybdenum on V-Mg-O Catalysts During the Oxidative Dehydrogenation of Propane, CHEMCON-2003, Bhubaneswar, Dec. 19-22, 2003, D. Kunzru.
55. Oxidative Dehydrogenation of Propane on V_2O_5 - ZrO_2 Catalysts, Catalyst Letters in press, Mahuya De and D. Kunzru.
56. Process Intensification in Rotating Packed Beds HIGEE: An Appraisal, I&EC research43, 1150-1162, 2004, Rao D. P., A. Bhowal, and P. S. Goswami.
57. Niobium oxide as support material for the oxidative dehydrogenation of propane, Catalysis Today, 78, 397-409, 2003, M. Cherian, M.S. Rao and G. Deo.
58. Arresting photodegradation of porous silicon by a polymer coating, Solid State Communications 129, 183, 2004, Mandal N. P., Sharma A. and Agarwal S. C.
59. Instability, morphology and dynamics of thin slipping films, Langmuir 20, 244, 2004, Kajari K., Sharma A. and Khanna R.
60. Many paths to dewetting of thin films: anatomy and physiology of surface instability, Euro. Phys. J. E 12, 397-408, 2003, Sharma A.
61. Instability and dynamics of thin slipping films, Applied Phys. Lett. 83, 3549-3551, 2003, Sharma A. and Kargupta K.
62. Surface instability of soft films with coupled tension-shear interactions, J. Applied Phys. 94, 6376-6385, 2003, Shenoy V. and Sharma A.
63. Self-destruction and dewetting of thin polymer films: the role of interfacial tensions, J. Phys. -Cond. Matter 15, 331-336, 2003, Reiter G., Khanna R. and Sharma A.
64. Thin liquid films on chemically heterogeneous substrates: self-organization, dynamics and patterns in systems displaying a secondary minimum, Physica A 318, 262-278, 2003, Sharma A., Konnur R. and Kargupta K.

65. Spontaneous surface roughening induced by surface interactions between two compressible elastic films, *Phys. Rev. E* 67, 031607, 2003, Sarkar J., Shenoy V. and Sharma A.
66. Mesopatterning of thin liquid films by templating on chemically patterned complex substrates, *Langmuir* 19, 5153-5163, 2003, Kargupta K. and Sharma A.
67. Instability of viscoelastic plane Couette flow past a deformable wall, *J. Non-Newtonian Fluid Mech*, 116, 371- 393, 2004, V. Shankar and S. Kumar.
68. Instability of the interface between thin fluid films subjected to electric fields, *J. Colloid Interface Sci*, In Press, 2004, V. Shankar and A. Sharma.
69. Stability of two-layer viscoelastic plane Couette flow past a deformable solid layer, *J. Non-Newtonian Fluid Mech*, In Press, 2004, V. Shankar.
70. Removal of Aniline from Aqueous Solution in a Mixed Flow Reactor using Emulsion Liquid Membrane, *J. Membr.Sci.* 226, 185-201, 2003, Datta, S., P. K. Bhattacharya and N. Verma.
71. SO₂ Breakthrough Analysis during Adsorption over Zeolites, *Chem. Engg. Process.* 43, 9-22, 2004, Gupta, A., Gaur, V. and Verma, N.
72. SO₂ Breakthrough and Sulfate Conversion Analysis during Sorption by Ca-based Sorbents, *Can. J. Chem. Eng.* 811, 53-62, 2003, Dasgupta, K., Rai, K.N. and N. Verma.
73. Counter current multi-stage fluidized bed column for removal of dissolved anions from waste water, *IICHE Proceedings*, 15-19 December 2003, Bhubaneswar, Kishore, K., A. Verma, A. Agrawal, and N. Verma.
74. Computational fluid dynamics analysis of heat transfer in a packed bed, *IICHE Proceedings*, 15-19 December 2003, Bhubaneswar, Maheshwari, A., and N. Verma.
75. Synthesis and Characterization of Activated Carbon Fiber for the Removal of SO₂, NO_x, and CO₂, *AICHE Proceedings*, 21-25 November 2003, San Francisco, US. Gaur, V., R. Ashthana, and N. Verma.

DEPARTMENT OF CHEMISTRY

1. Conformationally induced vibronic transitions in S₀←S₁ spectra of n-propylbenzene, *J. Chem. Phys.* 119, 2003, 9486-9490, S. S. Panja and T. Chakraborty.

2. Discrimination of Rotational Isomers of 2-Phenylethanol by Dispersed Fluorescence Spectroscopy in Supersonic Jet, *J. Phys Chem A* 107, 2003, 10984-10987, S. S. Panja and T. Chakraborty.
3. Conformations of indan and 2-indanol: A combined study by UV laser spectroscopy and quantum chemistry calculation, *J. Chem. Phys.* 119, 2003, 2523-2530, A. Das, K. K. Mahato, S. S. Panja and T. Chakraborty.
4. Structure and electronic spectroscopy of naphthalene-acenaphthene van der Waals dimer: Hole-burning, dispersed fluorescence, and quantum chemistry calculations, *J. Chem. Phys.* 118, 2003, 9589-9595, A. Das, C. K. Nandi and T. Chakraborty.
5. Conformational Stability of Allylbenzene: A combined study by dispersed fluorescence spectroscopy and quantum chemistry calculation, *J. Chem. Phys.* 118, 2003, 6200-6204, S. S. Panja and T. Chakraborty.
6. Photochemistry in Supersonic jet-cooled molecular clusters, *ISRAPS Bulletin*, 13, 2003, 28-32, T. Chakraborty.
7. Dynamical behavior of anion-water and water-water hydrogen bonds in aqueous electrolyte solutions: A molecular dynamics study, *J. Phys. Chem. B*, 2003, 107, 3899-3906, A. Chandra.
8. Hydration structure and diffusion of ions in supercooled water: Ion size effects, *J. Chem. Phys.* 118, 2003, 9719-9725, S. Chowdhuri and A. Chandra.
9. Structure and dynamics of hydrogen bonds in liquid water and aqueous solutions, *Proc. Ind. Nat. Sci. Acad. A*, Invited article, 69, 2003, 49-59, A. Chandra.
10. Dynamics of water molecules at liquid-vapour interfaces of aqueous ionic solutions: Effects of ion concentration, *Chem. Phys. Lett.* 373, 2003, 87-93, S. Paul and A. Chandra.
11. Pressure effects on the tracer diffusion and orientational relaxation of hydrogen bonding solutes in ambient and supercooled water, *Chem. Phys. Lett.* 373, 2003, 79-86, S. Chowdhuri and A. Chandra.
12. A Temperature of maximum density in soft sticky dipole water, *Chem. Phys. Lett.* 376, 2003, 646-652, M. L. Tan, J.T. Fischer, A. Chandra, B.R. Brooks and T. Ichiye.
13. From ab initio quantum chemistry to molecular dynamics: The delicate case of hydrogen bonding in ammonia, *J. Chem. Phys.* 119, 2003, 5965-5980, A.D. Boese, A. Chandra, J.M.L. Martin and D. Marx.

14. Tracer diffusion of ionic and hydrophobic solutes in water-dimethyl sulfoxide mixtures: Effects of varying composition, *J. Chem. Phys.* 119, 2003, 4360-4366, S. Chowdhuri and A. Chandra.
15. Liquid-vapor interfaces of simple electrolyte solutions: Molecular dynamics results for ions in Stockmayer fluids, *J. Phys. Chem. B* 107, 2003, 12705, S. Paul and A. Chandra.
16. Hydrogen bond dynamics at air-water and metal-water interfaces, *Chem. Phys. Lett.* 386, 2004, 218-224, S. Paul and A. Chandra.
17. A Novel and Expeditious Approach to Unusual Spiro Lactam Building Blocks, *J. Org. Chem.*, 2003, 68, 4556, F. A. Khan, J. Dash.
18. Chemoselective reduction of aromatic nitro and azo compounds in ionic liquids using zinc and ammonium salts, *Tetrahedron Lett.* 2003, 44, 7783-7787, F. A. Khan, J. Dash, Ch. Sudheer and R. K. Gupta.
19. Truncated thioredoxin (Trx80) exerts unique mitogenic cytokine effects via a mechanism independent of thiol oxidoreductase activity, Klas Pekkari, Javier Avila-Cariño, Åsa Bengtsson, Annika Scheynius, Arne Holmgren, *FEBS Lett.* (2003), 539, 143-148, Ramanathan Gurunath.
20. 1-Bis(methoxy)-4-bis(methylthio)-3-buten-2-one: Useful Three Carbon Synthon for Five and Six Membered Heterocycles with Masked (or Unmasked) Aldehyde Functionality P. K. Mahata, U. K. Syam Kumar, V. Sriram, H. Junjappa *Tetrahedron*, 59, 2631, 2003, H Ila.
21. Heteroaromatic Annulation of 2-Methyl/2-Cyanomethyl Benzimidazole Dianions with α -Oxoketene Dithioacetals: A Highly Regio-Specific Synthetic Protocol for 1,2- and 2,3-Substituted / Annulated pyrido[1,2-a]benzimidazoles Kausik Panda, J. R. Suresh, H. Junjappa *J. Org. Chem.* 68, 3498, 2003, H Ila.
22. Reaction of α -Oxoketene-N,S-arylamino acetals with Vilsmeier Reagents : An Efficient Route to Highly Functionalized Quinolines and Their Benzo/Hetero- Fused Analogues. P. K. Mahata, C. Venkatesh, U. K. Syam Kumar, H. Junjappa *J. Org. Chem.* 68, 3966, 2003, H Ila.
23. Aza-Annulation of Tetrahydroisoquinoline Derived Enamines: Efficient and Convergent Routes to Novel Functionalized Benzo[a]quinolizin-4-ones and Pyrimido[6,1-a]isoquinoline Derivatives. S. Chakrabarti, Manish C. Srivastava, H. Junjappa *Synlett* 2369, 2003, H Ila.

24. Heteroannulation of 3-Bis(methylthio) acrolein with Aromatic Amines: A Convenient Highly Regioselective Synthesis of 2-(Methylthio)quinolines and their Benzo/Hetero Fused Analogs: A Modified Skraup Quinoline Synthesis. Kausik Panda, Iffat Siddiqui, H. Junjappa *Synlett* 449, 2004, H Ila.
25. Palladium Catalyzed Enantioselective Transformations L. F. Tietze, H. *Bell Chemical Review*, 2004, in press, H Ila.
26. α -Oxoketene Dithioacetal Mediated Heteroaromatic Annulation Protocol for Benzoheterocycles. An Efficient Regiocontrolled Synthesis of Highly Substituted and annulated Indazoles S. Peruncheralathan, T. A. Khan, H. Junjappa *Tetrahedron* 60, 3457, 2004, H Ila.
27. α -Oxoketene Dithioacetal Mediated Aromatic Annulation: Highly Efficient and Concise Synthetic Routes to Potentially Carcinogenic Polycyclic Aromatic Hydrocarbons S. Nandi, Kausik Panda, J. R. Suresh, H. Junjappa *Tetrahedron* 60, 3663, 2004, H Ila.
28. Domino Carbocationic Rearrangement of α -[Bis(methylthio) methylene]alkyl-2 (heteroaryl)cyclopropyl Ketones. S. Peruncheralathan, V. Sriram, H. Junjappa *Tetrahedron* 000, (2004) (accepted for publication), H Ila.
29. Magnetic disorder induced enhanced magnetoresistance $\text{La}_{0.5}\text{Sr}_{0.5}\text{Co}_{1-x}\text{Ru}_x\text{O}_3$, *Solid State communications*, 125, 103 (2003, S. Sundar Manoharan, R. K. Sahu, D. Elefant and C. M. Schneider.
30. Magnetic and electronic phase diagram of a ferromagnetic $\text{La}_{0.6}\text{Pb}_{0.4}\text{Mn}_{1-x}\text{Ru}_x\text{O}_3$, *Solid State Sci.*, 5, 549, (2003, Ranjan K. Sahu and S. Sundar Manoharan.
31. Magneto resistance in sonochemically prepared Nano $\text{Co}_{100-x}\text{Cr}_x$ alloys ($0 \leq X \leq 40$), *Solid State Sci.* 5, 821, (2003, Manju Lata Rao and S. Sundar Manoharan.
32. Magnetism and Magneto transport studies in sonochemically prepared amorphous $\text{Co}_{100-x}\text{Pt}_x$ nano alloys, *Solid State Commun.* 129, 781, 2004, Manju Lata Rao, S. Sundar Manoharan.
33. Magnetism and magneto transport properties in sonochemically $\text{Co}_{100-x}\text{Pt}_x$ nano alloys, *J. Nano Science and Nanotechnology*, In Print, Manju Lata Rao, S. Sundar Manoharan, D. Elefant and C. M. Schneider.

34. Sonochemical synthesis of Nano materials, Review chapter in Encyclopedia of Nano Science and Nano Technology, H. S. Nalwa, Ed., American Scientific Publishers, 2004. In print, S. Sundar Manoharan and Manju Lata Rao.
35. Plasmid relaxation induced by copper metalated diglycine conjugates under heterogeneous reaction conditions. *Bioorg. Med. Chem. Lett.* 2003, 13, 923-926, Madhavaiah, C., and Verma, S.
36. Reusable photonucleases: Plasmid scission by uranyl ion impregnated homopolymer in the presence of visible light and sunlight, *Chem. Commun.* 2003, 800-801, Madhavaiah, C., and Verma, S.
37. Heterogeneously active nucleolytic reagents: Flexible design of reusable catalysts for nucleic acid scission, *Catal. Commun.* 2003, 4, 237-241, Madhavaiah, C., Srivatsan, S. G., and Verma, S.
38. DNA strand scission by a Cu(I) adenylated polymeric template: Preliminary mechanistic and recycling studies, *Bioorg. Med. Chem. Lett.* 2003, 13, 2501-2504, Verma, S., Srivatsan, S. G., Claussen, C. A., and Long, E. C.
39. Surface trapping and AFM detection of DNA topological intermediates generated from an oxidative chemical nuclease, *Biochem. Biophys. Res. Commun.* 2003, 308, 165-169, Mukhopadhyay, R. *, Srivatsan, S. G., Verma, S.
40. Adenine-copper coordination polymer as an oxidative nucleozyme: Implications for simple prebiotic catalytic units, *J. Inorg. Biochem.* 2003, 97, 340-344, Srivatsan, S. G., Parvez, M., Verma, S.
41. Metalated hybrid polymers as catalytic reagents for phosphate ester hydrolysis and plasmid modification, *Bioorg. Med. Chem. Lett.* 2004, 14, 1559-1562, Chandrasekhar, V., Deria, P., Krishnan, V., Athimoolam, A., Singh, S., Madhavaiah, C., Srivatsan, S. G., Verma, S.
42. Self-aggregation of reverse bis peptide conjugate derived from the unstructured region of the prion protein, *Chem. Commun.* 2004, 638-639, Madhavaiah, C. and Verma, S.
43. Bioinspired grafting of polystyryl matrix: Single-step evolution to a moderately conducting polymer, *Chem. Lett.* 2004 (under revision), Saxena, A., Srivatsan, S. G., Saxena, V., Verma, S.

44. ATCUN-like metal binding motifs in proteins: Identification and characterization by crystal structure and sequence analysis, *Proteins: Structure, Function, and Bioinformatics*, 2004, submitted Sankararamakrishnan, R., Verma, S., Kumar, S.
45. Redox reaction between $[\text{Bu}_4\text{N}]_2[\text{Mo}^{\text{VI}}\text{O}_2(\text{mnt})_2]$ and thiophenol in relevance to the autoreduction in the crystallization process of oxidized form of sulfite oxidase, Pradeep K. Chaudhury, Kowliki Nagarajan, Anil Kumar, Rabindranath Maiti^c, Samar K. Das & Sabyasachi Sarkar, *Indian Journal of Chemistry*, Vol. 42A, Sept. 2003, pp. 2223-2227, S. Sarkar.
46. Maiti Ravindranath, Nagarajan Kowliki, Sarkar Sabyasachi, 2003, Synthesis and structure of $[\text{L}][\text{MoIVO}(\text{mnt})_2]$ {L = $[(\text{C}_2\text{H}_5)_4]^+$, $[\text{C}_5\text{H}_5\text{NH}]^+$, $[(\text{C}_2\text{H}_5)_3\text{NH}]^+$, $[\text{lysiniun}]^{2+}$, and $(\text{mnt}^{2-} + 1,2\text{-dicyanoethylenedithiolate)}$ } in relevance to molybdenum cofactor of diverse class of molybdoenzymes, *J. Mol. Structure*, 656, 169-176, S. Sarkar.
47. A Model synthetic Approach towards the Furanacetal Component of Azadirachtin: A Potent Insect Antifeedant, *Arkivoc* 2003, VI, 16, Invited article in honor of Dr. Sukh Dev's 80th birthday, S. Raina, B.A. Bhanu Prasad, and V.K. Singh.
48. A Ring Closing Metathesis Approach towards Synthesis of (+)-Diplodialide A, *J. Org. Chem.* 2003, 68, 3356, R. Vijaya Anand, S. Baktharaman, and V. K. Singh.
49. Total Synthesis of (+)-Boronolide, (+)-Deacetylboronolide, and (+)-Dideacetylboronolide, Musti Chandrasekhar, Kusum Lata Chandra, and V. K. Singh *J. Org. Chem.* 2003, 68, 4039.
50. Enantioselective phenylacetylene addition to aldehydes induced by Cinchona alkaloids, *Tetrahedron Lett.* 2003, 44, 5347, Rajesh M. Kamble and Vinod K. Singh.
51. Do aziridines require Lewis acids for cleavage with ionic nucleophiles? *Tetrahedron Lett.* 2003, 44, 5839, Alakesh Bisai, Ghanshyam pandey, Manoj K. Pandey and Vinod K. Singh.
52. Mercuric Triflate Catalyzed Hydroxylative Carbocyclization of 1,6-Enynes, *Org. Letts.* 2003, 5, 1609-1611, M. Nishizawa, Veejendra K. Yadav, M. Skwarczynski, H. Takao, H. Imagawa, T. Sugihara.
53. Efficient Solution Phase Combinatorial Access to a Library of Pyrazole- and Triazole-Containing Ligands, *Chem.* 2003, 5, 375-378, R. Touzani, S. Garbacia, O. Lavastre, Veejendra K. Yadav, B. Carboni *J. Combinat.*

54. Bicyclo[2.1.1]hexan-2-one as a New Probe for the Study of α -Facial Selectivity in Nucleophilic Additions, A comment Tetrahedron Lett 2003, 44, 6617-6619, Veejendra K. Yadav, K. Ganesh Babu, Rengarajan Balamurugan.
55. AcCl-EtOH Brings About a Remarkably Efficient Conversion of Allyl Acetates into Allyl Chlorides, Tetrahedron 2003, 59, 9111-9116, Veejendra K. Yadav, K. Ganesh Babu.
56. Diastereoselective Aldol Reactions of Enolates Generated from Vicinally Substituted Trimethylsilylmethyl Cyclopropyl Ketones, Org. Lett. 2003, 5, 4281-4284, Veejendra K. Yadav, Rengarajan Balamurugan.
57. Mercuric Triflate-(TMU)₃-Catalyzed Cyclization of α -Arylalkyne Leading to Dihydronaphthalenes, Org. Lett. 2003, 5, 4563-4565, Mugio Nishizawa, Hiroko Takao, Veejendra K. Yadav, Hiroshi Imagawa, Takumichi Sugihara.
58. Reactions on solid surface. A simple, economical and efficient acylation of alcohols and amines over alumina, J. Org. Chem. 2003, 68, 577-580, Veejendra K. Yadav, K. Ganesh Babu.
59. Formal [3+2] Addition of Acceptor-Substituted Cyclopropylmethylsilanes with Arylacetylenes, Veejendra K. Yadav, V. Sriramurthy, Angew Chem 2004 (in press).

DEPARTMENT OF CIVIL ENGINEERING

1. Modeling of Beams on a Geosynthetic- Reinforced Granular Fill-Soft System subjected to moving loads, Geosynthetic International, Maheshwari P., Chandra S. and Basudhar, P.K.
2. Analysis of Beams on Reinforced Granular Beds, Geosynthetic International, In Press, Maheshwari P., Chandra S. and Basudhar, P.K.
3. Generalized solution procedure for automated slope stability analysis using inclined slices, Geotechnical and Geological Engineering, An International Journal, Vol.21, Issue 3, 2003, Patra, C.R. and Basudhar, P.K.
4. Effect of Depth of placement of reinforcement on settlement response of reinforced beds, Accepted for presentation and publication in the proceeding of National Symposium on Advances in Geotechnical Engg., NSAGE-2004, IISc., Bangalore, July, 2004, Maheshwari P., Basudhar, P.K. and Chandra S.
5. Monitoring Slope Movements and Early Warning systems, Proceedings of one day International Seminar on Disaster Mitigation in Nepal, Kathmandu, pp.1-7, organized by Nepal Engg. College, Ehjnu University, Japan, Nov. 2003, Basudhar, P.K. and Chandra S.

6. Behavior of Steel Plate-Concrete Interface in tension, Bridge and Structural Engg., ING-IABSE, Vol.34, No.1, March 2004, Chakrabarti, S.K., Chaturvedi, P.K. and Basu, P.C.
7. Behavior of Embedded Steel Plates in Reinforced Concrete : New Design Basis, Proc. of the 2003 American Society of Mechanical Engineers, Pressure Vessels & Piping Conference, Cleveland, Ohio, USA, July 2003, Chakrabarti, S.K.
8. Effect of Orientation of Reinforcement on Strength of Reinforced Soil, Proc. Indian Geotechnical Conference, IGC-2003, Roorkee, Dec.2003, Chandra, S., Singh D.K., Maheshwari, P. and Das S.K.
9. An Experimental Study on Reinforced Flyash, Proc. 19th International Conference on Solid Waste Technology and Management, March 2004, Philadelphia, USA, Chandra S., Ranjan, S.C.
10. On pavement roughness indices, Journal of Civil Engineering, Institution of Engineers India, Vol. 84, May, 2003, pp.33-37.
11. Manish, K., Maheshwari, N. and Das, A. Backcalculation of pavement layer moduli from FWD data using Genetic Algorithm, International Journal of Pavement Engineering & Asphalt Technology, Volume 4 2, pp. 32-43, 2003, Awasthi, G., Singh, T., and Das, A.
12. Perpetual pavements, Proceedings of National Conference on Modern Cement Concrete and Bituminous Roads, GITAM, Visakhapatnam, 18-20th December, 2003, Vol.II, pp.35-39, Das, A.
13. Mode acceleration approach for generation of floor spectra including soil-structure interaction, ISET Journal of Earthquake Technology, Vol. 40, 2003, No. 2-4, Ray Chaudhuri, S. and Gupta, V.K.
14. Explaining the Internal Behavior of Artificial Neural Network River Flow Models, Hydrol. Processes, 1184, 2004, 833-844, Sudheer, K.P. and Jain, A.
15. Identification of Physical Processes inherent in Artificial Neural Network Rainfall Runoff Models?, Hydrol. Processes, 118 3, 2004, 571-581, Jain, A., Sudheer, K.P., and Srinivasulu, S.
16. Comparative Analysis of Event based Rainfall-Runoff Modeling Techniques-Deterministic, Statistical, and Artificial Neural Networks, ASCE J. Hydrol. Engg., 8 2, 2003, 93-98, Jain, A., and Indurthy, S.K.V.P.

17. Comparative Analysis of Training Algorithms for ANN Rainfall-Runoff Models, Proc. IICAI2003: First Indian Intl. Conf. on Artificial Intelligence, December 18-20, 2003, Hyderabad, India, Srinivasulu, S. and Jain, A.
18. Estimation of Unknown Flow and Transport Parameters in Groundwater using Artificial Neural Networks, Proc. WE2003: Intl. Conf. on Water and Environment, December 15-18, 2003, India, Singh, R.M., Datta, B., and Jain, A.
19. Calibration of Infiltration Parameters using Artificial Neural networks, Proc. IICAI2003: First Indian Intl. Conf. on Artificial Intelligence, December 18-20, 2003, Hyderabad, India, Jain, A. and Kumar.
20. Systems Theoretic Approach to Modeling Rainfall-Runoff Process with Conceptual Component, Proc. River Basin Management 2003: Second Intl Conf. on River Basin Mgmt., 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Srinivasulu, S. and Jain, A.
21. Optimal Unit Hydrograph using Genetic Algorithm, Proc. River Basin Management 2003: Second Intl Conf. on River Basin Mgmt., 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Srinivasulu, S. and Jain, A.
22. Guest Edited a Special Issue on Earthquake Engineering: Some Recent Trends, The Indian Concrete Journal, Vol. 77, No. 11, November 2003, Jain, S.K.
23. Effectiveness of Reinforcement Details in Exterior Reinforced Concrete Beam-Column Joints for Earthquake Resistance, ACI Structural Journal, Vol 100, No. 2, March-April 2003, pp. 149-156, Murty C V R, Rai D C, Bajpai K K, Jain S. K.
24. Dynamics of a Class of Horizontal Setback Buildings, Journal of Engineering Mechanics, ASCE, Vol. 129, No. 9, September 2003, pp. 1092-1103, Jain S. K and Jain C. K.
25. Some Innovative Education and Outreach Projects in India for Earthquake Risk Reduction, Seismological Research Letters, Vol. 74, No. 5, September / October 2003, pp. 545 – 551, Jain S K and Murty C. V. R.
26. Earthquake Risk Reduction: Status Report for India, Proceedings of the Workshop on Seismic Risk Management for Countries of the Asia Pacific Region, Bangkok, December 2003, World Seismic Safety Initiative, Jain S. K.
27. Some Capacity Building Initiatives in India on Earthquake Risk Reduction, Proceedings of the World Congress on Natural Disaster Mitigation, New Delhi,

- February, World Federation of Engineering Organisations, Vol. 1, February 2004, pp. 217-222, Jain S. K. and Murty C. V. R.
28. Introducing Earthquake Engineering in Civil Engineering Curriculum, The Indian Concrete Journal, Vol 78, No. 2, February 2004, pp. 110-116, Murty CVR, Rai DC, Gupta A, Jain S.K.
 29. Some Thoughts on School Seismic Safety Programmes in Developing Countries Proceedings of the Ad Hoc Experts' Group Meeting on Earthquake Safety in Schools, Paris, France, February 2004, pp. 114-119, Jain S. K.
 30. Analysis of Data from Structural Response Recorders in North and North East Indian Earthquakes,, Transactions of the 17th International Conference on Structural Mechanics in Reactor Technology SMIRT 17, Prague, Czeck Republic, August 2003, Paper no K03-3, Roshan A D, Jain S K and Basu P C.
 31. Postbukling Reponse of Square laminates with a Central Square/Elliptical Cutout, Composite Structures, Vol 65, 2004, 179-185, Payal Jain and Ashwini Kumar.
 32. Semi-automatic Multi-Level Approach for Extraction of Tidal Channels from Aerial Photographs and Hyperspectral Data, Proc. of Map India 2004, 28-30 January 2004, New Delhi, Lohani, B., Mason, D.C., Bist, H.S.,.
 33. Development of a Simulator for Airborne Altimetric LiDAR, Proc. of Map India 2004, 28-30, January, New Delhi, Agrawal, N., Agrawal, N., Lohani, B.,
 34. Airborne Altimetric LiDAR-Where does India stand?, [GIS@development](#), 75, May 2003, Lohani, B., and Flood, M.
 35. Spatial Information Policy in India, GIM-International, 176, June 2003, Spikes, J., and Lohani, B.
 36. Active faults and related Late Quaternary deformation along the northwestern Himalayan Frontal Zone, India. Annals of Geophysics. 465, 2003, 917-936, Malik, J. N., and Nakata, T.
 37. Preliminary observations from trench near Chandigarh, NW Himalaya and their bearing on active faulting. Current Science. 8512, 2003, 1793-1799, Malik, J. N., Nakata, T., Philip, G., and Viridi, N. S.
 38. Towards a Model Code for Concrete Structures in Asia – Role of the ICCMC, Seisan Kenkyu Journal of the Institute of the Industrial Science, University of Tokyo, Volume 55, No. 2, 2003, pp 75-79, Misra, S.

39. Behavior of repaired RC beams under cyclic loading, *Seisan Kenkyu Journal of the Institute of the Industrial Science, University of Tokyo*, Volume 55, No. 4, pp 45-48, 2003, Misra, S., Sooriyaarachchi, H.P., Nishimura, T., and Uomoto, T.
40. Parameters affecting steel anchorages under shear, *Proc. of the 25th Annual Meeting of the Japan Concrete Institute*, July 2003, Bishnoi, S., Singh, A. and Misra, S.
41. Nondestructive evaluation of concrete structures, – A case study in detailed inspection using 24-year-old reinforced concrete –, *Proc., Intl Symp. on Non-destructive Testing in Civil Engineering NDT-CE*, Berlin, September 2003, Watanabe, S. Misra, S. and Uomoto, T.
42. A case report on quality control in concrete construction, *Proc. of the 2nd Intl Symp. on New Technologies for Urban Safety*, Intl Center for Urban Safety, Institute of Industrial Science, Univ. of Tokyo, Japan, Oct 2003, Misra, S. and Krishnamurthy, P.
43. Maintenance of concrete structures – Recent efforts in Japan, *Proc., 9th East Asia Structural Engineering Conference*, Bali, Indonesia, Dec 2003, Uomoto, T. and Misra, S.
44. Provisions relating to concrete durability in Indian and some other specifications, *Proc. of the National Seminar on Advances in Building Construction and Rehabilitation Technology*, Organized by the Institute Works Department, IIT Kanpur, March 2nd – 4th, 2004, Misra, S.
45. Numerical Solution of Boussinesq Equations to Simulate Dam-Break Flows, *Jl. of Hydraulic Engineering, ASCE*, Vol 130, No. 2, 2004, 156-159, Mohapatra, P. K. and Chaudhry, M. H.
46. Flow analysis in stenosed arteries by using transfer matrix method, *International Conference on Biological Mathematics*, Feb 19 – 21, 2004, IIT Kanpur, Mohapatra, P. K., Chaudhry, M. H., Kassem, A. A. and Moloo, J.
47. Mathematical Modeling of Dam-Break Flow on a Mobile Bed, Paper ID: 54-NUM-M153, *2nd International Conference on Scouring and Erosion ICSE-2*, Nanyang Technological University Singapore, November 14-17, 2004, Mohapatra, P. K.
48. Effectiveness of Reinforcement Details in Exterior RC Beam-Column Joints for Earthquake Resistance, *ACI Structural Journal*, Vol.100, No.2, pp 149-156, March 2003, Paper No. 100-S16, Murty, C.V.R., Rai, D.C., Bajpai, K.K., and Jain, S.K.

49. Improved Truss Model for Design of Welded Steel MRF Connections, Journal of Structural Engineering, American Society of Civil Engineers, Vol. 130, No.3, March 2004, pp 498-510, Arlekar,J.N., and Murty,C.V.R.
50. Seismic Shear Design of RC Bridge Piers: Part I – Review of Code Provisions, The Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.6, June 2003, pp 1127-1133, Goswami, R., and Murty,C.V.R.
51. Seismic Shear Design of Bridge Piers: Part II – Numerical Investigations of IRC Provisions, The Indian Concrete Journal, The ACC Limited, Thane Vol.77, No.7, July 2003, pp 1217-1224, Goswami,R., and Murty,C.V.R.
52. Seismic Shear Design of RC Structural Walls: Part I – Review of Code Provisions, Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.11, November 2003, pp 1423-1430, Dasgutpa,K., and Murty,C.V.R.
53. Seismic Shear Design of RC Structural Walls: Part II – Proposed Improvements in IS:13920 Provisions, Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.11, November 2003, pp 1459-1468, Dasgutpa, K., and Murty, C.V.R.
54. Introducing Earthquake Engineering in Civil Engineering Curriculum, Indian Concrete Journal, The ACC Limited, Thane, Vol.78, No.2, February 2004, pp 110-116, Murty, C.V.R., Rai, D.C., Gupta, A., and Jain, S.K.
55. Seismic Strengthening of Gravity Load Designed RC Frame Buildings, Proceedings of the Fourth International Conference on Seismology and Earthquake Engineering, 12-14 May 2003, Tehran, Islamic Republic of Iran, CDROM Paper No.VR12, Mahashabde, A.V., Dasgupta, K., and Murty, C.V.R.
56. Capacity Design of Welded Steel MRF Connections, Proceedings of the Fourth International Conference on Behaviour of Steel Structures in Seismic Areas STESSA 2003, 9-12 June 2003, Naples, Italy, Arlekar, J.N., and Murty,C.V.R.
57. Quantitative Seismic Retrofitting of Open ground Storey RC Frame Buildings, Proceedings of the Workshop on Retrofitting of Structures, Roorkee, India, 10-11 October 2003, pp 186-196, Dasgupta, K., and Murty, C.V.R.
58. Seismic Design Provisions for Earthen Structures in Indian Seismic Code, Proceedings of National Workshop on Current Practices and Future Trends in Earthquake Geotechnical Engineering, 23-24 December 2003, IISc Bangalore, [civil.iisc.ernet.in / ~cpftege / proceedings .html](http://civil.iisc.ernet.in/~cpftege/proceedings.html), 15 December 2003, Murty, C.V.R.

59. Seismic Strengthening of Urban RC Multistorey Buildings: A Technological Challenge, Civil Engineering & Construction Review, New Delhi, October 2003, pp 50-59, Murty, C.V.R. and Dasgupta, K.
60. Challenges before construction Industry in India, Proceedings of the National Seminar on Advances in Building Construction and Rehabilitation Technology, 2-4 March 2004, IIT Kanpur, pp 1-22, Laskar, A., and Murty, C.V.R.
61. Uplift Capacity of Pile Groups in Sand, The Electronic Journal of Geotechnical Engg., Vol.8, Bundle B, 2003, Patra, N.R. and Pise, P.J.
62. Pullout Capacity of Anchor Piles, IGC-2003, Geotechnical Engg. For Infrastructural Development, Dec., pp.141-144, Patra, N.R., Deogratias, M. and James, M.
63. Data Requirements for Geomorphological Studies of Rivers and their Significance, Jour. of Applied Hydrology, v. XVI 2, 2003, 18-42, Jain V. & Sinha, R.
64. Geomorphological controls on hydrological response and its significance in flood management: a case study from a 5th order Himalayan river system. Water Resources Management, v.17, 2003, 355-375, Jain V. & Sinha, R.
65. Geomorphological manifestations of the flood hazard: a remote sensing based approach. Geocarto International, V.18 4, 2003, 51-60, Jain V. & Sinha, R.
66. Evaluation of geomorphic control on flood hazard through GIUH. Current Science, v. 85 11, 2003, 1596-1600, Jain V. & Sinha, R.
67. Fluvial dynamics of an anabranching river system in Himalayan foreland basin, north Bihar plains, India, Geomorphology, 60/1-2, 2004, 147-170, Jain V. & Sinha, R.
68. Evaporite mineralogy and geochemical evolution of the Sambhar Salt Lake, Thar Desert, Rajasthan, India. Sedimentary Geology, 166, 2004, 59-71, Sinha, R. & B.C. Raymahashay.
69. The arsenic cycle in late Quaternary fluvial sediments mineralogical considerations, Current Science, Vol.84, pp.1102-1104, Raymahashay, B.C. and A.S. Khare.
70. Geochemical techniques for evaluation of groundwater quality, Indo-French Seminar on Emerging Trends for Water and Wastewater Management, New Delhi 9-12, 2004, Abstract Vol.. pp. 149-151, Raymahashay, B.C.

71. Aquifer response to linearly varying Stream Stage, Journal of Hydraulic Engg., ASCE, 86, 2003, 361-64, Srivastava, R.
72. Reactive solute transport in macroscopically homogeneous porous media: analytical solutions for the temporal moments, Journal of Contaminant Hydrology, 69112, 2004, 27-43, Srivastava, R., Sharma, P.K. and Brosseau, M.L.
73. Air Quality Monitoring Network Design using Information Theory, International Journal of Environmental Systems, accepted for publication, 2004, Jain Vineet and Sharma Mukesh.
74. Process improvements in Khandsari (cottage sugar industry) India. International Sugar Journal, February 2004. Agarwal Avinash, Sharma Mukesh and Tewari L. P.
75. Investigations into Formation of Atmospheric Sulfate under High PM10 Concentration, Atmospheric Environment, 37, 2003, 2005-2017, Sharma M., Kiran YNVM and Shandilya, K.
76. Design of a Website for Dissemination of Air Quality Index. Journal of Environmental Software and Modeling, 18, 2003, 405-411, Sharma M, Maheshwari M., Sengupta B., and Shukla B.P.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Distributed Algorithms for Finding and maintaining a k-Tree Core in a Dynamic Network, Information Processing Letters, Vol 88, No. 4., pp 187-194, R.K Ghosh and Saurabh Srivastava.
2. Modeling fault coverage of random test patterns, Journal of Electronic Testing: Theory and Applications, Vol 19, No. 3, pp 271-284, S K Mehta, S Seth, H. Cui.
3. Local Nature of Brooks, Colouring for degree 3 Graphs, Graph and Combinatorics, 19, 2003, 551 - 565, DOI: 10.1007/s00373-002-0520-x, G. Sajith and Sanjeev Saxena.
4. Fast Parallel Edge Colouring of Graphs J. Parallel and Distributed Computing, 63, 2003, 775-785, DOI: 10.1016/S0743-73150300115-1, Sajith G. and S. Saxena.
5. A Framework to Generate Code Optimizers automatically, International Conference CST 2003, Mexico, May 2003, 71-76, Karuri K, Sanjeev K Aggarwal.
6. Optimized Code Generation for Adaptive Irregular Problems, High Performance Computing in Science and Engineering, Moscow, June 2003, Vyas, Ashutosh, Sanjeev K Aggarwal.

7. Test Coverage Analysis: A Method for Generic Reporting, Seventh Conference on Software Engineering and Applications LosAngeles, Nov2003 Khan G M, Sanjeev K Aggarwal.
8. A Technique for Extracting Grammar from Legacy Programs" 22nd International Conference on Applied Informatics 2004 SE 2004 Innsbruck, Austria, Feb 2004, Biswas Shiladitya, Sanjeev K Aggarwal.
9. Primality and Identity Testing via Chinese Remaindering Journal of the ACM, Vol.50, No.4, pp.429 – 443, July 2003, Manindra Agrawal and Somenath Biswas.
10. A Hybrid Approach To Model Workflow In Business Process, CIT 2003, December 2003, K Ghosh, S. Patnaik and H. Mohanty.
11. Location Management by Movement Prediction Using Mobility Patterns and Regional Route Maps, IWDC 2003, December 2003, R.K Ghosh, S. Royanchu and H. Mohanty.
12. A Routing Algorithm for Multi-Hop Mobile Ad Hoc Network Using Additively Weighted Delaunay Triangulation, CIT , December 2003, R.K Ghosh, G. Gupta and S. V. Rao.
13. Chit Htay Lwin and H. Mohanty, A Survey on Event Notification Service System, CIT, December 2003, R.K Ghosh.
14. Mobichart For Modeling Mobile Computing Tasks, IEEE TENCON 2003, October 2003, R.K Ghosh, H. Mohanty, S. Acharya and R. K. Shyamsunder.
15. Trends in Mobile Commerce, In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.
16. Data Management, Transaction Models and Enabling Technology for Mobile Commerce, In Mobile Commerce, Allied Publishers, December 2003, R.K Ghosh, H. Mohanty, S. Sonti.
17. Ensuring Atomic Uses of E-Tickets by Mobile Users: A Security Mechanism in Mobile Commerce, In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.
18. Smart Card Based Protocol for Secure Access of Mobile Host in IPv6 Foreign N/W, In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.

19. Web Ticker: An Adaptable, News-based Information Retrieval Tool for WEB Navigator, IEEE TENCON 2003, October 2003, R.K Ghosh, G. Das, H. Mohanty and S. Gurumurthy.
20. Two Distributed Algorithms for E-Ticket Validation Protocols for Mobile Clients' in Proceedings of 2003 IEEE CEC'03, pp 223-230, June 2003, R.K Ghosh, T. Suman Reddy, Hrushiksha Mohanty and Sanjay Madria.
21. A Server Side Caching Scheme for CORBA, Proc. 24th International Conference on Distributed Computing Systems ICDCS, Tokyo, Japan, March 2004, Kumar A., P. Jalote, and D. Gupta.
22. Simplifying CORBA security service to support service level access control. Workshop on Metadata for Security WMS, OTM 2003, Catania, Sicily, Italy, LNCS-2889, November 3-7, 2003, Kumar A., P. Jalote, and D. Gupta.
23. Stochastic Image Compression using Fractals Co-authors: A.Kapoor, K.Arora and G.P. Kapoor, International Conference on Information Technology Coding and Computing ITCC 2003, April 28-30, 2003, Las Vegas, USA, Ajai Jain.
24. AnglaHindi: An English to Hindi Machine Translation System, IX Summit on Machine Translation, New Orleans, USA, Sep. 23-27, 2003, Ajai Jain.
25. Nonparametric classifier for unsegmented text, IS\&T/SPIE 16th Annual Symposium on Electronic Imaging, San Jose, January 2004, S K Mehta, G Nagy, S Seth, M Krishnamoorthy, Y Lin, D Lopresti.
26. A New Algorithm for Universal Groebner Basis for Toric Ideals, 6th International Conference of the Association of Asia Pacific Operational Research Societies, New Delhi, December 2003, S K Mehta.
27. Indirect symbolic correlation approach to unsegmented text recognition, Workshop on document analysis and information retrieval, Madison, June 2003, S K Mehta, G Nagy, S Seth, Y Lin.
28. Artificial ontogenesis of controllers for robotic behavior using VLG GA IEEE International Conference on Systems, Man and Cybernetics, Washington DC, p. 3376-3383, Oct 5-8, 2003, Abhishek V, Mukerjee A, and Karnick H.
29. Universal Networking Language - A Tool for Language-Independent Semantics Proceedings Convergences 03, International Conference on the Convergence of Knowledge, Culture, Language and Information Tech, Library of Alexandria,

- Dec2003, Alexandria, Egypt, Amitabha Mukerjee, Achla M Raina, Kumar Kapil, Pankaj Goyal, and Pushpraj Shukla.
30. A surveillance system with human action recognition, Seventh International Conference on Pattern Recognition and Information Processing PRIP 2003, May 21-23, 2003, Minsk, Belarus, Abhinav Gupta and Amitabha Mukerjee and Prahari.
 31. Applying real coded genetic algorithms to Gabor filter bank design for supervised texture classification and segmentation, Seventh International Conference on Pattern Recognition and Information Processing PRIP 2003, May 21-23, 2003, Minsk, Belarus, Prithwijit Guha and Amitabha Mukerjee.
 32. BRICS: An Indian Experiment, In Educational Robotics International Conference on Engineering in Education, ICEE, Valencia Spain July 2003, Amitabha Mukerjee, Nikhil Sinha, Sarala Verma.
 33. Development of An Intelligent Statically Stable Humanoid Robot Proceedings, National Conference Advance Manufacturing and Robotics, NCAMR04, 10th & 11th January 2004 CMERI Durgapur, V. Abhishek, Prasas Kulkarni, Ashish Dutta and Amitabha Mukherjee.
 34. Novel Approaches To Vision And Motion Control For Robot Soccer, Proceedings, National Conference on Advance Manufacturing and Robotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Manu Chhabra, Anusheel Nahar, Amitabha Mukerjee and Apurva Mathad.
 35. Textured 3d Reconstruction of Prismatic Worlds And Extraction of Scene Information, Proceedings, National Conference on Advance Manufacturing and Robotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Manu Chhabra, Amitabha Mukherjee and Apurva Mathad.
 36. Build Robots Create Science BRiCS - Digital Learning Tools without a Computer International Seminar on Downsizing Technology for Rural Development ISDTRD Bhubaneswar, Oct 2003, Amitabha Mukerjee, Sarala Verma and Rituraj Singh,.
 37. Vision Based interfaces through virtual touch screen and mouse, CODIS Jan 2004, Calcutta, India, Shireesh Agrawal, Prithwijit Guha, Piyush Kumar Rai and Amitabha Mukerjee.
 38. Vision based Interfaces for Virtual Touch Screen and Mouse CODIS Jan 2004, JU, Calcutta, S. Aggarwal, P. Guha, P. Rai and A. Mukerjee,.

39. Interactive Shape Optimization for Aesthetics using Genetic Algorithms EDS-PLM User's Conference Pune, Maharashtra, 13-14 Nov 2003, Hemant Muley, Sarvana Kumar and Amitabha Mukerjee.
40. A Cost-effective Multiple Camera Vision System using Firewire Cameras and Software Synchronization, 10th International Conference on High Performance Computing HiPC 2003 Dec. 17-20, 2003, Hyderabad, India, Piyush Rai, Kamal Tiwari, Prithwjit Guha, Amitabha Mukerjee.
41. Semantic Role tagging Using FrameNet, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, p. 51-54, Ankit Anand, Gaurav Pandey, Amitabha Mukerjee, and Achla M Raina.
42. Multilingual Question Answering, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, p. 99-102, Pushparaj Shukla, Pankaj Goyal, Kumar Kapil, Amitabha Mukerjee, and Achla M Raina.
43. Pointing Gesture Detection. Indian International Conference on Artificial Intelligence IICAI, Hyderabad, Dec 18-20, 2003, Amit K. Mondal, Dipak K. Maji, Koushik Pal and Amitabha Mukerjee.
44. A Frame-Semantic Approach for Tagging Hindi and Bangla Sentences, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, Pankaj Goyal, Ankit Soni, Deepak Sharma, Amitabha Mukerjee and Achla M Raina.
45. A Bilingual Parser for Hindi, English and Code-Switching Structures, 10th Conference of the European Chapter of the Association for Computational Linguistics EACL03 April 12-17, 2003, Budapest, P Goyal, Manav R Mital, A Mukerjee, Achla M Raina, D Sharma, P Shukla, and K Vikram Saarthaka.
46. Robust Facial Expression Recognition using Spatially Localized Geometric Model, International Conference on Systemics, Cybernetics and Informatics ICSCI 2004, Hyderabad, India, Feb 2004. vol. 1, pp 124-129, Ashutosh Saxena, Ankit Anand and Amitabha Mukerjee.
47. Real-Time Robot Navigation With Optical Flow: Handling Undulating Motion and Noisy Computation, Proceedings, National Conference on Advance manufacturing and Robotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Adnan Bohori, K S Venkatesh, Vivek Kumar Singh, and Amitabha Mukherjee.
48. Turning 802.11 Inside Out, Second Workshop on Hot Topics in Networks HotNets-II, Cambridge, MA, USA, Nov 20-21 2003, Pravin Bhagwat, Bhaskaran Raman, and Dheeraj Sanghi.

49. Turning 802.11 Inside-Out 2nd Workshop on Hot Topics in Networks HotNets-II, Cambridge, MA, USA, November, 2003. Also published in ACM/SIGCOMM Computer Communication Review, Vol. 34, No. 1, pp. 33-38, January, 2004, P Bhagwat, B Raman, and D Sanghi.
50. On Reciprocal Altruism and its Application to Qo, In Proc. of 6th IFIP/IEEE Int'l Conf. on Management of Multimedia Networks and Services MMNS 2003, Belfast, UK, September, 2003, S.N. Kothari, V. Bhandari, and D.Sanghi.
51. Ulysses - A New Approach to Maintaining Connectivity In Proc. of Int'l Conf. on Information Technology ITPC 2003, Kathmandu, Nepal, May, 2003, M. R. Mital, K. Vikram, A. Gupta, and D. Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Unambiguous range extension by overlay reduction in staggered PRT Techniques Journal of Amorphous and Organic Technology, Vol. 20, May 2003, pp. 673-684, M. Sachidananda and D.S. Zrnic.
2. Jr. of Synthetic Metals, vol. 139, 2003, pp. 751-753, Satyendra Kumar, AK Biswas, VK Shukla, A. Awasthi, RS Anand & J. Narain.
3. Power Sector Development in India with CO₂ Emission Targets: Effects of Regional Grid Integration and the Role of Clean Technologies, International Journal of Energy Research, Vol. 27, 2003, pp. 671-685, A.K.Srivastava, Ram M.Shrestha, S.C.Srivastava, Rabin Shrestha, and Dharam Paul.
4. A Zonal Congestion Management Approach Using Real and Reactive Power Rescheduling, IEEE Trans. on Power Systems, Vol.19, No.1, Feb.2004, pp. 554-562, Ashwani Kumar, SC Srivastava and SN Singh.
5. Available Transfer Capability Assessment in a Competitive Electricity Market using Bifurcation Approach, Accepted for publication in the IEE Proceedings Part-C on 'Generation, Transmission and Distribution' Vol.151, Issue 02, March 2004, Ashwani Kumar, SC Srivastava and SN Singh.
6. On spatial consensus formation: Is the Sznajd model different from a voter model, Int. Journal of Modern Physics, Part C, 1410, 2003 <http://arxiv.org/abs/condmat/0306576>, Laxmidhar Behera and Frank Schweitzer.
7. Query based model learning and stable tracking of a robot arm using radial basis function network, Computers and Electrical Engineering 29 2003 553-573, Laxmidhar Behera.

8. Control schemes for equalization of capacitor voltages in neutral clamped shunt compensator, IEEE Trans. Power Delivery, Vol. 18, No. 2, pp. 538-544, 2003, M. K. Mishra, A. Joshi and A. Ghosh.
9. A novel placement strategy for FACTS controllers, IEEE Trans. Power Delivery, Vol. 18, No. 3, pp. 982-987, 2003, N. K. Sharma, A. Ghosh and R. K. Varma.
10. Torsional interaction studies on a power system compensated by SSSC and fixed capacitor, IEEE Trans. Power Delivery, Vol. 18, No. 3, pp. 988-993, 2003, G. N. Pillai, A. Ghosh and A. Joshi.
11. Load compensating DSTATCOM in weak ac systems, IEEE Trans. Power Delivery, Vol. 18, No. 4, pp. 1302-1309, 2003, A. Ghosh and G. Ledwich.
12. Design of a capacitor supported dynamic voltage restorer DVR for unbalanced and distorted loads, IEEE Trans. Power Delivery, Vol. 19, No. 1, pp. 405-413, 2004, A. Ghosh, A. K. Jindal and A. Joshi.
13. New parallel converter scheme for high power active power filters, To appear in the coming issue of IEE Proceedings, In Press, M. Basu, S. P. Das, and G. K. Dubey.
14. A Practical Approach to Teach Power System Transients into the Electrical Engineering Curriculum, International Journal of Electrical Engineering Education, UK, Vol. 40, No.2, April 2003, pp. 144-157, SN Singh.
15. Congestion Management in Dynamic Security Constrained Open Power Markets, International Journal of Computer and Electrical Engineering, Vol. 29, No. 5, July 2003, pp. 575-588, SN Singh and AK David.
16. Parallel Self-Organising Hierarchical Neural Network based Estimation of Degree of Voltage Insecurity, International Journal of Computer and Electrical Engineering, Vol. 29, No. 5, July 2003, pp. 589-602, L. Srivastava, SN Singh and J Sharma.
17. Fast Voltage Contingency Screening using Radial Basis Function Neural Network, IEEE Trans. on Power Systems, Vol. 18, No. 4, November 2003, pp. 1359-1366, T. Jain, L. Srivastava and SN Singh.
18. Technology Development for Power Distribution Automation, BEACON, IEEE Delhi Section Journal, Vol. 21, No. 1, P. 26, June 2002, Sachchidanand and R. P. Gupta.

19. The Radiation of Light from Laser Machined Taps on Optical Fibers, IETE Journal of Research, vol. 49, pp. 359-364, Nov.-Dec. 2003, Anjan K. Ghosh and Kopinesh Patil.
20. Numerical Simulation of primary cluster formation in silane plasmas, Jr. of Physics D: applied Physics, 362003, pp. 837-841, Nandini Gupta, WW Stoffels and G. Kroesen.
21. A new negative feedback based Poly-Silicon AMOLED pixel circuit with highly linear transfer characteristics,' proceedings, 10th International Display workshops, Fukuoka, 2003, B. Mazhari and Yogesh S. Chauhan.
22. Design of current programmed amorphous silicon AMOLED pixel circuit,' proceedings, 8th Asian Symposium on information display, Nanjing, China, 2004, B. Mazhari and Yogesh S. Chauhan.
23. Crosstalk in passive matrix OLED displays with single integrated organic FET ,' proceedings, 8th Asian Symposium on information display, Nanjing, China, 2004, B. Mazhari and M. Tewari.
24. A new approach to topology selection for cell level analog circuits,' proceedings, 17th International conference on VLSI design, Mumbai, 2004, S. Nagar and B. Mazhari.
25. A Fuzzy Logic Based Load Frequency Controller petitive Electricity Environment, Proc. Of the IEEE Power Engineering Society General Meeting 2003, Toronto Canada, 13-18 July, 2003, Barjeev Tyagi and S.C. Srivastava.
26. Zonal Congestion Management using Phase Angle Regulators, Proc. of the International Conference on 'Intelligent System Application to Power Systems ISAP2003', Lemnos, Greece, 1-5 August 2003, Ashwani Kumar, S.C. Srivastava and S.N. Singh.
27. Voltage Stability Based Contingency Ranking Considering Post-Contingency Var Requirement, Proc. of the IASTED International Conference on 'European Power & Energy Systems Euro-PES 2003, Marbella, Spain, 3-5 September 2003, M.K. Varma and S.C. Srivastava.
28. Automated Versus Conventional Distribution System, Proc. of the IASTED International Conference on 'European Power & Energy Systems Euro-PES 2003, Marbella, Spain, 3-5 September 2003, R.P. Gupta, Sachchidanand and S.C. Srivastava.

29. Impact of FACTS Controllers on System Loadability and Transmission System Available Transfer Capability, Accepted for presentation and publication in the Proc. of Int. Conference on 'Electric Supply Industry in Transition: Issues and Prospects for Asia' at Asian Institute of Technology, Thailand, 14-16 January 2004, N.Satish and S.C. Srivastava.
30. Optimal Control Strategy Using Pseudo-Decentralization for Coordination of Power System Stabilizer and FACTS in a Multi-machine System, Accepted for presentation and publication in the Proc. of Int. Conference on 'Electric Supply Industry in Transition: Issues and Prospects for Asia' at Asian Institute of Technology, Thailand, 14-16 January 2004, B. Kalyan Kumar, S.N. Singh and S.C. Srivastava.
31. Recurrent quantum Neural Networks – A New Approach to Cognitive Modeling, Int Conf Systemics, Cybernetics and Informatics, ICSCI-04, Feb, Hyderabad, Laxmidhar Behera and Indrani Kar.
32. Adaptive control of robot manipulators using Quantum neural networks, International Conference on Intelligent Signal Processing and Robotics, ISPR-04, Feb, Allahabad, Indrani Kar and Laxmidhar Behera.
33. A novel learning algorithm for feedforward networks using Lyapunov function approach, Proceedings Int. Conf. Int. Sensors and Inf. Processing, ICISIP-2004, Chennai, 277-282, Laxmidhar Behera, Swagat Kumar and Awhan Patnaik.
34. Stochastic filtering and and Speech Enhancement using a Recurrent Quantum Neural Network, Proceedings Int. Conf. Int. Sensors and Inf. Processing, ICISIP-2004, Chennai, 165-170, Laxmidhar Behera and Bharat Sundaram.
35. Macroscopic analysis of stochastic cellular automata, Proceedings, Int. Conf on information Technology, 2003, 267-274, Bhubaneswar, Laxmidhar Behera.
36. A Quantum Clustering algorithm for Visual motor coordination, Proceedings, ICAPR, 2003, Calcutta, Nimit Kumar and Laxmidhar Behera.
37. Approaches to fragment assembly for DNA sequencing, Proceedings, HiPC Workshop on Soft Computing, 2003, 116-131, Hyderabad, Debashis Dash, Rishi Dhingra and Laxmidhar Behera.
38. Speech enhancement using a recurrent quantum neural network, Proceedings, Indian International Conference on Artificial Intelligence, IICAI-2003, Hyderabad, India, Laxmidhar Behera, Bharat Sundaram and Gaurav Singhal.

39. Identification of non-linear dynamical systems using recurrent neural networks, TENCON, 2003, Bangalore, Laxmidhar Behera, Swagat Kumar and Subhas Das.
40. Operation and control of a DSTATCOM in the presence of non-integer harmonics, Proc. IEEE Asia-Pacific Region-10 Conference TENCON, pp. 43-47, Bangalore, October 2003, A. Ghosh, A. K. Jindal and A. Joshi.
41. Inverter control using output feedback for power compensating devices, Proc. IEEE Asia-Pacific Region-10 Conference TENCON, pp. 49-52, Bangalore, October 2003, A Ghosh, A. K. Jindal and A. Joshi.
42. The operation of dynamic voltage restorer DVR using output feedback control, Proc. 27th National Systems Conference NSC-2003, pp. 319-323, IIT Kharagpur, December 2003, A. Ghosh, A. K. Jindal and A. Joshi.
43. Predictive Iterative Decoding of Turbo Codes in Coloured Gaussian Noise, Proc. NCC'04, pp. 308-312, K. Vasudevanand BK Rai.
44. A Novel Soft-Switching Quasi-Resonant Inverter for Variable Power Factor Load, Conf. Proceeding of National Power Electronics Conference NPEC 2003, IIT Bombay, pp. 246-252, Oct. 2003, S. Behera, S. P. Das, and S. R. Doradla.
45. An Improved DVR with Optimum Series Voltage Injection for Minimum VA Requirement of UPQC, Conf. Proceedings of National Systems Conference NSC 2003, IIT Kharagpur, pp. 324-327, Dec. 2003, Y. Y. Kolhatkar and S. P. Das.
46. Feature Selection Techniques for Voltage Contingency Ranking using RBFN, Proceedings of Conference on Services through I.T. Enabled Systems SITES-2003 Gwalior, April 19-20, 2003, pp 175-180, T. Jain, L. Srivastava and S.N. Singh.
47. Voltage Security Assessment Unsupervised and Unsupervised Learning, Proceedings of All India Jamia Electrical Conference 2003, Jamia Millia Islamia, New Delhi, August 16-17, 2003, T. Jain, L. Srivastava and S.N. Singh.
48. Optimal Power Flow Control Using Generalized Unified Power Flow Controller, National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, pp. 89-97, JG Singh and SN Singh.
49. Future of FACTS Controllers in Restructured Power System, National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, pp. I-XI, SN Singh.
50. Fast Voltage Estimation Using Parallel Radial Basis Function Neural Network, International Conference on Electric Supply Industry in Transition: Issues and

- Prospect for Asia, during 14-16 January 2004, AIT Bangkok, pp. 8-10:8-18, T Jain, L Srivastava and SN Singh.
51. Simulink Based d-q Axis Model of Unified Power Flow Controller, National Conference on Control, Communication and Information Systems CCIS2004, Goa, January 23-24, 2004, S.K Srivastava, K. G. Upadhyay, S. Khalid and S.N. Singh.
 52. Extraction of the Capacitance of Ultrathin High-K Gate Dielectrics, IEEE Trans. Electron Devices 50, pp. 2112-2119, 2003, S. Kar.
 53. Experimental Values of a Quantization Index of the Accumulation Layers of Different High-K Gate Dielectrics, in Physics and Technology of High-K Gate Dielectrics - II, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors, PV 2003-22, The Electrochemical Society Proceedings Series, Pennington, NJ 2003, pp. 143-151. Also presented at the Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues, Orlando, Florida, 12-16 Oct 2003, T. Kachru, R. Singh, M. Bhagat, and S. Kar.
 54. Extraction of the High-K Gate Dielectric Parameters from the Capacitance Data, in Physics and Technology of High-K Gate Dielectrics - II, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors, PV 2003-22, The Electrochemical Society Proceedings Series, Pennington, NJ 2003, pp. 373-384. Also presented at the Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues, Orlando, Florida, 12-16 Oct 2003, S. Kar.
 55. Extraction of Parameters of High-K Gate Dielectrics, in Physics of Semiconductor Devices, K. N. Bhat and A. DasGupta, Editors, IWPSD-2003, pp. 414-419, Narosa Publishing House, New Delhi 2003. Also presented at the Twelfth International Workshop on the Physics of Semiconductor Devices, Chennai, 16-20 Dec 2003, S. Kar.
 56. Propagation measurements and characterization for wireless LAN applications, National Symposium on advances in microwaves and lightwires, Oct. 2003, New Delhi, pp.41 – 44, A.R. Harish and T. Mittal.
 57. Neural network based yield prediction of microwave filters, Asia-Pacific Conference on Applied Electromagnetics APACE, Kuala Lumpur, Malaysia, Aug 2003, A.R. Harish.
 58. Compact tapered slot antenna, Proceedings of International radar symposium India 2003, Bangalore, India, 02-05 Dec 2003, A.R. Harish and M. Sachidananda.

59. Effect of Multiple Transmitters on the Power Distribution in Indoor Optical Wireless Systems, Proceedings of the Tenth National Conference on Communications NCC-2004, Jan 30-Feb 1,2004, Indian Institute of Science, Bangalore, pp.572-576, A. Sivabalan, Joseph John,.
60. Experimental Realization of DPPM for Power Efficient Optical Wireless Systems, Proceedings of the Tenth National Conference on Communications NCC-2004, Jan 30-Feb 1,2004, Indian Institute of Science, Bangalore, pp.336-340, R. Tripathi and Joseph John,.
61. Power Distribution of Diffuse Indoor Optical Wireless Systems Considering Multiple Sources and Multiple Reflections, , Second International Conference on Optical Communications & Networks, ICOCN 2003 Bangalore, India, October 20-22, 2003, Paper ID:2041, A.Sivabalan and Joseph John.
62. Modeling and Simulation of Indoor Optical Wireless Channels: A Review, , Convergent Technologies for the Asia-Pacific, IEEE TENCON 2003, Bangalore, India, Oct.14-17, 2003, A.Sivabalan, Joseph John.
63. High-Capacity Indoor Optical Wireless LAN Architecture, Convergent Technologies for the Asia-Pacific, IEEE TENCON 2003, Bangalore, India, Oct.14-17, 2003, Chaturi Singh, Joseph John, Y.N.Singh, K.K.Tripathi.
64. Optical processing of signals in surface plasmon resonance based opticalbio-sensors, in Proc. Of SPIE, vol. 5202 Optical Information Systems, edited by B. Javidi & D. Psaltis, SPIE, Bellingham, WA, USA, 2003, pp. 192-200, Anjan K. Ghosh.
65. Effects of Misalignments in Packaging of Array based Optical Interconnects and Processors, Proc. Of SPIE, vol. 5202 Optical Information Systems, edited by B. Javidi & D. Psaltis, SPIE, Bellingham, WA, USA, 2003, pp. 276-286, Anjan K. Ghosh.
66. Surface Plasmon resonance based optical biosmors invited talk in National symp. On Engineering Optics, Meerut, April 2003, Paper appears in Perspectives in Engg. Optics, ed. Kehar Singh and VK Rastogi, Anita Publications, New Delhi, pp. 57-65, April, 2003, Anjan K. Ghosh.
67. Establishing Chip Design Activities in Malaysia : Role of Malaysian Universities, Proceedings of Engineering Technology Conference, EnTech 2003 held on July 31-Aug 2003, Kuching, Malaysia, S. Qureshi & M.K. Suaidi.

68. Novel Software Architecture for Power Distribution Automation, Proceedings of IEEE Power Engineering Society General Meeting, Toronto, Ontario, Canada, July 13-17, 2003, R. P. Gupta, Sachchidanand and R. K. Varma.
69. Web Based Energy Audit and Accounting Software for Power Distribution Utilities, Proceedings of the International Conference on Electric Supply Industry in Transition: Issues and Prospects, Asian Institute of Technology, Thailand, January 14-16, 2004, pp. 9/26-37, R. P. Gupta, and A. Khastagir.
70. Substation Automation Communication Protocol, Proceedings of the International Conference on Systemics, Cybernetics and Informatics ICSCI-2004, Pentagram Research Center Pvt. Ltd., Hyderabad, India, February 12-15, 2004, pp. 499-503, R. P. Gupta, and N. Srivastava.
71. A Comparative Study of IEC61850 Communication Protocol with DNP3.0 and UCA2.0, Proceedings of National Workshop on Communication Protocol for Power System Automation, Central Power Research Institute, Bangalore, India, January 22-23, 2004, pp. IV / 1-6, R. P. Gupta and Mitali Pandey.
72. Web Based Monitoring of Power Distribution System, Proceedings of Seminar on Power System Data Repository and Load Research, Organized by Central Power Research Institute, Bangalore, India, November 20-21, 2003, pp. TS-V / 42-48, R. P. Gupta and A. Singh.
73. Development of Power Distribution Automation System, Proceedings of Seminar on Power System Data Repository and Load Research, Organized by Central Power Research Institute, Bangalore, India, November 20-21, 2003, pp. TS-V / 34-41, R. P. Gupta and S. C. Srivastava.
74. Remote Terminal Units RTU and Data Communication for Distribution Automation System, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.
75. Master Distribution Automation Software and Open Architecture, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.
76. Sensors and Instrumentation for Distribution Automation System, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.

77. Power Distribution Automation Developed at IIT Kanpur, Proceedings of Workshop-cum-Technology Dedication of Power Distribution Automation, Indian Institute of Technology Kanpur, India, February 22-23, 2003, R. P. Gupta.
78. Substation Automation: Data Communication Issues, The International Conference on Planning and Operation of Reliable Distribution Systems, Organized by Council of Power Utilities, Delhi, India, April 15-16, 2004 communicated, R. P. Gupta.
79. Acoustic Echo Cancellation using Multiple Sub-Filters, Proceedings IEEE TENCON 2003, pp. 393-396, Oct 2003, Bangalore, RN Sharma, AK Chaturvedi, and G Sharma.
80. A Novel Interleaver Design for Use in Turbo-SPC Codes, Proceedings Tenth National Conference on Communications, pp. 313-316, Jan 2004, IISc, Bangalore, R Subudhi and AK Chaturvedi.
81. A Simulation Study on Modeling the MIMO Propagation Channel Using the 3GPP/3GPP2 Spatial Channel Model, Proceedings Tenth National Conference on Communications, pp. 390-394, Jan 2004, IISc, Bangalore, R Agarwal, AK Chaturvedi, F Tufvesson and P Almers.
82. A Novel Scheme for Capacity Enhancement in DS-CDMA Systems, 2003 WNCG Wireless networking Symposium Oct 2003, University of Texas, Austin, K Mehrotra, A Jindal and AK Chaturvedi.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Beast in Chicago: Saul Bellow's Apocalypse in The Deans's December, International Fiction Review, Vol.30, 2003, pp. 67-76, G. Neelakantan.
2. Philip Roth's Apocalypse in American Pastoral, Philip Roth Newsletter, Vol.1, No. 2, 2003, pp. 9-10, G. Neelakantan.
3. Gender Inequality in Work Environment at Institutes of Higher Learning in Science and Technology in India, Work, Employment and Society, Vol.17, No.4, 2003, pp. 597-616, Namrata Gupta and A. K. Sharma.
4. Issues in Sustainable Development in India, Proceedings of International Conference on Population, Development and Environment, BITs Pilani, India, 2003, A. K. Sharma and P. Vigneswara Illawarsan.
5. Voluntary Development Organisations: Mission, Vision, and Reality, Gandhi Marg, Vol.23, No.1, 2003, pp.5-20, A. K. Sharma and Shailendra Kumar Dwivedi.

6. Complexities, Ambiguities and Conflicts in Voluntary Sector: A Study of Two Voluntary Development Organisations, *Guru Nanak Journal of Sociology*, Vol. 23, No.2, 2002, pp.11-26, Shailendra Kumar Dwivedi and A. K. Sharma. Published in 2003.
7. Power, Pluralism and Equality in India: A Sociological View, <http://www.sammaditthi.com> Online Journal of Sammaditthi Social Sciences Research, 3 November 2003, A. K. Sharma.
8. Comments on the Book *Cities Transformed: Demographic Change and its Implications in the Developing World*, *Population Review*, Vol. 43, Nos. 1-2, Section 3, 2004, A. K. Sharma.
9. On the Revival of Magical Practices in the Indian Systems of Medicine with Special Reference to Gandhi, *Gandhi Marg*, Vol. 25, No.4, 2004, pp. 435-445, A. K. Sharma.
10. Association for Protection of Human Rights: The First Two Decades, *Indian Journal of Human Rights*, Vol.5, Nos.1 and 2, 2001, pp.171-186, Munmun Jha.
11. Nehru and Civil Liberties in India, *International Journal of Human Rights*, Vol. 7, No. 3, 2003, pp. 103-115, Munmun Jha.
12. Effect of Financial Constraint on Inventory Investment, *Indian Development Review*, Vol.1, 2003, pp.1-25, T.V.S. Ramamohan Rao.
13. Vulnerability, Networking and Organization, *Indian Journal of Economics*, Vol. 84, 2003, pp.17-28, T.V.S. Ramamohan Rao.
14. An Approach to Sustainable Development, *Indian Journal of Economics*, Vol. 85, 2003, pp. 333-342, T.V.S. Ramamohan Rao.
15. A Unified Computational Lexicon for Hindi-English Code-Switching, *Proceedings of the 20th International Conference on Computational Linguistics*, University of Geneva, Switzerland, August 2004, Forthcoming Achla M Raina, Amitabha Mukerjee, Pankaj Goyal, Pushpraj Shukla.
16. Towards a Language Independent Encoding of Documents : A Novel Approach to Multilingual Question Answering, *Proceedings of the International Workshop on Natural Language Understanding and Cognitive Science NLUCS-04*, Portugal, April 2004, Prateek Jain, Manav Mittal, Sumeet Kumar, A Mukerjee, Pushpraj Shukla, Pankaj Goyal, Kumar Kapil, A Mukherjee, Achla M Raina.

17. Anaphora Resolution in Multi-Person Dialogue, Proceedings of the 5th SIGdial Workshop on Discourse and Dialogue, Boston, April 2004, Achla M Raina.
18. Semantic Role Tagging Using FrameNet, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Ankit Anand, Gaurav Pandey, Amitabha Mukerjee, Achla M Raina.
19. Multilingual Question Answering, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Pushparaj Shukla, Pankaj Goyal, Kumar Kapil, Amitabh Mukerjee, Achla M Raina.
20. A Frame-Semantic Approach for Tagging Hindi and Bangla Sentences, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Pankaj Goyal, Ankit Soni, Deepak Sharma, Amitabha Mukerjee and Achla M Raina.
21. Universal Networking Language - A Tool for Language-Independent Semantics?, T. Della Senta, G. Falquet, & E. Tovar eds., Convergences '03: International Conference on the Convergence of Knowledge, Culture, Language and Information Technologies, Library of Alexandria, Alexandria, Egypt, December 2003, Amitabha Mukerjee, Achla M Raina, Kumar Kapil, Pankaj Goyal, Pushpraj Shukla.
22. Saarthaka: A Bilingual Parser for Hindi, English and Code-Switching Structures, 10th Conference of the European Chapter of the Association for Computational Linguistics EACL03, Budapest, Hungary, April 2003, P Goyal, Manav R Mital, A Mukerjee, Achla M Raina, D Sharma, P Shukla, K Vikram.
23. Old and New Dilemmas in Indian Civic Education, Economic & Political Weekly, Vol. 38, No.44, Nov.1, 2003, pp. 4655-4660, Amman Madan.
24. Education as Vision for Social change, Review of Elementary Education for the Poorest and Other Disadvantaged Groups: The Real Challenge of Universalisation, by Dhir Jhingran and Jyotsna Jha, 2002, Economic & Political Weekly, Vol. XXXVIII, No. 22, May 31, 2003, pp 2135-2136, Amman Madan.
25. Culture as Learnable: A Cognitive Perspective, SARMAC News, Spring 2003, pp.3-5, Shikha Dixit.
26. Environmental Protection: The Role of Liability System in India, Economic and Political Weekly, Vol. 39, No.3, 2004, pp. 257-269, P. M. Prasad.
27. Hedging Judicial Risks: An Application to US versus Microsoft, Northeast Business & Economic Association NBEA, Montclair State University, Montclair, New Jersey,

- USA. October 3-4, 2003, NBEA, pp. 174-177, Dr. Manoj Dalvi, Dr. P. Murali Prasad, and Dr. Blaine Walgren.
28. Aspect of Changes in the Technological Regime in India under Globalization, N.K. Gouraha and Diwakar Sharma eds., Development in India for Whom and Where, Book City Publication, New Delhi, 2004, pp.54-67, B. K. Pattnaik.
 29. Scientific Productivity: Sociological Explorations in Indian Academic Science, Sociological Bulletin, Vol. 52, No.2, 2003, pp. 198-220, B. K. Pattnaik.
 30. Comparing Efficiency across State Transport Undertakings: A Production Frontier Approach, Indian Journal of Transport Management, Vol. 27, No. 3, 2003, pp. 374-391, S. K. Singh and V. Anand.
 31. The Cognitive Content of Psychology in India, Psychological Studies, Vol. 48, No. 3, 2003, pp. 17-22, Lila Krishnan.
 32. Ingestion, Digestion and Revulsion of Food and Culture in Anita Desai's Fasting, Feasting Lucknow Journal of Humanities, Vol. 1, No. 1, Jan-June 2004, pp. 21-30, T. Ravichandran.
 33. Whose Untouchable is Bakha Anyway? Appropriating the Alien Sensibility in Mulk Raj Anand's Untouchable, Readings, Vol. 1, No. 2, Oct. 2003, pp. 22-29, T. Ravichandran.
 34. Project Planning & Project Appraisal vis-à-vis our Approaches towards Sustainable Development, Orissa Economic Journal, VOL. XXV, No. 1 & 2, pp. 33-45, 2003, Rath B.
 35. Post Structural Reform Growth Patterns in Orissa & Their Implications for Future Development of the State, Orissa Economic Journal, VOL. XXV, No. 1 & 2, pp. 117-128, 2003, Rath B & Jena P R.
 36. Export and Growth Causality: An Indian Experience in the Post Liberalisation Period, Vision, Vol. XXII, No. 1-2, pp 1-12., 2004, Rath B. & N. C. Sahu.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Relating objectives to manufacturing decisions in dynamic environments: Implications of an exploratory study to Indian and German manufacturing firms, International Journal of Manufacturing Technology and Management, V 5, Nos 5/6, 2003, pp. 472 – 491, Sharma, R.R.K., Seliger, G. Eggenstein, M., Shrotriya, S. and Behera. A.

2. Diffusion of Product with Limited Supply and Known Expiration Date, Marketing Letters, V 14, No. 1, 2003, pp. 33-46, Sanjeev Swami & Pankaj J. Khairnar.
3. Contradictions of Democracy in workers' co-operative. Organization studies, 25, 2, 183-208, 2004, Varman, Rahul & Chakrabarti, Manali.
4. Nature of Trust in Small Firm Clusters. International Journal of Organization Analysis, 11, 2003, 93-104, Dwivedi, Mridula, Varman Rahul & Saxena, KK.
5. Workers' Struggles in the Time of Globalization: A Critique of Trade Unions in Historical Perspective, Indian Journal Of Labour Economics. 46, 4, 2003, 667-684, Varman, Rahul & Chakrabarti, Manali.
6. Investigating the Influence of Information Technology on Decision Making, Journal of Advances in Mgmt. Research, I, 2003, 74-87, Awasthi, Anjali & Varman, Rahul.
7. Bases of Power as function of organization type and managerial level. Behavioural Scientist, 42, 2003, 73-78, Gupta, B., & Sharma, N.K.
8. A Generative Process Planning System for Cold Extrusion International Journal of Production Research, Vol. 41 No. 2 pp 269-295, 2003, Santosh Kumar, Kripa Shanker, and GK Lal.
9. A decision-Making Framework for IT Outsourcing using the Analytic Hierarchal Process, International Conference on Systems Cybernetis and Informatics 2004, Feb. 10 – 14, Pandey Vivek and V. Bansal.
10. Multi-Machine Scheduling Problem for a General Class of Job Value Deterioration Function, ICOR, January 8-10, 2004, ISI, Kolkata, India, Sanjeev Swami and Sumit Rout.
11. Channel Contracts in the Movie Industry: Show Me the money, Proceedings from the Third and Fourth Business and Economics Scholars Workshop Summit in Motion Picture Industry Studies, Florida Atlantic University, USA, 2003, Sanjeev Swami, Eunkyoo Lee and Charles Weinberg.
12. Sequential Estimation under Linex Loss in Rergrression Model, International Statistical Institute ISI, 54th session under Statistical Inference, Estimation and Tests IV, 13th-20th August, Berlin, Germany, 2003, Chattopadhyay S. and Sengupta R.N.
13. Dynamic Optimal Pricing Policies in Yiels Management: A Markov Decision Process Approach, Proceeding of International Conference of the APORS under IFORS, New, Delhi, India, 2003, Sanjeev Swami and Anand Sabale.

14. Psychological perspectives on creativity. National Seminar on Creativity and Cognitive Science Sponsored by DST/ICPR, Department of Philosophy, University of Hyderabad, February, February 26-28, 2004, Rastotgi, and Sharma, N. K.

DEPARTMENT OF MATHEMATICS

1. A model for Fishery resource with reserve area, Non-linear Analysis: Real World Applications, Vol. 4, 625-637, 2003, Dubey, B., Chandra, P., Sinha, Prawal.
2. On the influence of wall properties in the peristaltic motion of Micropolar fluids, Vol. 452, 245-260, 2003, Muthu, P., Rathish Kumar B.V., Chandra P. in ANZIAM.
3. Modelling and analysis of the spread of carrier dependant infectious diseases with environmental effects, J. Biological Systems, Vol. 11, No. 3, 325-335, 2003, Shikha, S., Chandra, P., Shukla, J.B.
4. Unsteady state laminar flow of viscoelastic gel and air in a channel: application to mucus transport in a cough machine simulating trachea, Mathematical and Computer Modelling, Vol. 38, 63-75, 2003, Satpathy, D.K., Rathish Kumar, B.V., Chandra, P.
5. Effect of elastic wall motion on oscillatory flow of micropolar fluid in an annulus, Archive of Applied Mechanics, Vol. 73, 481-494, 2003, Muthu, P., Rathish Kumar B.V., Chandra, P.
6. Consistent estimation of coefficients in measurement error models under non-normality, J. of Multivariate Analysis, Vol. 86, No.2, 227-241, 2003, Shalabh.
7. Singularly perturbed problems in partial differential equations: a survey, Applied mathematics and computations, Vol. 134, 371-429, 2003, Patidar, K.C., Kadalbajoo, M.K.
8. Experimentally fitted spline in compression for the numerical solution of singular perturbation problems, Computers and Maths with Applications, Vol. 46, 751-767, 2003, Patidar, K.C., Kadalbajoo, M.K.
9. An uniform fitted operator method for solving boundary value problems for singularly perturbed delay differential equations: layer behaviour, International J. Computer Mathematics, Vol. 80, No. 10, 1261-1276, 2003, Patidar, K.C., Kadalbajoo, M.K.
10. Exponentially fitted spline approximation method for solving self-adjoint singular perturbation problems, IJMMS, Vol. 3873-3891, 2003, Patidar, K.C., Kadalbajoo, M.K.

11. Variable mesh spline in compression for the numerical solution of singular perturbation problems, *International J. Computer Mathematics*, Vol. 80, No.1, 83-93, 2003, Patidar, K.C., Kadalbajoo, M.K.
12. The Helgason-Fourier transform for symmetric spaces II, *J. of Lie Theory*, Vol. 14, 227-242, 2004, Mohanty, P., Ray, S.K., Sarkar, R.P., Sitaram, A.
13. On stochastic properties of m-spacings, *Journal of statistical planning and inference*, 1152, 683-697, 2003, Misra, N., Van der Meulen.
14. Reliability properties of reversed residual lifetime, *Communications in Statistics – Theory & Methods*, 3210, 2031-2042, 2003, Misra, N., Nanda, A.K., Singh, H., Paul, P.
15. On estimating the mean of the selected normal population, Under the LINEX Loss Function, *Metrika*, 582, 173-183, 2003, Misra, N., Van der Meulen.
16. Stochastic comparison of poisson and binomial distributions with their mixtures, *Statistics & Probability Letters*, 654, 279-290, 2003, Misra, N.
17. Reliability properties of reversed residual lifetime, *Communications in Statistics – Theory & Method*, 334, 991-992, 2004, Misra, N.
18. An efficient algorithm for estimating the parameters of superimposed exponential signals, *Journal of Statistical Planning and Inference*, Vol. 110, No. 1-2, 23-34, 2003, Kundu, D., Bai, Z.D., Rao, C.R., Chw, M.
19. Discriminating between the Weibull and the GE Distributions, *Computational Statistics and Data Analysis*, Vol. 43, 179-196, 2003, Kundu, D., Gupta, R.D.
20. Estimating the number of components by a data independent penalty function approach, *Journal of Statistical planning and inference*, Vol. 116, No.2, 437-450, 2003, Kundu, D., Nandi, S.
21. Modified moment estimators for the two-parameter Birnbaum-Saunders distributions, *Computational Statistics and Data Analysis*, Vol. 43, 283-298, 2003, Kundu, D., Ng, H.K.T., Balakrishnan, N.
22. Exact likelihood inference based on type-II hybrid censored samples from the exponential distribution, *Annals of the Institute of Statistical Mathematics*, Vol. 55, No. 2, 319-330, 2003, Kundu, D., Childs, A., Chandrasekar, B., Balakrishnan, N.

23. Determination of discrete spectrum in a stationary random field, *Statistica Neerlandica*, Vol. 57, No.2, 258-184, 2003, Kundu, D., Nandi, S.
24. Analysis of incomplete data in presence of dependent competing risks, *Recent Advances in Statistics and Probability*, Editors: N. Balakrishnan, N. Kannan and M.R. Srinivasan, Narosa, New Delhi, 313-322, 2003, Kundu, D., Basu, S.S.
25. Closeness of gamma and generalized exponential distribution, *Communications in Statistics – Theory and Methods*, Vol. 32, No.4, 705-721, 2003, Kundu, D., Gupta, R.D.
26. Estimating the parameter of the fundamental frequency model, *Statistical Methods and Applications*, Vol. 12, No.3, 341-360, 2003, Kundu, D., Nandi, S.
27. The Weierstrass-Enneper representation using hodographic coordinates on a minimal surfaces, *Proceedings of Indian Academy of Sciences – Math. Sci.* Vol. 113, No. 2, May 2003, Dey, R.
28. Summability kernels for L^p multipliers, *Journal of Fourier Analysis and Applications*, Vol. 9, 101-114, 2003, Mohanty, P., Madan, S.
29. Large classes of minimally supported frequency wavelets of $L^2\mathbb{R}$ and $H^2\mathbb{R}$, *Journal of Geometric Analysis*, Vol. 13, #4, 557-579, 2003, Arcozzi, N., Behera, B., Madan, S.
30. Wavelet subspaces invariant under groups of translation operators, *Pro. Indian Academy of Sciences*, Vol. 113, 171-178, 2003, Behera, B., Madan, S.
31. Extensions of weak-type multipliers, *Studia Mathematica*, Vol. 158, 1-10, 2003, Mohanty, P., Madan, S.
32. Method of Semi-discretization in time for quasi-linear integro-differential equations, *International Journal of Mathematics and Mathematical Sciences*, Vol. 9, 469-478, 2004, Shukla, R., Bahuguna, D.
33. Approximations of solutions to second order semi-linear integro-differential equations, *Numerical Functional Analysis and Optimization*, Vol. 24, 365-390, Shukla, R., Bahuguna, D.
34. Approximations of solutions to nonlinear Sobolev type evolution equations, *Electronic Journal of Differential Equations*, Vol. 2003, 1-16, 2003, Shukla, R., Bahuguna, D.

35. A non stationary subdivision scheme for generalizing trigonometric spline surfaces to arbitrary meshes Computer Aided Geometric Design, Vol. 20, 61-77, 2003, Shunmugaraj, P., Jena, M.K., Das, P.C.
36. A non stationary subdivision scheme for curve interpolation, ANZIAM, Vol. 44, E216-E235, 2003, Shunmugaraj, P., Jena, M.K., Das, P.C.
37. Stochastic image compression using fractals, information, technology, computers & communications, IEEE Proceedings, 574-579, April 2003, Kapoor G.P., Kapur A., Arora K., Jain A.
38. Hidden variable bivariate fractal surfaces, Fractals, Vol. 113, 277-288, 2003, Kapoor, G.P., Chand, A.K.B.
39. Improved genetic algorithm for permutation flowshop scheduling problem, Computers and Operations Research, Vol. 314, 593-606, 2003, Iyer, S.K., Saxena, B.
40. A simple estimate of the index of stability for symmetric stable distributions, Stochastic Modelling & Applications, Vol. 61, 9-19, 2003, Iyer, S.K., Jammalamadaka.
41. Correlated bivariate sequences using linear structures for queueing and reliability applications, Communications in Statistics, Vol. 332, 331-350, 2004, Iyer, S.K., Manjunath, D.
42. Convexifactors, generalized convexity and vector optimisation, Optimization, Vol. 53, 77-94, 2004, Dutta, J., Chandra, S.
43. On optimality criteria in set optimization Journal of Australian Mathematical Society, Vol. 75, 221-232, 2003, Dutta, J., Lalitha, C.S., Govil., M.
44. A Study of 3D unsteady flow dynamics in an arterial vessel with multiple aneurysms, Computational Mechanics Vol. 321-2, 16-28, 2003, Rathish Kumar, B.V.
45. Natural Convection thermally stratified wavy vertical enclosure, Numerical Heat Transfer, Vol.7, 753-776, 2003, Rathish Kumar, B.V., and Shalini.
46. Free convection in a non-Darcian wavy porous enclosure, Int. J. Engineering Science, Vol. 4116, 1827-1848, 2003, Rathish Kumar, B.V., and Shalini.
47. Krylov Subspace solvers in parallel numerical computation of Solutions to PDEs modelling heat transfer applications, Numerical Heat Transfer-AApplications: Vol.

- 45, 1-25, 2004, Rathish Kumar, B.V., Bipin Kumar, Shalini, Manimehra, Peeyush Chandra, Raghavendra, V., Singh, R.K., Mahendra, A.
48. Non-Darcy free convection induced by a vertical wavy surface to a thermally stratified porous medium, *IJHMT*, Vol. 47, 2353-2363, 2004, Rathish Kumar, B.V. and Shalini.
49. A Combinatorial Arc Tolerance Analysis for Network Flow Problems, *Journal of Applied Mathematics and Decision Sciences*, Vol. 72, 1-10, 2003, Sharma, P., Sokkalingam, P.T.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Dhar iron pillar, *Bulletin of Metals Museum*, 36, 2003, 23-44, R. Balasubramaniam.
2. Electrochemical behaviour of sintered, yttria reinforced ferritic stainless steels, *Powder Metallurgy*, 46, 2003, 25-29, J. Shankar, A. Upadhyaya, R. Balasubramaniam and A.V. Ramesh Kumar
3. Finite element evaluation of hydrogen solubility enhancements due to thermal residual stresses in palladium-alumina composites, *Journal of Alloys and Compounds*, 356-357, 2003, 9-12, P.M. Dixit, R. Balasubramaniam and T. B. Flanagan.
4. The interaction of hydrogen with internally oxidized Pd alloys as illustrated by Pd-Fe alloys, *Journal of Alloys and Compounds*, 356-357, 2003, 3-8, D. Wang, T.B. Flanagan and R. Balasubramaniam.
5. Phosphoric irons for concrete reinforcement applications, *Current Science*, 85, 2003, 9, R. Balasubramaniam.
6. Alloy design of ductile phosphoric iron: ideas from archaeometallurgy, *Bulletin of Materials Science*, 26, 2003, 483-492, Gouthama and R. Balasubramaniam.
7. On the origin of non-uniform surface electrochemical potentials on the Delhi iron pillar, *Current Science*, 85, 2003, 378-382, R. Balasubramaniam.
8. Corrosion resistance of the Dhar iron pillar, *Corrosion Science*, 45, 2003, 2451-2465, R. Balasubramaniam and A.V. Ramesh Kumar.
9. Influence of manufacturing methodology on the corrosion resistance of the Delhi iron pillar, *Indian Journal of History of Science*, 38, 2003, 195-214, R. Balasubramaniam.

10. Metallurgical investigations on a chalcolithic copper nail from Balathal, *Man and Environment*, 28, 2003, 33-40, A. Srivastava, R. Balasubramaniam and V.N. Misra.
11. Some metallurgical aspects of Gupta period gold coin manufacturing technology, *Indian Journal of History of Science*, 38, 2003, 331-349, R. Balasubramaniam and N. Mahajan.
12. Material characterization of ancient Indian copper, *Bulletin of Materials Science*, 26, 2003, 593-600, A. Srivastava and R. Balasubramaniam.
13. Forging and corrosion resistance of the Delhi iron pillar, *Bulletin of Jnana Pravaha*, 6, 2003, 61-72, R. Balasubramaniam.
14. Electrochemical behavior of sintered oxide dispersion strengthened stainless steels, *Corrosion Science*, 46, 2004, 487-498, J. Shankar, A. Upadhyaya and R. Balasubramaniam.
15. A marvel of medieval Indian metallurgy: Thanjavur's forge-welded iron cannon, *Journal of Metals*, 56[1], 2004, 17-23, R. Balasubramaniam, A. Saxena, T.R. Anantharaman, S. Reguer and P. Dillmann.
16. High temperature environmental interactions in carbon-alloyed iron aluminide of low Al content, *Materials Science and Engineering A*, 368, 2004, 48-55, A. P. Singh, R. Balasubramaniam and R.G. Baligidad.
17. Characterization of rust on ancient Indian iron, *Current Science*, 85, 2003, 1546-1555, R. Balasubramaniam, A.V. Ramesh Kumar and P. Dillmann.
18. Hydrogen bronze formation within Pd/MoO₃ composites, *Journal of Physical Chemistry B*, 108, 2004, 310-319, H. Noh, D. Wang, S. Luo, T.B. Flanagan, R. Balasubramaniam and Y. Sakamoto.
19. Insights into internal oxidation of binary and ternary Pd alloys using hydrogen isotherms, *Journal of Alloys and Compounds*, 364, 2004, 105-112, D. Wang, T.B. Flanagan and R. Balasubramaniam.
20. Long term corrosion behavior of copper in soil: a study of archaeological analogues, *Materials and Corrosion*, 55, 2004, 194-202, R. Balasubramaniam, T. Laha and A. Srivastava.
21. On the role of environment on the corrosion resistance of the Delhi iron, Pillar, *Current Science*, 86, 2004, 559-566, S. Halder, G.K. Gupta and R. Balasubramaniam.

22. Corrosion behavior of sintered oxide dispersion strengthened stainless steels, *Journal of Materials Science Letters*, 39, 2004, 1815-1817, J. Shankar, A. Upadhyaya and R. Balasubramaniam.
23. Estimation of the original erection site of the Delhi iron pillar at Udayagiri, *Indian Journal of History of Science*, 39.1, 2004, 51-74, M.I. Dass and R. Balasubramaniam.
24. Fretting wear behaviour of advanced ceramics and cermet against alumina, *Journal of Materials Research*, 18[6], 2003, 1314-1324, B. Basu, J. Vleugels and O. Van Der Biest.
25. Friction and wear mechanism of sialon ceramics under fretting contacts, *Materials Science & Engineering, A* 359, 2003, 228-236, B. Basu, J. Vleugels, M. Kalin and O. Van Der Biest.
26. Fretting Wear of TiCN-Ni cermet: Influence of secondary carbide content, *P/M Science and Technology Briefs*, 5, 2003, 5-11, D. Sarkar, S.Ahn, S.Kang and B. Basu.
27. Development of ZrO₂-TiB₂ Composites: role of residual stress and starting powders, *Journal of Alloys and Compounds*, 365, [1-2], 2004, 266-270, B. Basu, J. Vleugels and O. Van Der Biest.
28. Transformation behaviour of tetragonal zirconia: role of dopant content and distribution, *Materials Science & Engineering, A* 366, [2], 2004, 338-347, B. Basu, J. Vleugels and O. Van Der Biest.
29. Microstructure-toughness-wear relationship of tetragonal zirconia ceramics, *Journal of the European Ceramic Society*, 24, [7], 2004, 2031-2040, B. Basu, J. Vleugels and O. Van Der Biest.
30. Development of WC-ZrO₂ nanocomposites by spark plasma sintering, *Journal of the American Ceramic Society*, 87, [2], 2004, 317-319, B. Basu, Jong-Heun Lee and Doh-Yeon Kim.
31. Process control and optimization of AOD process using genetic algorithm, *Materials and Manufacturing Processes*, 18, [3], 2003, 401-408, B. Deo and V. Srivastava.
32. Slag droplet model, a dynamic tool to simulate and optimize the refining conditions in BOF, *Steel Research*, 74, 2003, 125-130, E. Graveland-Gisolf, P. Mink, A. Overbosch, R. Boom, G. de Gendt and B. Deo.

33. Optical characterization of polysilane thin films, *Synthetic Metals*, 139, 2003, 835-837, A. Sharma, Deepak, S. Kumar, M. Katiyar, A. K. Saxena, A. Ranjan and R. K. Tiwari.
34. Effect of prior β processing steps on microstructural refinement during thermomechanical processing of a two phase $\alpha+\beta$ titanium alloy, *Materials Science and Technology*, 19, [12], 2003, 1688-1696, K. Mallikarjun, Satyam Suwas, S. Ghosh Chowdhury and S. Bhargava.
35. Effect of prior β processing on superplasticity of $\alpha+\beta$ thermomechanically treated Ti-632Si alloy, *Journal of Materials Processing Technology*, 134, 2003, 35-46, K. Mallikarjun, Satyam Suwas and S. Bhargava.
36. Microstructural evolution during β processing of the $\alpha+\beta$ titanium alloy, Ti-6Al-3.2Mo-1.8Zr-0.3Si, *Practical Metallography*, Vol. 41, [1], 2004, 8-21, K. Mallikarjun, Satyam Suwas and S. Bhargava.
37. Fabrication and characterization of a monolithic thin film edge emitter device with zinc oxide tungsten based thin-film phosphor, *Journal of Vacuum Science and Technology*, B 22, 2004, 165 - 170, V. Bhatia, L. K. Karpov, and M. H. Weichold.
38. Studies on metal build up on atomisers during free fall gas atomisation of liquid metals, *Powder Metallurgy*, 46 [2], 2003, 181, D. Singh, R.K. Dube and S.C. Korla.
39. Development of operating pressure diagram for free fall gas atomisation of liquid metals, *ISIJ International*, 43 [12], 2003, 2067, D. Singh, R.K. Dube and S.C. Korla.
40. Orientation dependence of ferroelectric properties of pulsed laser ablated, $\text{Bi}_{4-x}\text{Nd}_x\text{Ti}_3\text{O}_{12}$ films, *Applied Physics Letters*, 86 [12], 2003, 2414-2416, A. Garg, A. Sneedon, P. Lightfoot, M. Dawber, J.F. Scott and Z.H. Barber.
41. Ferroelectric soft mode and central mode in $\text{SrBi}_2\text{Ta}_2\text{O}_9$ Films, *Journal of Physics C: Condensed Matter*, 15, 2003, 8095-8102, M. Kempa, P. Kuzel, S. Kamba, P. Samoukhina, J. Petzelt, A. Garg and Z. H. Barber.
42. Prospects and problems of using TEM in analyzing cavitation during superplastic deformation, *EMSI Bulletin*, 3, 2002, 12-18, Gouthama and K.A. Padmanabhan.
43. Transmission electron microscopic evidence for cavity nucleation during superplastic deformation, *Scripta Materialia*, 49, 2003, 761-766, Gouthama and K.A. Padmanabhan.

44. Superior low cycle fatigue behaviour of multiphase microstructure of medium C microalloyed steel processed through rolling, *Scripta Materialia*, 49, 2003, 503-508, S. Sankaran, V. S. Sarma, Gouthama, and K.A. Padmanabhan.
45. Effect of uncertainty in formation energies of defects in calculations for carrier concentrations in semi-insulating GaAs, *Materials Science & Engineering B*, 100 [1], 2003, 102-105, Deepak.
46. Variations in first principles defect energies in GaAs and their effect on practical predictions, *Bulletin of Materials Science*, 26 [10], 2003, 169-173, Deepak, D. Balamurugan and K. Nandi.
47. Transient flow in ladles during initial and post gas injection periods, *ISIJ International*, 43, 2003, 132-134, D. Mazumdar, D. Steingard, C. Seybert and J.W. Evans.
48. Development of a three dimensional turbulent flow calculation procedure and its application to ladles stirred with dual porous plug, *Transactions of IIM*, 56 [2], 2003, 95-107, P. Mitra, D. Mazumdar, A. Tamrakar, G. Gupta and J. Mandal.
49. Some considerations concerning empirical correlations for plume spout eye area in slag covered metallic melts, *ISIJ International*, 43, 2003, 2076-2078, D. Mazumdar, and J.W. Evans.
50. Macroscopic models for gas stirred ladles: a review, *ISIJ International*, 44, 2004, 447-461, D. Mazumdar, and J.W. Evans.
51. A model for estimating exposed plume eye area in Steel refining, ladles covered with thin slag, *Materials and Metallurgical Transactions, B*, 35B, 2004, 400-404, D. Mazumdar, and J.W. Evans.
52. A review of computer simulation of tumbling mills by DEM - Part I, Contact mechanics, *International Journal of Mineral Processing*, 71 [1-4], 2003, 73-93, B. K. Mishra.
53. A review of computer simulation of tumbling mills by DEM - Part II, Practical Applications, *International Journal of Mineral Processing*, 71 [1-4], 2003, 73-93, B. K. Mishra.
54. Interfaces in ceramic matrix composites, *Ann. Chim. Sci. Mater.* 27 [S1], 2002, S113-S128, V.S.R. Murthy.

55. Electroremediation of CrVI contaminated soils: kinetics and energy efficiency, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 222, 2003, 253-259, K. Sanjay, A. Arora, R. Shekhar and R.P. Das.
56. Electrochemical cleaning of soil contaminated with a dichromate lixiviant, *International Journal of Mineral Processing*, 72, 2003, 401-406, M. Manna, K. Sanjay and R. Shekhar.
57. Microstructural evolution of 434L ferritic stainless steel with copper and boride addition, *Transaction PMAI*, 29, 2003, 45-50, A. Chakraborty, A. Upadhyaya and R. K. Ray.
58. P/M processing of high-density ferritic stainless steel with boron additive for automotive application, *Transactions Indian Institute of Metals*, 56, 2003, 205-213, A. Chakraborty, A. Upadhyaya, and R.K. Ray.
59. The knoop hardness yield locus of Ti-24Al-11Nb alloy, *Materials Letters*, 57, 2003, 3251-3256, S. Suwas, I. Lahiri, R.K. Ray and S. Bhargava.
60. Recrystallization behaviour of a heavily cold rolled Ni₃Al B,Zr alloy, *Metallurgical and Materials Transactions A*, 35A, 2004, 71-81, B. Bhattacharya and R.K. Ray.
61. Low cycle fatigue behavior of a multiphase medium carbon microalloyed steel processed through rolling, *Scripta Materialia*, 49, 2003, 503-508, S. Sankaran, V. Sarma, Gouthama, S. Sangal and K.A. Padmanabhan.
62. Automated dihedral angle measurement in liquid phase sintered tungsten heavy alloy, *Zeitschrift für Metallkunde*, 95 [1], 2004, 3-7, P. Chhillar, S. Sangal, and A. Upadhyaya.
63. Microwave and conventional sintering of premixed and prealloyed, Cu-12Sn bronze, *Science of Sintering* 35 2003 49-65. G. Sethi, A. Upadhyaya, and D. Agrawal.
64. Powder injection molding PIM and sintering of austenitic stainless steel for automotive applications, *Indian Journal of Engineering & Materials Sciences*, 10, 2003, 306-313, A.K. Mishra, S. Paul, A. Upadhyaya, T. Barriere and J.C. Gelin.
65. Effect of Fe on the constitution of Cu-W alloys at 1200°C, *Journal of Alloys and Compounds*, 361, 2003, 222-226, V. Gauthier, F. Robaut, A. Upadhyaya and C.H. Allibert.

66. Effect of powder milling on microstructural evolution in liquid phase sintered W-Ni-Fe heavy alloys, Transactions of PMAI, 29, 2003, 38-44, A. Shrivastava and A. Upadhyaya.
67. Automated dihedral angle measurement in sintered heavy alloys, Transactions of PMAI, 29, 2003, 51-53, P. Chhillar, K. Chattopadhyay, P. Mishra, A. Upadhyaya, and S. Sangal.
68. Effect of activators on sintering of W-Cu and W-Bronze alloys, Transactions of PMAI, 29, 2003, 54-60, M. Debata, C. Ghosh, and A. Upadhyaya.
69. Microstructural and microhardness studies of microwave sintered Cu-12Sn bronze alloys, Transaction of PMAI, 29, 2003, 61-65, N. Agarwal, G. Sethi, A. Upadhyaya, D. Agarwal and R. Roy.
70. Effect of boron addition on sintering of tungsten heavy alloys, Journal of Materials Science, 39, 2004, 2539-2541, M. Debata and A. Upadhyaya.
71. Effect of yttria and YAG on sintered 434L and 316L P/M stainless steel, Materials Letters, 58, 2004, 2037-2040, J. Jain, A.M. Kar, and A. Upadhyaya.
72. Microstructural characterization of ancient Indian iron, Annual Meeting of the Electron Microscopy Society of India, Shimla, April 16-18, 2003, R. Balasubramaniam, Gouthama and P. Dillmann.
73. Delhi iron pillar: ideas for heat treatments and surface coatings, Keynote lecture, International Conference on "Advances in Surface Treatments 2003", International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, R. Balasubramaniam.
74. Effect of saccherine addition on the direct and pulsed electrodeposition of nanocrystalline nickel, International Conference on "Advances in Surface Treatments 2003", International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, Rajiv Mishra, S. Sankaran and R. Balasubramaniam.
75. Electrodeposited Ni-WC composite coatings, International Conference on "Advances in Surface Treatments 2003", International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, M. Surender, B. Basu and R. Balasubramaniam.
76. Some studies on electrodeposited nanocrystalline chromium surface coatings, International Conference on "Advances in Surface Treatments 2003", International

Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, V. Jaju, S. Pal and R. Balasubramaniam.

77. Wear behaviour of electrodeposited Ni-WC composite coatings, 17th National Convention of Metallurgical and Materials Engineers and National Seminar on Emerging Materials for Wear Applications, Bhopal, October 11-12, 2003, M. Surender, R. Balasubramaniam, B. Basu and M.N. Mungole.
78. The corrosion resistance of the 1600 year-old Delhi iron pillar, CORCON 2003 International Conference on Corrosion, Mumbai, December 1-4, 2003, R. Balasubramaniam.
79. Electrochemical behavior of Ti-based alloys in simulated human body fluid environment, BIMAO 2003, XIV National Conference on Biomaterials and Artificial Organs, Mumbai, December 1-3, 2003, Animesh Choubey, B. Basu, R. Balasubramaniam.
80. Tribological behavior of Ti-Based alloys in simulated body fluid solution at fretting contacts, BIMAO 2003, XIV National Conference on Biomaterials and Artificial Organs, Mumbai, December 1-3, 2003, Animesh Choubey, B. Basu, R. Balasubramaniam.
81. Metallurgy of ancient Indian iron, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.
82. The story of the Delhi iron pillar, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.
83. Metallurgy of ancient Indian coinage, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.
84. Microstructural and electrochemical characterization of ancient bloomery iron, Annual Meeting of the Materials Research Society of India, Varanasi, February 9-11, 2004, R. Chaturvedi, D. Neff, R. Balasubramaniam and A.K. Gupta.
85. Development of nanocrystalline nickel coating of low co-efficient of friction, Annual Meeting of the Materials Research Society of India, Varanasi, February 9-11, 2004, R. Mishra, B. Basu and R. Balasubramaniam.
86. TEM study of the role of precipitate particles in a quasi-single phasesuperplastic alloy
EMSI-2003, CPRI, Shimla, April, 2003, Gouthama, R.K. Ray and K.A. Padmanabhan.

87. Study of carbon nanotubes prepared by chemical vapor deposition using transmission electron microscopy EMSI-2003, CPRI, Shimla, April, 2003, Malladi V Pavan Kumar, Gouthama, Deepak Kunzru.
88. Microstructural Evolution by Severe Plastic Deformation MRSI-2004, BHU, Varanasi, February, 2004 S. Giribaskar, Gouthama and R. Prasad
89. Fretting behaviour of Mg-SiC_p composite materials, 15th AGM-MRSI symposium, Banaras Hindu University, Varanasi, February, 2004, B.V. Manoj kumar, Bikramjit Basu, V.S.R. Murthy and M. Gupta.
90. In vitro reactivity of selected bio-ceramic glasses, 57th Annual technical meeting of IIM, Kolkata, December 14-16, 2003, A. Srivastava, Debdas Roy and V.S.R. Murthy.
91. Recent advances in powder metallurgy processing of materials, Proceedings of International Conference on Advances in Materials & Processes for Industrial Applications, P.S. Subramaniam Ed., ASM International, Pune, 2003, pp. 224-233, A. Upadhyaya.
92. TEM studies on the matrix structure refinement in thermomechanically treated tungsten heavy alloys, Proc. XXVI Annual Conference on Electron Microscopy and Allied Fields, Electron Microscopy Society of India, 2003, pp. 202-203, A. Upadhyaya, Gouthama, and P.P. Bhattacharya.
93. Sintering of Metal Ceramic Particulate Composites IIM awardee lecture, 57th Annual Technical Meeting of The Indian Institute of Metals NMD-ATM 2003, November 14-16, 2003, Kolkata, A. Upadhyaya.
94. Improvement of toughness of Y-ZrO₂: role of dopant distribution, 8th International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 29, 2003, . Bikramjit Basu.
95. Processing of nanoceramics and nanoceramic composites: new results, 8th International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 30, 2003, Bikramjit Basu.
96. Degradation in a methyl-phenyl co-polymeric polysilane for LED applications,” Materials Research Society Spring Meeting, April 21-25, 2003, San Francisco. A. Sharma, Deepak, M. Katiyar, S. Kumar, V. Chandrasekhar, K. Saxena, A. Ranjan and R. K. Tiwari.

97. Polysilanes for light emitting diodes, Indo-Italian Workshop on Organic Semiconductors, October 14-17, 2003, Samtel Centre for Display Technologies & Indian Institute of Technology Kanpur, India. Asha Sharma, U. Lourderaj, Deepak, N.Sathyamurthy and Monica Katiyar
98. Thermal oxidation of GaN: Determination of the optical constants of the oxide and their correlation with the quality of the oxide, ICMAT 2003, December 7-12, 2003 Singapore, S.K. Srivastava, S. Kumar, Deepak, M. Katiyar, S. Tripathy, S.J. Chua.
99. Effect of Substrate on Phase Transformation Kinetics of WSi_x films, ICMAT 2003, 7-12 December 2003, Singapore, S. Bharat, P.K. Sahoo, M. Katiyar.
100. Control of radiative processes using surface plasmon resonances in metal nanostructures, Excited State Processes in Electronic and Bio nanomaterials 2003, August 11-16, Los Alamos National Laboratory, USA A. Mikhailovsky, J. Ostrowski, M. Katiyar, G. Bazan.
101. Thermo-mechanical processing of Tungsten dispersed copper strips via a powder metallurgy route, International conference on 'Advances in Powder Metallurgy and Particulate Materials' M.P.I.F, Las Vegas, U.S.A. June 12, 2003, R.K. Dube and Rajesh Sharma.
102. Modelling of some fundamental and applied problems in iron and steel making, Indo-US workshop on Intelligent Processing of Metallic Materials, Goa, March 22-24, 2004, D. Mazumdar.
103. Experimental study of fused deposition through electrochemical discharge, Proceedings of the 7th Japan-India Joint seminar, Tokyo, Japan, February 19-21, 2004, pp 111-118. Madhuri Karnik, R. Shekhar and A. Ghosh.
104. Automated Dihedral Angle Measurement in Liquid Phase Sintered Alloys, 3rd International Conference on Science, Technology, and Application of Sintering SINTERING2003, State College, PA, USA September 15-17, 2003, P. Chhillar, S. Sangal, A. Upadhyaya.
105. Effect of beta grain size on tensile behaviour and ductile fracture toughness of a metastable β titanium alloy, Ti-10V-2Fe-3Al, Presented in the ATM of IIM, Calcutta, November 2003, A Bhattacharjee, V.K.Verma, S.V. Kamat, AK Gogia and S. Bhargava.
106. Microwave and conventional sintering of premixed and prealloyed bronze, 3rd International Conference on Science, Technology, and Application of Sintering

SINTERING2003, State College, PA, USA September 15-17, 2003, G. Sethi, A. Upadhyaya, D. Agarwal.

107. Effect of YAG addition on sintering of stainless steel, 3rd International Conference on Science, Technology, and Application of Sintering SINTERING2003, State College, PA, USA Sep 15-17, 2003, J. Jain and A. Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Development Of Rubber Pressure Molding Technique To Fabricate Reinforced Plastic Components XII National Seminar on Aerospace Structures, September 2003, Bangalore, pp 258-264, Prashant Kumar with Tinku K.Saha, Suraj K Behera, S D Sharma and K. K. Kar.
2. Fracture Toughness of Adhesively Bonded FRP Laminates Under Static and Dynamic Loading XII National Seminar on Aerospace Structures, September 2003, Bangalore, pp 100-107, Prof. Prashant Kumar With R. K. Singh and Yekabbara Rao Allanki.
3. Control Scheme of a Two - finger Gripper for Emulating Human Characteristics in Cooperative Tasks', Life Support, Vol. -15, No.2, 2003, pp 5-12, Goro Obinata and Ashish Dutta.
4. 'Development of an intelligent statically stable humanoid Robot', Proceedings of the National Conference on Advanced Manufacturing and Robotics, CMERI, Durgapur, Jan. 10-11, 2004, In Press, P. Kulkarni, A. Dutta, V. Abhishek, A. Mukerjee, Ashish Dutta.
5. 'Development of an Advanced Telemanipulator using an Exoskeleton, FES and Vision System', Proceedings of the National Conference on Advanced Manufacturing and Robotics, CMERI Durgapur, Jan 10-11,2004 In Press M. Maheswari, A. Sharma, S.K. Dube, P. Guha , Prof. Ashish Dutta.
6. 'Processing and Mechanical Characterization of Lightweight Polyurethane Composites, Journal of Material Science, 38:8, April, 2003, pp. 1631-1643, Chalivendra, V. B., Shukla, A. Bose, P.Venkitanarayanan and A.V. Parameswaran.
7. Quasi-Static Stress Fields for a Crack Inclined to the Property Gradation in Functionally Gradient Materials, Acta Mechanica, 162, May, 2003, pp. 167-184, Chalivendra, V. B., Shukla, P.Venkitanarayanan and A.V. Parameswaran.
8. Dynamic Out of Plane Displacement Fields for an Inclined Crack in Graded Materials, Journal of Elasticity, 69, 2002, but published in Aug 2003 due to issue

- back log, pp. 99- 119, Chalivendra, V. B., Shukla, P.Venkitanarayanan and A. V. Parameswaran.
9. An Experimental Investigation of Dynamic Crack Propagation in a Brittle Material Reinforced with a Ductile Layer, *Optics and Lasers in Engineering*, 40:4, October, 2003, pp.289-306, Singh R. P., P.Venkitanarayanan and Parameswaran V.
 10. Photoelastic Investigation of Interfacial Fracture Between Orthotropic and Isotropic Materials, *Optics and Lasers in Engineering*, 40:4, October, 2003, pp. 307-324. Shukla, A., Chalivendra, V. B., Parameswaran, V. and Dr. P. Venkitanarayanan Lee, K. H.
 11. Simulation Of Asphalt Materials Using a Finite Element Micromechanical Model With Damage Mechanics, *Transportation Research Record 1832, Journal of Transportation Research Board, USA, December, 2003*, pp. 86-95, Sadd, M., H., Dai, Q., Parameswaran, V., and Dr. P.Venkitanarayanan Shukla, A.
 12. Heat Transfer enhancement in cross-flow heat exchangers using oval tubes and multiple delta wings, *Int. JI of Heat and Mass Transfer* 46:2841-2856, 2003, Dr. V.Eswaran, S. Tiwari, D. Maurya, G. Biswas, and V. Eswaran.
 13. Numerical Prediction of Heat Transfer in a Channel with a Built-in Oval Tube and Various Arrangements of Vortex Generators, *Numerical Heat Transfer Part A*, 44:315-333, 2003, V. Eswaran, V. Prabhakar, G. Biswas and V. Eswaran.
 14. Two-dimensional steady flow of a power-law liquid past a square cylinder in a plane channel: momentum and heat transfer characteristics, *Ind. & Eng. Chem. Res. Am. Chemical Soc. Journal*, 42:5674-5686, 2003, V.Eswaran, A.K. Gupta, A.Sharma, R.P. Chhabra and V. Eswaran.
 15. On the Diffusion-Wave Model for the Spread of Modern Humans, V. Eswaran, reply to O. M. Pearson and A. C. Stone, *Current Anthropology*, 44, No 4, pp 559-560, 2003.
 16. Power-law flow past a square cylinder: momentum and heat transfer characteristics, *Chem. Eng.Sci.*, 58:5315- 5329, 2003, B. Paliwal, A.Shanna, R.P. Chhabra and V. Eswaran.
 17. A comparative study of Dirichlet and Neumann conditions for path planning through harmonic functions, *Future Generations Computer Systems*, Special issue: Selected numerical algorithms - Edited by Jerzy Wasniewski, Jack Dongarra, Kaj Madsen, Vol 20/3, pp 441-452, 2003, M. Karnik, B. Dasgupta and V. Eswaran.

18. Numerical Modelling of Atmospheric Pool Boiling by the Coupled Map Lattice Method, *Journal of Mechanical Engineering Science, Proc. IMechE Part CU.K.*, Vol.218, pp.195-205, 2004, P.S.Ghoshdastidar, S.Kabelac and Aurovinda Mohanty.
19. Planar Simulation of Bubble Growth in Film Boiling in Near-Critical Water Using a Variant of the VOF Method, *Journal of Heat Transfer ASME 019403JHR*, to appear in June 2004, D. Agarwal, S.W.J. Welch, G. Biswas, and F. Durst.
20. Backward-Facing Step Flows for Various Expansion Ratios at Low and Moderate Reynolds Numbers, *Journal of Fluids Engineering A SME*, 6185G, to appear in May, 2004, G. Biswas, M. Breuer and F. Durst.
21. Investigation of two-and Three Dimensional Models of Transitional Flow Past a Square Cylinder, *Journal of Engineering Mechanics ASCE*, Vol. 129, pp. 1320-1329, 2003, A. K. Saha, K. Muralidhar and G. Biswas.
22. Numerical Prediction of Flow and Heat transfer in a Rectangular Channel with a Built-in Circular Tube, *Journal of Heat Transfer ASME*, Vol. 125, pp. 413-421, 2003, S. Tiwari, G. Biswas, P.L.N. Prasad and S. Basu.
23. A Numerical Study of Heat Transfer in Fin-Tube Heat Exchangers using Winglet-Type Vortex Generators in Common-Flow-Down Configuration, *Progress in Computational Fluid Dynamics*, Vol. 3, pp. 32-41, 2003, S. Tiwari, P.L.N. Prasad and G. Biswas.
24. Prediction of Heat Transfer from Impinging Knife-Jets Using a Dynamic Subgrid Stress Model, *Progress in Computational Fluid Dynamics*, Vol. 3, pp. 22-31, 2003, T. Cziesla, H. Chattopadhyay, N.K. Mitra and G. Biswas.
25. Heat Transfer Enhancement in Crossflow Heat Exchangers using Oval Tubes and Multiple Delta Winglets, *International Journal of Heat and Mass Transfer*, Vol. 46, pp. 2841-2856, 2003, S. Tiwari, D. Maurya, G. Biswas and V. Eswaran.
26. Numerical Prediction of Heat Transfer in a Channel with a Built-in Oval Tube and Various Arrangements of the Vortex Generators, *Numerical Heat Transfer, Part A*, Vol. 44, pp. 315-333, 2003, V. Prabhakar, G. Biswas and V. Eswaran.
27. Effect of Thermocapillary Convection in an Industrial Czochralski Crucible: Numerical Simulation, *International Journal of Heat and Mass Transfer*, Vol. 46, pp. 1641-1652, 2003, V. Kumar, G. Biswas, G. Brenner and F. Durst.

28. Winglet- Type Vortex Generators with Common-Flow-Up Configuration for Fin - Tube Heat Exchangers, Numerical Heat Transfer, Part A, Vol. 43, pp. 201-219, 2003, A. Jain, G. Biswas and D. Maurya.
29. Three-dimensional Study of Flow Past a Square Cylinder at Low Reynolds Numbers, Int. J. Heat and Fluid Flow, Vol. 24, pp. 54-66, 2003, A. K. Saha, G. Biswas, and K. Muralidhar.
30. Nonisothermal Oil-water Flow and Viscous Fingering in a Porous Medium, Int. J. Thermal Sciences, Vol. 42, pp 665-676, 2003, Tanuja Sheorey and K. Muralidhar.
31. Visualization of the convective field above a heated cylinder by a laser schlieren technique, accepted for publication in International Communication in Heat and Mass Transfer, 2004, Atul Srivastava, P.K. Panigrahi and K. Muralidhar.
32. Buoyancy-driven convection in superimposed fluid layers in an octagonal cavity, accepted for publication in International Journal of Thermal Sciences, 2004, Sunil Punjabi, K. Muralidhar and P.K. Panigrahi.
33. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, accepted for publication in Optics and Lasers in Engineering, 2004, A. Srivastava, A. Phukan, P.K. Panigrahi and K. Muralidhar.
34. Comparison of interferometry, schlieren and shadowgraph for visualizing convection during the growth of a KDP crystal from its aqueous solution, accepted for publication in Journal of Crystal Growth, 2004, A. Srivastava, K. Muralidhar and P.K. Panigrahi.
35. Interferometric Study of Buoyancy- driven Convection in a Differentially Heated Circular Fluid Layer, accepted for publication in Heat and Mass Transfer, 2004, A. Srivastava, P.K. Panigrahi and K. Muralidhar.
36. Modeling of Transport Phenomena in a Low Pressure CVD Reactor, accepted for publication in Journal of Crystal Growth, 2004, A.K. De, K. Muralidhar, V. Eswaran and V.K. Wadhawan.
37. Influence of the Orientation of a Square Cylinder on the Wake Properties, Experiments in Fluids, Vol. 34, pp 16-23, 2003, Sushanta Dutta, K. Muralidhar and P.K. Panigrahi.
38. Three dimensional study of flow past a square cylinder at low Reynolds numbers, International Journal of Heat and Fluid Flow, Vol. 24, pp 54-66, 2003, A.K. Saha, G. Biswas and K. Muralidhar.

39. Investigation of Two and Three Dimensional Models of Transitional Flow past a Square Cylinder, ASCE Journal of Engineering Mechanics, Vol. 12911, pp 1320-1329, 2003, A.K. Saba, K. Muralidhar and G. Biswas.
40. Heat Transfer from an Array of Cylinders in Oscillatory Flow, accepted for publication in International Journal of Heat Exchangers, 2004, K. Muralidhar and K. Suzuki.
41. Comparison of 1-equation and 2-equation models for Convective Heat Transfer in Saturated Porous Media, Journal of the Institution of Engineers India, Vol. 84, pp. 104-113, 2003, Chanpreet Singh, R.G. Tathgir and K. Muralidhar.
42. Buoyancy-driven convection in super- posed air-water layers: numerical and experimental study, Institution of Engineers India Journal, Mechanical Engineering Division, Vol. 84, pp 31-35, 2003, A. Sethia, Sunil Punjabi and K. Muralidhar.
43. Effect of Radiation Losses in the Growth of Optical Crystals by the Czochralski Process, Journal of Scientific and Industrial Research, Vol. 62, pp. 1164-1175, 2003, Rajneesh Bharadwaj, Jyotirmay Banerjee and K. Muralidhar.
44. On Multistage Deep Drawing of Axisymmetric Components, ASME Journal of Manufacturing Science and Engineering, V125, 352-362, 2003, Sonis, P., Reddy, N. V., and Lal, G. K.
45. Ductile Fracture Prediction in Axisymmetric Upsetting using Continuum Damage Mechanics, Journal of Materials Processing Technology, V141, 256-265, 2003, Gupta, S., Reddy N. V., and Dixit, P. M.
46. Slicing Procedures in Layered Manufacturing: A Review, Rapid Prototyping Journal., V9,274-288, 2003, Pandey, P. M., Reddy, N. V., and Dhande, S. G.
47. Prediction of limiting drawing ratio in first draw of the flat bottom axi-symmetric components, 1h Indo-Japan Seminar on Advanced Manufacturing Systems, March 15-22, 2003, Tokyo, Japan, On Invitation, P. V. Vijaykumar, Reddy, N. V.
48. Determination of Best Pair of Parting Directions for Mould Design, 2nd Asia Youth Forum in Advanced Manufacturing, Tokyo, Japan, February 15-19, 2004, On Invitation, Pritam Chakraborty and Reddy, N. V.
49. Ductile Fracture Prediction in Open Die Forging, Proceedings of 3rd JSTP International Seminar on Precision Forging 3rd JSTP ISPF, Organized by Japan

- Society for Technology of Plasticity, Nagoya JAPAN, 6 pages., March 14-19, 2004, On Invitation, Bhanu Kishore, B., and Reddy, N. V.
50. Comparison of interferometry, schlieren and shadow graph for visualizing convection around a KDP crystal, Journal of Crystal Growth, Accepted, 2004, Srivastava, A., Muralidhar, K., and Panigrahi, P. K.
 51. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, Optics and Laser in Engineering, In Press, 2004, Srivastava, A Phukan, A., Panigrahi, P. K. and Muralidhar, K.
 52. Buoyancy-driven convection in differentially heated superposed fluid layers in a circular cavity, International Journal of Theffilal Sciences, In Press, 2004 Punjabi, S., Muralidhar, K., and Panigrahi, P. K.
 53. Laser schlieren measurement of vortical flow past a heated horizontal circular cylinder, International Communications in Heat and Mass Transfer, In Press, 2003, Srivastava, A., Dutta, S Panigrahi, P, K, & Muralidhar, K.
 54. Multi-modal forcing of the turbulent separated shear flow past a rib, ASME Journal of Fluids Engineering, Vol. 126, 1-10, 2004, Panigrahi, P. K. & Acharya, S.
 55. Variation of Activation Volume with Temperature for Fe, Si and Ge Journal: Materials Letters Volume: 57 Year: 2003, pp 4319-4322, K. K. Mani Pandey, Om Prakash, B. Bhattacharya.
 56. X-ray and ultrasonic tomography, Insight, 452003, pp 47-50, P. Munshi.
 57. A new tomographic reconstruction method for isotropic materials, Nondestructive Testing and Evaluation, 18, 2003, 171-182, S.K. Rathore, P. Munshi, N. N. Kishore.
 58. An improved method for ray tracing through curved inhomogeneities in composite materials Journal of Nondestructive Evaluation, 22, 2003, 1-9, S.K. Rathore, N.N. Kishore, P. Munshi.
 59. Experimental Investigation into Cutting Forces and Active Grain Density during Abrasive Flow Machining, Int. J. Machine Tools and Manufacture, Vol. 44, 2004, pp.201-211, V.K.Gorana, V.K.Jain and G.K.Lal.
 60. Finite Element Simulation of Abrasive Flow Machining, Proc. Inst. Mech. Engrs. England, 217 Part 8, J. Engineering Manufacture, 2003, pp. 1723-1736, R.K. Jain and V.K.Jain.

61. Process selection Methodology for Advanced Machining Processes, Journal of Advanced Manufacturing Systems, Vol. 2, June 2003, pp. 5-45, N.K. Jain, V.K. Jain.
62. An integrated and automated process planning system for Advanced Machining Environment, International Journal of Industrial Engineering, Vol. 10, June 2003, pp. 98-106, N.K.Jain, V.K.Jain.
63. Experimental Investigation into Magnetic Abrasive Finishing of Alloy Steel, Proceedings of Precision Engineering Conference held at Niigata Japan, 3-6 Nov., 2003 pp. 403-408, Dharendra K.Singh, V.K.Jain, V. Raghuram.
64. Presented two contributed papers at Int. Symposium on Electromachining held at Edinburgh U.K. 31 March to 4 April. on:
 - i. Electrochemical deep hole drilling in superalloys for turbine application by D.S.Bilgi, V.K.Jain, R.Shekhar
 - ii. Parametric study of magnetic abrasive finishing MAF process by D.K.Singh, V.K.Jain, V.Raghuram
65. Vehicular Emissions and Management: status and Issues, Invited. Paper, Indian Journal of Transport Management, No. I, Vol. 28, Jan.-Mar., 2004, B. P. Pundir.
66. Emission Reduction in Small SI Engine Generator Sets, SAE Paper 2004-01-1089, SAE SP-1863, 2004 SAE World Congress, Detroit, Michigan, March 8-11, 2004, B. P. Pundir.
67. Control of Diesel Vehicle Emissions: Experiences in India and Bangladesh, Better Air Quality BAQ 2003 International Conference, Manila, Philippines, Dec. 17-19, 2003, B. P. Pundir.
68. Trends In De-carbonisation of Transport Fuels, SAE Paper No 2004- 28-0015, Proc. Third SAE India Mobility Conference, New Delhi, Jan. 16-18, 2004, B. P. Pundir.
69. Fuels for Heavy Duty Vehicles:Emission Standards and Future Trends - An Invited Paper, 18th National Conference on IC Engines and Combustion, Trivandrum, Dec. 17 - 19, 2003, B. P. Pundir.
70. Finite element evaluation of hydrogen solubility enhancements due to thermal residual stresses in palladium-alumina composites, J Alloy Compd, Vol. No. 356, 2003, Page Nos. 9-12, R. Balasubramaniam & T .B. Flanagan.

71. Ductile fracture prediction in axisymmetric upsetting using continuum damage mechanics, J Mater Process Tech, Vol. No. 1412, 2003, Page Nos. 256-265, S. Gupta & N.V. Reddy.
72. Residual stresses in cold axisymmetric forging, J Mater Process Tech, Vol. No. 1421, 2003, Page Nos. 256-266, M.P. Mungi & S.D. Rasane.
73. Unveiling innovative design principles by means of multiple conflicting objectives. Engineering Optimization, 355, 445-470, 2003, Deb, K.
74. Classification of two-class cancer data reliably using evolutionary algorithms. BioSystems, 721-2, 2003, 111-129, Deb, K. and Reddy, A. R.
75. Multi-speed gearbox design using multi-objective evolutionary algorithms. ASME Transactions on Mechanical Design, 1253, 2003, 609-619, Deb, K. and Jain, S.
76. Optimal scheduling of casting sequence using genetic algorithms. Journal of Materials and Manufacturing Processes, 183, 2003, 409-432, Deb, K., Reddy, A. R. and Singh, G.
77. Process Improvements in Khandsari Cottage Sugar Industry in India, International Sugar Journal, Volume CVI, Issue No. 1262, February 2004, pp 94-100, Avinash Kumar Agarwal, Mukesh Sharma and L P Tewari.
78. Wear Assessment In Biodiesel Fuelled Compression Ignition Engine, Journal Of Engineering For Gas Turbine And Power ASME journal, Volume 125, Number 3, pp 820- 826, July 2003, Avinash Kumar Agarwal, Jayashree Bijwe, L M Das.
79. Effect of Biodiesel Utilisation On Wear Of Vital Parts In Compression Ignition Engine, Journal Of Engineering For Gas Turbine And Power ASME journal, Volume 125, Number 2, pp. 604-611, April 2003, Avinash Kumar Agarwal, Jayashree Bijwe, L M Das.
80. Experimental Investigations on the Effect of Liner Surface Properties on Wear in Non-Firing Engine Simulator', SAE 2004- 01-0605, SAE World Congress 2004 and SAE Special Publication SP.1820, Dhananjay Kumar Srivastav, Avinash Kumar Agarwal.
81. Published a paper in the special issue of Journal of Materials Processing Technology on Tool Wear Prediction in Turning co-authored by P. Srinivas Detailed version of the paper presented in the conference.

82. The Effect of Additives on Condensation Evaporation and Absorption Processes in LiBr-H₂O Refrigeration System, Proceedings of 3rd International Conference on Cryogenics and Refrigeration ICCR 2003, Hangzhou, China, Pise, 2003, A.T., Devotta, S., and Kant, K.
83. Effect of Additives on Flow Patterns In Horizontal Tube Falling Film Absorber of A LiBr-H₂O Refrigeration System, 2nd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 24-26, 2003, Victoria Falls, Zambia. Pise, A.T., Devotta, S., and Kant, K.
84. Heat And Mass Transfer Studies In A Horizontal Tube Falling Film Absorber, Proceedings of 21st IIR, International Congress of Refrigeration 2003, Washington USA, ICR0563, 2003, pp. 1-9, Pise, A.T., Devotta, S., and Kant, K.
85. Quantification of Surfactant by Evaporation in Absorption Chillers, 3rd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 22-24, Cape Town, South Africa. accepted, 2004, Pise, A.T., Verma, P., Devotta, S., and Kant, K.
86. Effect of Additives on Departure Site Spacings in a Horizontal Tube Falling Film Absorber, 3rd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 22-24, Cape Town, South Africa. accepted, 2004, Pise, A.T., Kant, K., and Devotta, S.
87. Ranges for Heat Flux and Temperature in Vertically Oriented PCBs Subjected to Natural Convection Cooling in Air 2nd International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, 23–26 June 2003, Victoria Falls, Zambia, Yadav, Rajiv Pandit and Keshav Kant.
88. Average Nusselt Number in Natural and Mixed Convection Heat Transfer Over Vertically Oriented PCB Sixth ISHMT- ASME Heat and Mass Transfer Conference, 2004, Yadav, Rajiv Pandit and Keshav Kant.
89. A Homogeneous Flow Model for Spiral Capillary Tubes, Proc. Int. Conf. on Air-conditioning and Refrigeration ACRECONF 2003, New Delhi, pp.344-356, 2003, H.K. Paliwal, R.K. Singh, and K. Kant.
90. A Flow model for Spiral Capillary Tubes for Refrigeration Systems Proc. Int. Conf. on Multiphase Flow Yokohama, Japan accepted, H.K. Paliwal, R.K. Singh, and K. Kant.
91. Heat Transfer Intensification in a Regenerator Using a Moving Port System, Submitted to HEFAT 2004, 3rd Int. Conf. on Heat Transfer, Fluid Mechanics and

- Thermodynamics to be held in Cape Town, South Africa from 21-24 June accepted, D.S. Murthy, S. Kumar, K.Kant and D.P. Rao.
92. Process Intensification in a Simulated Moving Bed Heat Regenerator, submitted to the ASME Heat Transfer/Fluids Engineering Summer Conf. to be held at Charlotte, N.C., USA, from July 11-15, 2004 accepted, D.S. Murthy, S.V. Sivakumar, Keshav Kant and D.P. Rao.
 93. Variational Approach for Singularity-free Path-planning of Parallel Manipulators – Int. Journal of Mech. and Mach. Theory Vol. 38 2003 pp 1165-1183. S.Sen, B.Dasgupta and A.K.Mallik.
 94. An Improved Method for ray tracing through curved Inhomogeneities in composite Materials, J. of Non destructive Evaluation, V.22, n1, March 2003, P1-8, Rathore, S.K., Kishore, N.N., Munshi, P.
 95. Ballistic Performance of Surface Modified Ceramic Body Armor Material, Society of Experimental Mechanics SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Charlotte, NC, USA, June 2-4, 2003, Shukla, A, Parameswaran, V., and Kovolyan, E., J.
 96. Effect of Confinement on the Forced Convection Heat Transfer from a Heated Square Cylinder in Crossflow, Sixth ISHMT/ASME Joint Heat and Mass Transfer Conference, Kalpakkam, India, pp. 80-85, 2004, Atul Sharma and V. Eswaran.
 97. Effect of Buoyancy on the Vortex Shedding from a Heated/Cooled Square Cylinder in Crossflow, Proc. 6th Annual CFD Symposium, Bangalore, India, CP-II, 2003, Atul Sharma and V. Eswaran.
 98. Computer Simulation of Quenching of Steel Cylinders, Proc. 17th National/6th ISHMT -ASME Heat and Mass Transfer Conference, Kalpakkam, January 5-7, 2004, Taliwal and P.S. Ghoshdastidar.
 99. Numerical simulation and optical visualization of solute transport during the initial stages of crystal growth from its solution, presented at National Laser Symposium, IIT Kharagpur, December 2003, Sunil Verma, A. Srivastava, V. Prabhakar, K. Muralidhar and V.K. Wadhawan.
 100. Convection during the growth of KDP crystals: Flow visualization and modeling, presented at the 4th Asian Meeting of Ferroelectrics AMF-4, IISc Bangalore, December 2003, Sunil Verma, K. Muralidhar and V.K. Wadhawan.
 101. Beam hardening in X-ray CT, Proceedings of the National Seminar on Non-destructive Testing, held in Thiruvananthapuram, 11-13 December, 2003, pp.183-

- 188, Mishra, K.K., Quraishi, A.M., Mishra, S., Kumar, A., Srivastava, A., Muralidhar, K. and Munshi, P.
102. Effect of Orientation of a Square Cylinder on Wake Properties at Low Reynolds Numbers, Proceedings of the 30th National Fluid Mechanics and Fluid Power Conference, held at NITK Surathkal, December 2003, pp. 455-462, S. Dutta, P.K. Panigrahi and K. Muralidhar.
 103. Interaction of Buoyancy, Thermo-capillarity and Crystal Rotation on Melt-Crystal Interface Shape during Czochralski Growth of Oxide Crystals, HMT-2004-C147, pp. 884-889, Proceedings of the 4th ASME-ISHMT Heat Transfer Conference held at Kalpakkam India in January 2004, J. Banerjee and K. Muralidhar.
 104. Heat transfer and flow characteristics of a flat surface with solid and slit ribs, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam, January 5-7, 2004, Tariq, A. and Panigrahi, P. K.
 105. Optical measurement of the convective field around a crystal growing from its aqueous solution, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam, January 5-7, 2004, Srivastava, A. and Panigrahi, P. K.
 106. Numerical prediction of flow and heat transfer past a circular tube with integral splitter plate, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam, January 5-7, 2004, Chakraborty, D., Tiwari, S., Biswas, G. and Panigrahi, P. K.
 107. Effect of orientation of a square cylinder on wake properties at low Reynold number, Effect of orientation of a square cylinder on wake properties at low Reynolds number, FMFP Conference Surathcal, 11th to 13th December, 2003, Dutta, S., Panigrahi, P. K. and Muralidhar, K.
 108. Heat transfer and flow characteristics of a rib with a slit, ASME International Mechanical Engineering Congress and R & D Expo, Washington, D.C., USA, November 15-21, IMECE2003 – 41352, 2003, Tariq, A. and Panigrahi, P. K.
 109. Numerical prediction of flow and heat transfer past a circular tube with annular fins, ASME International Mechanical Engineering Congress and R & D Expo, Washington, D.C., USA, November 15-21, IMECE2003 – 42872, 2003, Chakraborty, D., Biswas, G. and Panigrahi, P. K.
 110. Superfinishing of alloy steels using magnetic abrasive finishing process, Proceedings of Precision Engineering c.,~' Conference held at Oregon U.S.A., 26-31 October, 2003, Dhirendra. K. Singh, V.K. Jain, V. Raghuram.

111. Cutting forces and surface roughness during abrasive flow machining, Proceedings of Precision Engineering Conference held at CMTI Bangalore, pp. 298-305, 2003, V.K.Gorana, V.K.Jain, G.K.Lal.
112. On the performance of abrasive flow finishing process, Proceedings of Precision Engineering Conference held at CMTI Bangalore, pp. 216-223, 2003, Sunil Jha, V.K. Jain, S.K. Choudhury.
113. Effects of Operating Parameters on the Performance of Abrasive Flow Machining Process, Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 224-229, 2003, R. K. Jain, V. K. Jain.
114. Shaped Tube Electrochemical Machining of Cooling Holes in Inconel for Turbine Applications Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 236- 241, 2003, D. S. Bilgi, V. K. Jain, R. Shekhar, S. Mehrotra.
115. Temperature Determination on the Workpiece Surface During Diamond Surface Grinding: FEM Approach, Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 187-194, 2003, Vinod Yadav, V. K. Jain and P.M. Dixit.
116. Large-Scale Scheduling of Casting Sequences Using a Customized Genetic Algorithm. Proceedings of the 6th International Conference on Artificial Evolution EA-2003. Marseille, France, 2003, pp. 248-259, Deb, K. and Reddy, A. R.
117. Computationally effective search and optimization procedure using coarse to fine approximations. Proceedings of the Congress on Evolutionary Computation CEC-2003, Canberra, Australia, pp. 2081-2088, 2003, Nain, P. K. S. and Deb, K.
118. Revealing useful design principles by means of multiple conflicting objectives. International Congress on Evolutionary Methods for Design, Optimization and Control with Applications to Industrial Problems EUROGEN 2003. Barcelona, Spain, 2003, Deb, K., Chaudhuri, S., Jain, P., Naveen, G., and Maji, H.
119. Robust estimation of aerospace propulsion parameters using optimization techniques based on evolutionary algorithms. 54th International Astronautical Congress of the International Astro- nautical Federation, the International Academy of Astronautics, and the International Institute of Space Law, Bremen, Germany, 2003, Meena, B. R., Gupta, H., Bandyopadhyay, P., Deb, K. and Adimurthy, V.
120. Distributed Computing of Pareto-Optimal Solutions Using Multi-Objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion

- Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 535-549. Also Lecture Notes in Computer Science LNCS 2632, 2003, Deb, K., Zope, P. and Jain, A.
121. Towards a quick computation of well-spread Pareto-optimal solutions. Proceedings of the Second Evolutionary Multi- Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 222-236. Also Lecture Notes in Computer Science LNCS 2632, 2003, Deb, K., Mohan, M. and Mishra, S.
 122. Identification of Multiple Gene Clusters Using Multi- Objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 623-637. Also Lecture Notes in Computer Science LNCS 2632, 2003, Reddy, A. R. and Deb, K.
 123. Performance Scaling of Multi-objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 376-390. Also Lecture Notes in Computer Science LNCS 2632, 2003, Khare, V., Yao, X. and Deb, K.
 124. Dynamic multiobjective optimization problems: Test cases, approximation and applications. Proceedings of the Second Evolutionary Multi- Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 310-324. Also Lecture Notes in Computer Science LNCS 2632 2003, Farina, M., Deb, K., and Amato, P.
 125. Searching under multi-evolutionary pressures. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 391-405. Also Lecture Notes in Computer Science LNCS 2632, 2003, Abbass, H. and Deb, K.
 126. Numerical Investigations of Piston Cooling Using Oil Jet, SAE Paper No. 2004.28.0061, Presented in SAE 2004 India Mobility Conference, held in New Delhi, India and published in the Proceedings of Third International Conference on Synergy of Fuel and Automotive Technology for a cleaner Environment Allied Publishers, India, Mani Bijoy Varghese, Avinash Kumar Agarwal.
 127. Development and Characterization of Biodiesel from Non-edible Vegetable Oils of Indian Origin, SAE Paper No. 2004.28.0079, Presented in SAE 2004 India Mobility Conference, held in New Delhi, India and published in the Proceedings of Third International Conference on Synergy of Fuel and Automotive Technology for a cleaner Environment Allied Publishers, India, Shailendra Sinha, Avinash Kumar Agarwal.

128. Transesterification of Vegetable Oils for Biodiesel Production: Engine Testing for Performance and Emissions, presented and published in the proceedings of XVIII National Conference on I C Engines and Combustion organized by Combustion Institute India Section, PP 571-580, Avinash Kumar Agarwal, Sanjeev Garg, Nitin Kaistha, Shailendra Sinha.
129. Characterisation and utilisation of Biodiesel as an Alternative Fuels for Diesel Engines, presented and published in the proceedings of A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation meeting on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Bangalore, Avinash Kumar Agarwal, Sanjeev Garg.
130. Transesterification of Vegetable oils for Biodiesel Production: Process considerations, Present status and Future Challenges, presented and published in the proceedings of A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation meeting on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Bangalore, Sanjeev Garg, Avinash Kumar Agarwal.
131. Lubrication Oil Tribology Of A Biodiesel-Fuelled CI Engine presented and published in the Proceedings of ASME. ICED, 2003, Spring technical conference, May 2003, Salzburg, Austria, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Cluster formation and anomalous fundamental diagram in an ant trail model, K. Nishinari, *Phy. Rev. E*, 67, 036120-1, 2003, D. Chowdhury and A. Schadschneider.
2. Dietrich Stauffer: unconventional in science and life, *Physica Scripta*, T106, 7, 2003, D. Chowdhury.
3. Traffic flow of interacting self-driven particles: rails and trails, vehicles and vesicles, *Physica Scripta*, T106, 13, 2003, D. Chowdhury.
4. Food-web-based unified model of macro- and microevolution, *Phy. Rev. E*, 68, 041901-1, 2003, D. Stauffer.
5. Unified micro- and macro- evolution of eco-systems: Self-organization of a dynamic network, *Physica A*, 336, 102, 2004, D. Stauffer and D. Chowdhury.
6. Magnetic scattering in Fe-Cr multiplayer in the ferromagnetic state at low temperatures, R.S. Patel, *J. Appl. Phys.* 93, 7684, 2004, A.K. Majumdar, A.F. Hebard and D. Temple.

7. Further evidence of electron-electron interaction in $\text{Ni}_{0.5}\text{Zr}_{0.51-x}\text{Al}_x$ amorphous alloys, *J. Magn. Mater.*, 263, 26, 2003, A.K. Majumdar.
8. Coexistence of glassy antiferromagnetism and giant magnetoresistance in Fe/Cr multilayer structures, *J. Magn. Mater.*, 263, 32, 2003, N. Theodoropoulou, A.F. Hebard, M. Gabay, A.K. Majumdar, C. Pace, J. Lannon, and D. Temple.
9. Extraordinary Hall effect in Fe-Cr giant magnetoresistive multilayers, *Phys. Rev. B* 68, 144405, 2003, P. Khatua, A.K. Majumdar, A.F. Hebard and D. Temple.
10. Divalent dopant criterion for suppression of JT distortion, *Phys. Rev. B* 68, 012101, 2003, R. Prasad, R. Benedek et al.
11. Symmetry breaking and structural distortions in XH_4 , *Phys. Rev. A* 69, 033201, 2004, D. Balamurugan, M.K. Harbola and R. Prasad.
12. Potential Fluctuations and metastabilities in hydrogenated amorphous silicon, *J. Mater. Sci.: Mater. Electr.*, 14, 703 2003, S.C. Agarwal.
13. Surface effects in nanocrystalline silicon, *J. Mater. Sci.: Mater. Electr.*, 14, 797, 2003, N.P. Mandal and S.C. Agarwal.
14. Light and Thermally induced metstabilities in nanocrystalline silicon, *Mater. Res. Soc. Symp. Proc.*, 762, Spring 2003, San Francisco, N.P. Mandal and S.C. Agarwal.
15. Influence of surface treatments on nanocrystalline silicon, *thin Solid Films*, 451-452, 357, 2004, N.P. Mandal, S. Dey and S.C. Agarwal.
16. Arresting photodegradation of porous silicon by a polymer coating, *Solid State Communications*, 129, 183, 2004, N.P. Mandal, Ashutosh Sharma and S.C. Agarwal.
17. Additional considerations in the definition and renormalization of non-covariant gauges, *Mod. Phys. Lett. A* 18, 843-852, 2003, S.D. Joglekar.
18. Some observations on Interpolating and non-covariant gauges, *J. Phys.* 61, 949, 2003, S.D. Joglekar, *Pramana*.
19. Causality violation in non-local quantum field theory, *Int. J. Mod. Phys. A* 19, 2004, A. Jain and S.D. Joglekar.
20. Axial and other non-covariant gauges and FFBRs transformations, *Proc. XIV DAE Symp.* 100-113, 2003, S.D. Joglekar.

21. Absence of non-local counterterms in the gauge-boson propagator in the Axial-type gauges, , Proc. XIV DAE Symp. 151-154, 2003, S.D. Joglekar.
22. Variable-frequency EPR study of Mn^{2+} -doped $NH_4Cl_{0.9}I_{0.5}$ single crystal at 9.6, 36 and 249.9 GHz: Structural phase transition, J. Magn. Reson. 160, 131, 2003, S.K. Misra, S.I. Andronenko, G. Rinaldi, P. Chand, K.A. Earle and J.H. Freed.
23. Effect of Bi_2O_3 on EPR, optical transmission and DC conductivity of vanadyl doped alkali bismuth borate glasses, J. Phys. Chem. Solids 64, 2281, 2003, A. Agarwal, V.P. Seth, P.S. Gahlot, S. Khasa and P. Chand.
24. Electron paramagnetic resonance, optical spectra and DC conductivity studies of vanadyl doped Bi_2O_3 -BaO- B_2O_3 glasses, Rad. Eff. & Def. Solids 158, 655, 2003, P.S. Gahlot, V.P. Seth, A. Agarwal, S. Khasa and P. Chand.
25. Effect of Bi_2O_3 on electron paramagnetic resonance, optical transmission and DC conductivity in vanadyl doped Bi_2O_3 - K_2O - B_2O_3 glasses, Materials Chem. & Phys. 85, 215, 2004, A. Agarwal, V.P. Seth, P.S. Gahlot, S. Khasa and P. Chand.
26. Field theoretic calculation of energy cascade rates in nonhelical magnetohydrodynamic turbulence, Pramana – J. 577, 2003, M.K. Verma.
27. Energy fluxes in helical magnetohydrodynamics and dynamo action, Pramana – J. 61, 707, 2003, M.K. Verma.
28. Wavelet transform of breast tissue fluorescence spectra: A technique diagnosis of tumors, IEEE JSTQE, 92, March/April 2003, Nidhi Agarwal, Shard Gupta, Bhawna, Asima Pradhan, K. Vishwanathan and P.K. Panigrahi.
29. Recovery of turbidity free fluorescence from measured fluorescence: An experiential Approach, Optics Express, 11, 24, 3320-3330 2003, N.C. Biwal, S. Gupta, N. Ghosh and Asima Pradhan.
30. Experimental and theoretical investigation of fluorescence photobleaching and recovery in human breast tissues and tissue phantoms, Applied Optics, 43, 5 2004, S. Gupta, Bhawna, Pallab Goswami, Asha Agarwal and Asima Pradhan.
31. Detection of milk adulteration using fluorescence spectroscopy, Proc. Nat. laser. Symp. 2003, Sharad Gupta, N.C. Biswal and Asima Pradhan.
32. Extraction of biochemical information from intrinsic fluorescence, Proc. Nat. Laser Symp. 2003, N.C. Biswal, Sharad Gupta and Asima Pradhan.

33. Microstructure of N^+ ion beam induced epitaxial crystallized Si, Nucl. Instr. And Meth. B216, 313, 2004, P.K. Sahoo, S. Gupta, A. Pradhan and V.N. Kulkarni.
34. Sequential pulsed laser deposition of $Cd_xZn_{1-x}O$ alloy thin films for engineering ZnO band gap, Appl. Phys. A 78, 37, 2004, P. Misra, P.K. Sahoo, P. Tripathi, V.N. Kulkarni, R.V. Kandedkar and L.M. Kukreja.
35. Co-doped $La_{0.5}Sr_{0.5}TiO_3$ A d: Diluted magnetic oxide system with high Curie temperature, Appl. Phys. Lett. 83, 2199, 2003, Y.G. Zhao, S.R. Shinde, S.B. Ogale, J. Higgins, R.J. Choudhary, V.N. Kulkarni, R.L. Greene, T. Venkatesan, J.P. Buban, N.D. Browning, S. Das Sarma and A.J. Millis.
36. High temperature ferromagnetism with a giant magnetic moment in transparent Co-doped SnO_2 , , Phy. Rev. Lett. 91, 077205, 2003, S.B. Ogale, R.J. Choudhary, J.P. Buban, S.E. Lofland, S.R. Shinde, S.N. Kale, V.N. Kulkarni, J. Higgins, C. Lanci, J.R. Simpson, N.D. Browning, S.D. Sarma, H.D. Drew, R.L. Greene and T. Venkatesan.
37. Pulsedelectron-beam deposition of transparent conducting SnO_2 films and study of their properties, R.J. Choudhary, S.B. Ogale, S.R. Shinde, V.N. Kulkarni, T. Venkatesan, K.S. Harshavardhan and M. Strikovski B. Hannover, Appl. Phys. Lett. 84, 1483, 2004.
38. Emission spectroscopy of laser ablated Si plasma related to nanoparticle formation, Appl. Surf. Sci. 222, 382, 2003, V. Narayanan and R.K. Thareja.
39. Simplified model to account for dependence of ablation parameters on temperature and phase of the ablated material, Appl. Surf. Sci. 222, 293, 2003, Sushmita R. Franklin and R.K. Thareja.
40. Photo-excited photonic characteristics of ZnO thin films deposited by laser ablation method, Elect. Eng. Japan 144, 1, 2003, T. Ohshima, T. Ikegami, K. Ebihara and R.K. Thareja.
41. Preparation of ZnO thin films on various substrates by pulsed laser deposition, T. Ohshima, Surf. Coating Tech. 169/170, 517, 2003, R.K. Thareja, T. Ikegami and K. Ebihara.
42. Synthesis of p-type ZnO thin films using co-doping techniques based on KrF excimer laser deposition, Thin Solid Films, 435, 49 2003, T. Ohshima, T. Ikegami, K. Ebihara, J. Asmussen and R.K. Thareja.

43. Dependence of ablation parameters on temperature and phase of the ablated material, *J. Appl. Phys.* 93, 5763, 2003, S. Franklin and R.K. Thareja.
44. Photoluminescence from silicon nano-particles synthesized by pulsed laser ablation, *Mod. Phys. Lett. B* 17, 121, 2003, V. Narayanan and R.K. Thareja.
45. Phase transformation in room temperature pulsed laser deposited TiO₂ thin films, *Appl. Surf. Sci.* 206, 137, 2003, A.K. Sharma, R.K. Thareja, U. Willer and W. Schade.
46. Pulsed laser deposited ZnO films for UV laser and nonlinear medium, *ISRAPS Bull.* 13, 03, 2003, R.K. Thareja and A. Mitra.
47. Two Graviton Production at e⁺e⁻ and Hadron Hadron Colliders in the Randall-Sundrum Model, *Journal of High Energy Physics*, 0403, 011, 2004, P. Jain and S. Panda.
48. QCD form-factors and hadron helicity nonconservation, *Physical Review D* 69, 053008, 2004, J. P. Ralston and P. Jain.
49. Large scale alignment of optical polarizations from distant QSOS using coordinate invariant statistics, *Monthly Notices of the Royal Astronomical Society* 347, 394, 2004, P. Jain, G. Narain and S. Sarala.
50. Brane-production and the neutrino-nucleon cross section at ultrahigh energies in low scale gravity models, *International Journal of Modern Physics D*, 129, 1593, 2003, P. Jain, S. Kar and S. Panda.
51. The proton electromagnetic form-factor F₂ and quark orbital angular momentum, *Pramana – J.* 61, 987, 2003, P. Jain and J. P. Ralston.
52. Rotating Bose-Einstein condensates with a large number of vortices, *Phys. Rev.* A67, 035601, 2003, V. Subrahmanyam.
53. Domain-wall dynamics of Ising spin chain in a transverse magnetic field, *Phys. Rev.* B68, 212407, 2003, V. Subrahmanyam.
54. Entanglement Sharing in one-particle states, *Phys. Rev.* A67, 052304, 2003, A. Lakshminarayan and V. Subrahmanyam.
55. Quantum Entanglement in Heisenberg antiferromagnets, V. Subrahmanyam, *Phys. Rev.* A69, 022311, 2004, V. Subrahmanyam.

56. Entanglement dynamics and quantum state transport in spin chains, V. Subrahmanyam, Phys. Rev. A69, 034304, 2004, V. Subrahmanyam.
57. Synchronization regimes in chaotic optical communication systems, IEE Proc. Optoelectronics, 150, 191-198, 2003, I. Pierce, I.A. Valle, S. Sivaprakasam, P. Rees, P.S. Spencer and K.A. Shore.
58. Nullified time-of-flight lead-lag in synchronization of chaotic external cavity laser diodes, Optics Letters, 28, 1397-1399, 2003, S. Sivaprakasam, J. Paul, P.S. Spencer, P. Rees and K.A. Shore.
59. Anticipated chaos in a nonsymmetric coupled external-cavity-laser system, Phys. Rev. A 68, 033818, 2003, P. Rees, P.S. Spencer, I. Pierce, S. Sivaprakasam and K.A. Shore.
60. Comparison of closed-loop and open loop feedback schemes of message decoding using chaotic laser diodes, Optics Letters, 28, 2168-2170, 2003, M.W. Lee, J. Paul, S. Sivaprakasam and K.A. Shore.
61. Polarisation resolved relative intensity noise measurements of a vertical cavity surface emitting laser subjected to strong optical feedback, IEEE Photonics Tech Letters, 16, 9-11, 2004, S. Sivaprakasam, S. Bandyopadhyay, Y. Hong, P.S. Spencer and K.A. Shore.
62. Dual-channel chaotic optical communications using external-cavity semiconductor lasers, J. Opt. Soc. America, 21, 514-521, 2004, J. Paul, S. Sivaprakasam and K.A. Shore.
63. Transport studies on Mechanochemically synthesised AgI-Ag₂O-CrO₃ superionic system, Solid State Ionics 159 [3-4] 369-379, 2003, A. Dalvi and K. Shahi.
64. Characterization and electrochemical cell characteristics of mechanochemically synthesized AgI-Ag₂O-MoO₃ amorphous superionic system, J. Phys. Chem. Solids 64[5], 813, 2003, A. Dalvi and K. Shahi.
65. Black holes in brane worlds, Pramana – J. 62, 707, 2004, M.S. Modgil, S. Panda and G. Sengupta.
66. Many-electron problem in terms of the density: from Thomas-Fermi to modern density-functional theory, Chem. 2, 301, 2003, M.K. Harbola and A. Banerjee, J. Theoret. And Comp.

67. Helium-like impurities in semiconductor quantum-dots, *J. Phys.: Condensed Matter* 16, 1679, 2004, R.K. Pandey, M.K. Harbola and V.A. Singh.
68. To scale or not to scale: self-capacitance, Hubbard U and quantum dot size? *Indian J. Phys. PT-A*, 78A, 61, 2004, V.A. Singh, R.K. Pandey and M.K. Harbola.
69. Symmetry breaking and structural distortions in charge XH_4 $X = C, Si, Ge, Sn$ and Pb molecules, *Phys. Rev. A* 69, 033201, 2004, D. Balamurugan, M.K. Harbola and R. Prasad.
70. Exchange-correlation potentials in ground and excited-state Kohn-Sham theory, *Phys. Rev. A* 69, 042512, 2004, M.K. Harbola.
71. Gain without population inversion in V-type system driven by a frequency modulated field, *Phys. Rev. A* 65, 033417-033428, 2003, H. Wanare.
72. Driven diffusive system with nonlocal perturbation, *Journal of Physics A: Math. Gen.* 37, 51, 2004, Sutapa Mukherjee.
73. Influence of surface states on the photoluminescence from Silicon nanostructures, *J. Appl. Phys.* 93, 1753, 2003, Md. N. Islam, Satyendra Kumar.
74. Application of spectroscopic Ellipsometry to probe the environmental and photo-oxidative degradation of poly p-phenylenevinylene PPV, *Synthetic Metals*, 139, 751, 2003, Satyendra Kumar, A.K. Biswas, V.K. Shukla, A. Awasthi, R.S. Anand, and J. Narain.
75. Optical characterization of polysilane thin films, *Synthetic Metals*, 139, 835, 2003, A. Sharma, Deepak, Satyendra Kumar, M. Katiyar, A. K. Saxena, A. Ranjan and R. K. Tiwari.
76. Degradation in a Methyl-phenyl Co-Polymeric Polysilane for LED Applications, *Mat. Res. Soc. Symp. Proc.* 769, 2003, Asha Sharma, Deepak and Monica Katiyar, Satyendra Kumar, V. Chandrasekhar, A. K. Saxena, A. Ranjan and R. K. Tiwari.
77. Anodization time dependent photoluminescence intensity of porous silicon, *Mat. Res. Soc. Symp. Proc.* 797 w5.20.1, 2004, Md. N. Islam and Satyendra Kumar.
78. Stress on Porous Silicon Layers attached to Silicon Substrates, in *Physics of Semiconductor Devices IWPSD-2003* Eds K.N. Bhat and A. DasGupta, Narosa New Delhi, p 289-291, 2004, M.N. Islam and Satyendra Kumar.

79. Effect of Porosity on Photoluminescence Intensity from Porous Silicon Layers, M.N. Islam and Satyendra Kumar, in Physics of Semiconductor Devices IWPSD-2003 Eds, Narosa New Delhi, p 950-952, 2004, K.N. Bhat and A. DasGupta.
80. Coulomb gap in one-dimensional disordered electronic systems, D. Sen, Phys. Rev. B 69, 132416, 2004, A. Dutta, L. Fritz.
81. Enhancement of ferromagnetism and metallicity in Ru-doped layered manganite system $\text{La}_{1.2}\text{Ca}_{1.8}\text{Mn}_{2-x}\text{Ru}_x\text{O}_7$ $x = 0, 0.1, 0.5, 1.0$, Journal of Applied Physics, 93, 8331, 2003, N. Sudhakar, K.P. Rajeev and A.K. Nigam.
82. Single photon signals of warped quantum gravity at a high energy e+e- collider, , Journal of High Energy Physics, 310, 20, 2003, Santosh Kumar Rai, Sreerup Raychaudhuri.
83. Bhabha Scattering with Radiated Gravitons at a Linear Collider, Physical Review D 68, 95005, 2003, Sukanto Dutta, Partha Konar, Biswarup Mukhopadhyaya and Sreerup Raychaudhuri.
84. Working group report: Beyond the Standard Model, Journal of Physics, 60, 395, 2003, Biswarup Mukhopadhyaya and Sreerup Raychaudhuri, Pramana.
85. Influence of hydrogen plasma treatment on boron implanted junctions in silicon, J. Vac. Sci. Technol. B 21, 781, 2003, Sanjay Rangan, Mark Horn, S. Ashok and Y. N. Mohapatra.
86. Spectroscopic Photovoltage Characterization of PPV Thin Films Suitable for PLED Applications, Mat. Res. Soc. Proc. Vol. 771, p L7.4.1., 2003, G.S.Samal, A.K.Biswas and Y.N.Mohapatra.
87. Temperature Dependence of Photoluminescence Spectra of PPV and CN-PPV Thin Films, Proceedings 2nd International conference on materials for advanced technologies & IUMRS-International conference in Asia 2003 December 7-12, Singapore, G.S.Samal, A.K.Biswas, Y.N.Mohapatra.
88. Laser Induced degradation Studied of PPV and CN-PPV Thin Films using Photoluminescence, Proceedings International conference on materials for advanced technologies & IUMRS-International conference in Asia 2003 December 7-12, Singapore, D. Ghosh, G.S.Samal, A.K.Biswas, Y.N.Mohapatra.
89. Internal Electric Field and Contact Potential in Polymer Light Emitting diode structure studied by Electroabsorption Spectroscopy, Proceedings Twelfth International Workshop on The Physics of Semiconductor Devices, Indian Institute

- of technology Madars, Chennai, India. December 16-20, 2003, G.S.Samal, Subhadip Mitra, Rahul Dubey, and Y.N.Mohapatra.
90. DLTS studies of localized states in organic – inorganic semiconductor heterostructures, Proceedings Twelfth International Workshop on The Physics of Semiconductor Devices, Indian Institute of technology Madars, Chennai, India. December 16-20, 2003, Samarendra P. Singh, Y. N. Mohapatra, Q. Mohammad, and S. S. Manoharan. Awarded the Best Poster Prize at the Conference.
 91. Metastability and Non-Debye Relaxation Phenomena due to defect clusters and disorder in semiconductors, Proceedings of ICCES 2003, Advances in Computational and Experimental Engineering and Sciences, 2003, Y.N. Mohapatra, Samarendra P. Singh, P.K. Giri and Vineet Rao.
 92. Anomalous density of states in a metallic film in proximity with a superconductor, Phys. Rev. B 69, 10514 , 2004, Anjan K. Gupta, L. Cretinon, N. Moussay, B. Pannetier and H. Courtois.
 93. STM spectroscopy of the local density of states in hybrid normal metal-superconductor bilayers, Physica C 404, 103, 2004, L. Cretion, Anjan Gupta, B. Pannetier and H. Courtois. Proc. Third European Conf on Vortex Matter in Superconductors at Extreme Scales and Conditions – Edited by V.V. Moshchalkov, E.H. Brandt and A.S. Alexandrov.
 94. A controlled process to synthesize nanocrystalline zinc ferrite of desired crystallite size, Powder Technology, 132, 131, 2003, A. Kundu, S. Anand and H.C. Verma.
 95. Mossbauer and positron annihilation studies in plastically deformed $\text{Fe}_{72-x}\text{Al}_{28}\text{Ti}_x$ $x=0,2,9$ alloys, J. Mag. Magn. Mater., 263, 307, 2003, B. Pandey, P.M.G. Nambissan, S. Suwas and H.C. Verma.
 96. Systematics of Mossbauer absorption areas in ordinary chondrites and applications to a newly fallen meteorite in Jodhpur, India, Meteoritics and Planetary Science, 38, 963-967, 2003, H.C. Verma, Kavi Jee and R.P. Tripathi.
 97. Magnetic properties of partially inverted zinc ferrite synthesized using a new coprecipitation technique using urea, Phys. Letters 311, 410 , 2003, A. Kundu and H.C. Verma.
 98. Positron lifetime spectroscopic studies of nanocrystalline ZnFe_2O_4 , P.M.G. Nambissan, J. Appl. Phys. 93, 6320 , 2003, C. Upadhyay and H.C. Verma.

99. Mossbauer studies of Fe-Cu alloys prepared by electrodeposition, *J. Magn. Magn. Mater.*, 270, 186-193, 2004, M.K. Roy and H.C. Verma.
100. Identification of positron trapping sites in nanocrystalline ZnFe_2O_4 by coincidence Doppler broadening measurements, *Mater. Sci. Forum*, 445-446, 162-164, 2004, P.M.G. Nambissan, C. Upadhyay and H.C. Verma.
101. Perpendicular-to-plane magnetoresistance in $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3/\text{LaNiO}_3$ superlattices: The effects of interfacial disorder and spin diffusion on charge transport, *Mod. Phys. Lett. B* 17, 1517-1526, 2003, P. Padhan and R.C. Budhani.
102. Miniature Hall sensor based ac susceptometer for measurements of vortex and superfluid dynamics in superconducting films, *Rev. Sci. Instru.* 751: 141-145, 2004, K. Senapati, S. Chakrabarty S, L.K. Sahoo and R.C. Budhani.
103. Overdamped interlayer exchange coupling and disorder-dominated magnetoresistance in $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3/\text{LaNiO}_3$ superlattices, *Europhys. Lett.* 635: 771-777, 2003, P. Padhan, R.C. Budhani and R.P.S.M. Lobo.
104. Spherical perfect lens: Solutions of Maxwell's equations for spherical geometry, *Phys. Rev. B* 69, Art. No. 115115, 2004, S.A. Ramakrishna and J.B. Pendry.
105. Ferromagnetism in a dilute magnetic semiconductor: Generalized RKKY interaction and spin wave excitations, *Phys. Rev. B* 68 23, Art. No. 235208, 2003, A. Singh, A. Datta and S.K. Das.
106. To scale or not to scale: self-capacitance, Hubbard U and quantum dot size? *Indian J. Phys. PT-A*, 78A1, 61-65, 2004, V.A. Singh, R.K. Pandey and M.K. Harbola.
107. Phase space description of the production of quark gluon plasma in heavy-ion collisions, *Pramana – J. Physics* 61, 1045, 2003, A. Jain and V. Ravishankar.
108. Production mechanism of quark-gluon plasma in heavy-ion collisions, A. Jain and V. Ravishankar, *Phys. Rev. Lett.* 91, Art. No. 112301, 2003,
109. Special issue: Proceedings of the Workshop on Quantum Chromodynamics QCD 2002, *Pramana – J. Phys.* 61, 785, 2003, P. Jain, S.D. Joglekar and V. Ravishankar.

Conferences Attended Outside IIT Kanpur

CENTRE FOR LASER TECHNOLOGY

1. Nullified time-of-flight lead-lag in synchronization of chaotic external cavity laser diodes', National Laser Symposium, Dec. 22-24, IIT – Kharagpur, S. Sivaprakasam, J.Paul and K.A.Shore.

DEPARTMENT OF AEROSPACE ENGINEERING

1. 27th Indian Social Science Congress, I.I.T. Kharagpur: presented a Contributed paper, Dec. 03-07, 2003, Ghosh Kunal.
2. Global Convention on Peace and Non-Violence, Organised by Gandhi Smriti & Darshan Samiti, New Delhi, at the invitation/hospitality of the Samiti, Jan. 31-Feb.01, 2004, Ghosh Kunal.
3. 17th Canadian Congress of Applied Mechanics, CANCAM-03, The Univ. of Calgary, Alberta, Canada presented a contributed paper, June 1-6, 2003, Ghosh Kunal,
4. SEM Conference Charlotte, Baorth Carolina, USA, presented two contributed papers, June 2-4, 2003, Iyengar N.G.R.
5. IMPLAST 2003, 8th International Symposium on Plasticity and Impact, Mechanics, Vigyan Bhawan, presented an invited Paper and also Chaired a session, March 16-19, 2003, Iyengar N.G.R.
6. ISAMPE National Conference on Composites and National Seminar on Aerospace Structures, Bangalore. Presented a technical Paper and Chaired a session, Sept.5-6, 2003, N.G.R.Iyengar
7. 11-th AIAA/ASME/AHS Adaptive Structures Conference, Norfolk, Virginia, USA, April 2003, C.Venkatesan.
8. Invited talk: 15-th Annual General Meeting of Materials Research Society of India, BHU, Feb. 2004, C.Venkatesan.
9. ASME/JSME Joints Fluids Engg., Conference, Honolulu, Hawaii, USA, July 2003, R.K. Sullerey.
10. 30th National Conf. On Fluid Mechanics & Fluid Power (FMFP), National Institute of Technology Suratkal, India Dec., 11-13 2003, R.K. Sullerey.

11. 6th Annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August, 11-13, 2003, S.Mittal.
12. International Indian-Russian Workshop, High Performance Computing in Science and Engineering, HPC SE 2003, Moscow, Russia, 2003, S.Mittal.
13. Seventh U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, S.Mittal.
14. Academic Summit, Microsoft Research, Bangalore, India, 2004, S.Mittal.
15. High Performance Computing, Cornell Theory Center, Cornell, USA. Jan.28-29, 2004, S.Mittal.
16. 18th National Conference on IC Engines & Combustion, Chairing a session & Contributing two papers, December, 17-19, 2003, D. P. Mishra.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Attended the sixth national symposium in Chemistry at IIT Kanpur Feb 6-8, 2004, R. Gurunath.
2. Attended the symposium on “Molecules, Machines and Networks” organized by the National Centre for Biological Sciences (NCBS), Bangalore from Jan 2004 5th to 9th, R. Sankararamakrishnan.
3. Attended short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash.
4. National Symposium on Expanding Horizons, New Delhi, organized by Delhi University in Oct. 2003, B. Prakash.
5. CSIR Expert committee meeting scheduled on 14th & 15th May for interviewing SRFs/RAs invited by Rajesh Luthra, Head, H.R.D. Group, Council of Scientific & Industrial Research, CSIR Complex, Library Avenue, Pusa, New Delhi 110 012, B. Prakash.
6. Poster presented at the Annual meeting of the International Senior Research, Fellows organized by the Wellcome Trust at NCBS. Date: March 25-28, 2004, K. Subramaniam.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Overview of membrane Technology for Effluent Treatment, Indo-French Seminar of Emerging Technologies for water and waste water management, 9-12 February, 2004 at India Habitat Centre, New Delhi, P.K. Bhattacharya.
2. Reuse of FDM Components by Solution-Casting Technique, International Symposium on Rapid-Prototyping & Tooling, HAL, Bangalore, 6-7 June, 2003, K. Siva Prasad, S.V. Satyanarayana, P.K. Bhattacharya and S.G. Dhande.
3. Workshop on Biodiesel Fuels, SuTRA, IISc Bangalore (funded by DST, Government of India), August 30-31, 2003, Presented contributed paper, S. Garg.
4. 'Process Safety and Industrial Explosion Protection', Nurnberg, Germany, March 16 – 18, 2004. Presented two invited papers, J.P. Gupta.
5. Chaired one session: IChE Annual Meeting (Chemcon 2003), RRL Bhubaneswar, Dec 2003, S.K. Gupta.
6. National Conference on Carbon 2003, Nov. 20-21, 2003, DMSRDE, Kanpur, D. Kunzru.
7. CHEMCON-2003, Bhubaneswar, Dec. 19-22, 2003, Chair of one session, contributed paper, D. Kunzru.
8. 53rd Canadian Chemical Engineering and PRES'03 Conference, Hamilton, Ontario, Canada, October 26-29, 2003. Presented paper entitled Process Intensification in a Trickle-bed Reactor, V. Verma, D.P. Rao and M. S. Rao.
9. CHEMCON-2003, Bhubaneswar, Dec. 19-22, 2003, presented paper entitled Effect of Ga, Al and Cr on Si-supported V-MgO Catalysis during oxidative dehydrogenation of propane by B. Ravi Kumar and M. S. Rao.
10. Self-Organized patterning of soft materials, National Seminar on Science and Technology of Nanomaterials, Central Glass and Ceramic Research Institute, Kolkata, 2003, A. Sharma.
11. Self-organization in thin films of soft materials, Symposium on Some Novel Trends in Chemistry Teaching and Inorganic Chemistry Research, University of Rajasthan, Jaipur, 2003, A. Sharma.
12. Self-organized patterns in confined films, JSPS-DST Symposium on Surfaces and Interfaces for Nanostructured Materials, University of Tokyo, 2003, A. Sharma.

13. Self-organized patterns in thin soft films, Symposium on Surface Phenomena and Free Surface Flows, Tel Aviv, Israel, 2003, A. Sharma.
14. Self-organized patterns in thin soft films, International Conference on Nano Science and Technology, ICONSAT 2003, Kolkata, 2003, A. Sharma.
15. Adhesion and Debonding of elastic films: Patterns, forces and metastability, India-Japan Workshop on Surfaces and Interfaces, Saha Institute, Kolkata, 2003, A. Sharma.
16. Self-organization in Soft Nanosystems, 91st Indian Science Congress, Chandigarh, 2004, A. Sharma.
17. Indo-US Workshop on Futuristic Manufacturing, IIT Kanpur, 2004, A. Sharma.
18. Indo-US Workshop on Nanoscale Materials, Puri, April 2004, A. Sharma.

DEPARTMENT OF CHEMISTRY

1. Delivered an invited lecture at the meeting 'Physics at the interface of Chemistry and Biology', held at S N Bose Centre, Kolkata, on December 08, 2003, A. Chandra.

DEPARTMENT OF CIVIL ENGINEERING

1. The 2003 American Society of Mechanical Engineers Pressure Vessels and Piping Conference, Attended, Cleveland, Ohio, USA, July 2003, Chakrabarti, S.K
2. The 19th International Conference on Solid Waste Technology and Management, Philadelphia, U.S.A., Session Chairman and paper presentation by Chandra, S.
3. Estimation of parameters in groundwater using Artificial Neural Networks, Proceedings, International Conference on: Water and Environment, Planning, Development, Utilization, Conservation and Management, Bhopal, December 15-18, 2003, Singh, R.M., Datta B., and Jain, A.
4. First Indian International Conference on Artificial Intelligence: IICAI03, December 18-20, 2003, Hyderabad, India, Presented Two Contributed Papers, Jain, A.
5. One Day Workshop on Bridge Scour, River Training, and Protection Works (WOBSRIT-PROW-03), Organized by IIT Roorkee, October 11, 2003, New Delhi, India, Jain, A.

6. River Basin Management 2003: Second Intl Conf. on River Basin Management, 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Presented Two Contributed Papers, Jain, A.
7. Workshop on Seismic Risk Management for Countries of the Asia Pacific Region, Bangkok, December 2003, World Seismic Safety Initiative, Jain, S.K.
8. Ad Hoc Experts' Group Meeting on Earthquake Safety in Schools, Organization for Economic Cooperation and Development (OECD), Paris (France), February 2004, Jain, S.K.
9. Indo German Workshop on Earthquake Engineering, IIT Madras, 15 – 16 February 2004, Jain, S.K and Murty C.V.R.
10. Map India – 2004, Taj Palace New Delhi, 28-30 January 2004, paper presentation by Lohani B.
11. National Workshop on Earthquake Risk Reduction – The Gujarat Experience, 31 January 2004, Ahmedabad, Murty, C.V.R.
12. Geotechnical Engg. For Infrastructure Development, IGC-2003, Roorkee, Dec.18-20, 2003, Patra N.R.
13. 3rd Latin American Congress of Sedimentology, June 8 - 11, 2003, Belém - Pará – Brazil, Sinha Rajiv.
14. XVI INQUA Congress, July 23-30, 2003, Reno, USA, Sinha Rajiv.
15. Panelist for Group Discussion Indo-French Seminar on Emerging Trends in Water and Wastewater Management, New Delhi, 12 Feb., 2004, Raymahashay, B.C.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. High Performance Computing in Science and Engg, Moscow, Russia, June 2003, Contributed Paper and Session Chair, S.K Aggarwal.
2. Sun HPC Consortium Forum on High Performance Computing, Heidelberg, Germany, June 2003, S.K Aggarwal.
3. International Supercomputing Conference, Heidelberg, Germany, June 2003, S.K Aggarwal.
4. Microsoft Faculty Research Summit, Seattle, USA, July 2003, S.K Aggarwal.

5. Intel Asia Academic Forum, Shenzhen, China, Oct 2003, S.K Aggarwal.
6. Software Engineering 2004, Innsbruck, Austria, Feb 2004, Contributed Paper and Session Chair, S.K Aggarwal.
7. HP Consortium for Advanced Scientific and Technical Computing, Brisbane, Australia, March 2004, S.K Aggarwal.
8. Foundations of Software Technology and Theoretical Computer Science, IIT Bombay, December 2003, Attended, S.Biswas.
9. CIT 2003, Bhubaneswar, Dec 2003, Contributed papers, R.K Ghosh.
10. International Workshop on Mobile Commerce, Bhubaneswar, Dec 2003, Contributed presentations, R.K Ghosh.
11. IWDC 2003, Kolkata, Dec 2003, Contributed paper, R.K Ghosh.
12. IX Summit on Machine Translation, New Orleans, Sep 2003, Attended, Ajai Jain.
13. Indo-German Workshop on Language Technology, Chennai, Feb 2003, Attended, Ajai Jain.
14. ArchCon Satyam Annual Conference on Architecture, June 2003, Conference Chair, T.V Prabhakar.
15. Asian'03, Bombay, Dec 2003, Attended, Anil Seth.
16. FSTTCS 2003, IIT Bombay, Dec 2003, Attended, Anil Seth.
17. TECS Week, TRDDC Pune, Jan 2004, Attended, Anil Seth.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. National Power Electronics Conference, NPEC, Mumbai, October, 2003. Chaired a Session, P. Sensarma.
2. Signal Processing Approach to Brain and Consciousness (invited paper), International Conf. On Intelligent Signal Proc. And Robotics, Indian Institute of Information Technology, Allahabad, Feb. 2003, 2004, G.C. Ray and Gautam Das.
3. International Workshop on Physics of Semiconductor Devices 2003, IIT Madras, Chennai, Dec. 16-20, 2003, R.S. Anand.

4. Int. Conference on Electric Supply Industry in Transition: Issues and Prospects for Asia, Asian Institute of Technology, Thailand, 14-16 January 2004, S.C. Srivastava.
5. 'POWERFEST 2003' conference at NIT Kurukshetra during 28-29 November 2003, S.C. Srivastava.
6. International Conference on Advanced Pattern Recognition, ICAPR-03, ISI, Calcutta, 10-13, December, Contributed one Paper, Laxmidhar Behera.
7. Indian International Conference on Artificial Intelligence, IICAI-03, Hyderabad, 18-20, December, Contributed one Paper, Laxmidhar Behera.
8. International Conference on Information Technology, CIT-03, Bhubaneswar, 21-24, December, Contributed one paper and delivered an invited talk, Laxmidhar Behera.
9. International Conference on Intelligent Sensors and Information Processing, ICISIP-04, Chennai, 4-7 January, Contributed two papers and Chaired one session, Laxmidhar Behera.
10. International Conference on Intelligent Signal Processing and Robotics, ISPR-04, IIT, Allahabad, 20-23 February, Invited Lecture, Laxmidhar Behera.
11. Attended IEEE Asia-Pacific Region-10 Conference TENCON, Bangalore, October 2003. He chaired a session in the conference, A. Ghosh.
12. Attended 27th National Systems Conference (NSC-2003), IIT Kharagpur, December 2003. He chaired two sessions in the conference, A. Ghosh.
13. Presented contributed paper at NCC'04, IISc Bangalore, K. Vasudevan.
14. Attended National Power Electronics Conference (NPEC), IIT Bombay 17-18 Oct. 2003, S.P. Das.
15. Chaired the technical session on Resonant Converters in National Power Electronics Conference (NPEC 2003), Oct. 16-17 2003, IIT Bombay, S.P. Das.
16. Presented a contributed paper A Novel Soft-Switching Quasi-Resonant Inverter for Variable Power Factor Load, S.P. Das.
17. Dissemination workshop on GHG mitigation, May 9, 2003, New Delhi, Invited in Discussion, S.N. Singh.
18. National Workshop on Custom Power Devices, 13th June 2003, Invited in Discussion, S.N. Singh.

19. International Conference on Intelligent system Application in Power Systems (ISAP03) Greece, 31st August- 3rd September 2003, Contributed paper, S.N. Singh.
20. National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, Keynote speaker, S.N. Singh.
21. The Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues', Orlando, Florida, 12-16 Oct 2003, Organising Chair, SN Singh.
22. The Twelfth International Workshop on the Physics of Semiconductor Devices, Chennai, 16-20 Dec 2003, Attended, S. Iyer and RS Anand.
23. Second International Conference on Optical Communications & Networks, (ICO CN 2003) Bangalore, India, October 20-22, 2003, Attended, Joseph John
24. The Workshop on Modelling of Power Devices with PSPICE, CPRI, Bangalore, June 2003, Attended, Nandini Gupta.
25. Presented papers in a conference on Optical Information Systems, organized by SPIE in San Diego, CA, USA in Aug. 2003, Chaired one session in this conference, Anjan K. Ghosh.
26. Presented invited paper in National Symposium on Engineering Optics in Meerut, Apr 2003, Chaired one session in this conference, Anjan K. Ghosh.
27. The Tenth National Conference on Communications, Jan 30- Feb. 2, 2004, IISc, Bangalore, Chaired a session, A.K. Chaturvedi.
28. Presented contributed paper in Engineering and Technology Conference, EnTech 2003, held in Kuching, Malaysia, July 31-Aug 2, 2003, S. Qureshi.
29. IEEE Power Engineering Society General Meeting, Toronto, Ontario, Canada, July 13-17, 2003 and contributed paper Novel Software Architecture for Power Distribution Automation, Attended, R.P. Gupta.
30. Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, Attended, R.P. Gupta.
31. The International Conference on Systemics, Cybernetics and Informatics (ICSCI-2004), Pentagram Research Center Pvt. Ltd., Hyderabad, India, February 12-15,

2004. and Chaired a Tech. Session and Contributed Paper: Substation Automation Communication Protocol, Attended, R.P. Gupta.
32. Workshop on Distribution System Upgrades and Modernization, Center for Management Education, Administrative Staff College of India (ASCI), Hyderabad, India, February 16-20, 2004, Attended, R.P. Gupta.
 33. National Workshop on Communication Protocol for Power System Automation, Central Power Research Institute, Bangalore, India, January 22-23, 2004. Invited Paper: A Comparative Study of IEC61850 Communication Protocol with DNP3.0 and UCA 2.0, Attended, R.P. Gupta.
 34. The Seminar on Power System Data Repository and Load Research, Central Power Research Institute, Bangalore, India, November 20-21, 2003 and Invited Papers: Development of Power Distribution Automation System Web Based Monitoring of Power Distribution System, Attended, R.P. Gupta.
 35. Workshop on Development of Strategy for a Model 33 kV Substation at Institute of Engineering and Technology, Lucknow, India, September 5, 2003. Invited Lecture: IT Solution in Power Distribution Sector, Attended, R.P. Gupta.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. English as Second Language. Session Chairperson. Teaching English through Technology, 35 Annual Conference of ELTAI and British Council, Hall of Guinness, Anna University, Chennai, 4-6 P.M., February 6, 2004, G. Neelakantan.
2. Teaching English to Disadvantaged Learners at IIT Kanpur 35 Annual Conference of ELTAI, Anna University, Chennai, 9-10 A.M., February 7, 2004, G. Neelakantan.
3. Re-Visioning Science, Re-Thinking Positivism: The Politics of Gender in Indian English Science Fiction. International Conference on Women & Science, Organised by NISTADS, New Delhi, March 8- 10, 2004, Suchitra Mathur.
4. Caught between the Goddess and the Cyborg: Third World Women and the Politics of Science in Indian English Science Fiction, presented at the Utopia & Dystopia Seminar, Organized by the Department of English, Jadavpur University, March 24-27, 2004, Suchitra Mathur.
5. Perspectives on Health, Illness and Well being: An Agenda for Future Research, National Seminar on Dimensions of Health, Centre for Behavioural and Cognitive Sciences, Allahabad University, Allahabad, April 10- 12, 2003, A. K. Sharma.

6. Health and Illness Among Tribes: A Quick Survey of Two Blocks of District Raigarh, Regional Conference of Indian Association for the Study of Population (IASP), Sponsored by United Nations Population Fund, Population Research Centre, Department of Economics, Lucknow University, November 13- 14, 2003, A. K. Sharma and Rita Singh.
7. Indian Systems of Medicine: Commodification of Health and Marginalization of Tradition, National conference on Traditional Knowledge Systems of India, January 9-11, 2004, Department of Humanities and Social Sciences, IIT Kharagpur, A. K. Sharma.
8. Chaired Sessions on Indian Systems of Medicine and Pharmacology-4, and Philosophy of Traditional Knowledge Systems-1, National Conference on Traditional Knowledge Systems of India, January 9-11, 2004, Department of Humanities and Social Sciences, IIT Kharagpur, A. K. Sharma.
9. Chaired Session on Socio-Political Dimensions and Indian Youth, National Symposium on Construction and Reconstruction of Indian Youth, Sri Jai Narain Snatkottar Mahavidyalaya, Lucknow, January 27, 2004, A. K. Sharma.
10. Triple Burden on Women in Science at the Reputed Institutes of Higher Education in Science and Technology, National Seminar on Women in Science: Is the Glass Ceiling Disappearing? March 8- 10, 2004, NISTDS, New Delhi, Namrata Gupta and A. K. Sharma.
11. Studying Globalization in Sociology: Some Issues, National Conference on Social Change in Global India, Ethnographic and Folk Culture Society, NEDA Complex Lucknow, March 12- 14, 2004, A. K. Sharma.
12. Population and Development: Participatory Perspective, National Seminar on Socio-economic Development and Resource Dynamics in India: Implications for Human Resource Development, Department of Social Work, Lucknow University, March 19- 20, 2004, A. K. Sharma.
13. Participated in discussion on Rapid Evaluation of ISRHHD and SAY Schemes- Approval of Tabulation Plan, Ministry of Rural Development, Department of Rural Development, Krishi Bhavan, New Delhi, November 6, 2003, A. K. Sharma
14. Participant, National Conference on, Social Change in Global India, Organized by Ethnographic and Folk Culture Society, NEDA Complex, Lucknow, March 12-14, 2004, Mummun Jha.

15. Sharing Fixed Costs in Franchise Contracts, 40th Annual Meeting of the Indian Econometric Society, Institute of Social and Economic Change, Bangalore, February 13-15, 2004, T.V.S. Ramamohan Rao.
16. Some Aspects of Stochastic Economics, a la Tintner Invited Lecture at the 40th Indian Econometric Society Meetings, Institute of Social and Economic Change, Bangalore, February 13-15, 2004, T.V.S. Ramamohan Rao.
17. Financial Constraints, Inventory Investment, and Fixed Capital, 6th Money and Finance Conference, Indira Gandhi Institute of Development Studies, Mumbai, March 25-27, T.V.S. Ramamohan Rao.
18. Quest for Space: A Study of Two Novels. Colloquium on Language and Space, CIIL Mysore, March 29, 2004, B. N. Patnaik.
19. Computational Linguistics for Indian Languages Symposium on Indian Morphology, Phonology and Language Engineering, IIT Kharagpur, March 18 – 20, 2004, B. N. Patnaik.
20. On the Choice of an Appropriate Framework for Computational Linguistic Research on Indian Languages. SCALLA 2004, Working Conference Kathmandu, January 5 – 7, 2004, B. N. Patnaik.
21. Dissenter as Communicator. Special Lecture at International Seminar on Applied Linguistics in a Global World, Delhi University, December 12 – 14, 2003, B. N. Patnaik.
22. Oriya as Typologically Disturbed Language and Some Related Matters, Endowment Lecture at DLA Conference, June 19 – 21, 2003, B. N. Patnaik.
23. The Common Conceptualization of Mental Health: A Qualitative Investigation of Categories of Meaning, National Seminar on Social Dimensions of Health, Organized by UGC Centre of Behavioural and Cognitive Sciences, University of Allahabad, Allahabad, April 10-12, 2003, Shikha Dixit.
24. Changes in Cultural Beliefs Regarding Health and Illness among Bondos: A Qualitative Study, National Conference on Social Change in Global India, Organized by Ethnographic and Folk Culture Society, NEDA Complex, Lucknow, March 12-14, 2004, Mamta Misra and Shikha Dixit.
25. Environment Protection: The Role of Liability System in India, Berlin Conference 2003 on Governance for Industrial Transformation, Berlin, Germany, December 5-6, 2003, P. M. Prasad.

26. Plenary Talk Delivered and Chaired a Technical Session at the Vth Andhra Pradesh Sociological Conference held at the University of Osmania, Hyderabad, August 7-8, 2003, B. K. Pattnaik.
27. Plenary talk Delivered and Chaired a Technical Session at the 24th All India ISSA Conference, Organised by the Department of Sociology, H.S.Gour University, Sagar, January 23-25, 2004, B. K. Pattnaik.
28. Language and Democracy in India: A Linguistics Point of View, All India Social Science Congress, IIT Kharagpur, December 3-7, 2003, B. N. Pattnaik.
29. English in the Indian Context, Chief Guest's address at the Workshop on the Effective Use of Materials, AMU, Aligarh, December 14 – 16, 2003, B. N. Pattnaik.
30. Alienation as Comedy in Upamanyu Chatterjee's English, August, Sixth International Conference: Rethinking Modernity, the Department of English, University of Rajasthan, Jaipur in collaboration with the Forum on Contemporary Theory, M. S. University, Baroda and Louisiana State University, Shreveport, U. S. A., 14-17 December, 2003, T. Ravichandran.
31. Participant, the 21st Annual Convention of SIS and Conference on New Challenges in Information Management and e-learning in the age of Globalisation—Issues and Opportunities organised by the Central Library, IIT Roorkee and Society for Information Science, 9-11 April, 2003, T. Ravichandran.
32. Project Planning and Project appraisal vis-a'-vis Our Approaches Towards Sustainable Development, 35th Annual Conference of the Orissa Economic Association, held at SVM College, Jagatsingpur, Orissa, February 15-16, 2003, Rath B.
33. Growth Determinants of Orissa and Their implications for Future Development of the State, 35th Annual Conference of the Orissa Economic Association, held at SVM College, Jagatsingpur, Orissa, February 15-16, 2003, Rath B. & P. K. Jena.
34. Post-Evaluation of Environmental Abatement Measures of Kanpur Nagar Nigam (KNN) with Respect to Solid Waste Management, National Conference on Environmental Pollution Prevention and Control held at University Polytechnic, AMU, Aligarh, UP, June 5, 2003, Rath B. & Agarwal S.
35. Trade-off Between Delta Area Development vis-à-vis Watershed Area Development of a River for Sustainable Development: A Case Study of the Mahanadi River Basin, Orissa, India". 13th Stockholm Water Symposium, Stockholm, Sweden, August 11-14, 2003, Rath B.

36. Scope of Integrated Resource Management for Power Generation: with Reference to Generation of Power from Municipal Solid Waste, Workshop on Power Reforms: Technological and Financial, IIT Kanpur, September 4-5, 2003, Rath B.
37. Management of Water Resources Projects in India: Pitfalls, Problems and Prospects. Workshop on Overcoming Water Scarcity and Quality Constraints, Organized by Eco Friends at the St Mary Convent School, Kanpur, September 26-27, 2003, Rath B.
38. Environmental Impact of Outsourcing of Service Sector Activity in PSUs & Autonomous Institutions, 45th Annual Conference of the Indian Society of Labour Economics, Jadavpur University, Kolkata, Dec. 15-17, 2003, Rath B.
39. Revitalisation/Renovation of Common Property Resource (CPR) Potentials as an Alternative Means to Improve the Economy of Orissa, National Workshop on Reviving Orissa Economy: Opportunities and Areas of Action, Utkal University, Bhubaneswar, January 17-18, 2004, Rath B. & N. C. Sahu.
40. Export and Growth Causality: An Indian Experience in the Post Liberalisation Period, 36th Annual Conference of the Orissa Economic Association, held at Bhubaneswar, Orissa, February 21-22, 2004, Rath B. & N. C. Sahu.
41. Role of Youth in Water Purification and Water Conservation, Workshop organized by the Eco Friends, Kanpur on the eve of the World Water Day, March 22, 2004, Rath B.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. APORS 2003: International Conference held on December 8-11, 2003, New Delhi, India, Swami Sanjeev.
2. Sixth International Convention on Quality Circles, Lucknow, 16-19th Dec. 2003, A.K. Mittal.
3. APORS 2003 Dec. 8-10, 2003, New Delhi, A.K. Mittal.
4. BHEL Inter Unit Quality Convention Haridwar July 19, 2003, A.K. Mittal.
5. 14th Kanpur Convention on Quality Circles, KCCQC 2003, Agra 12-13 September 2003, A.K. Mittal.

6. Elitex 2003 Exhibition 28 April 2003 New Delhi (Patent Technology Mapping) Demonstration, A.K. Mittal.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Annual Meeting of the Electron Microscopy Society of India, Shimla, April 16-18, 2003, R. Balasubramaniam.
2. International Conference on Advances in Surface Treatments 2003, International Advanced Research, Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, R. Balasubramaniam.
3. General Motors Research and Development Conference, Bangalore, November 9, 2003, R. Balasubramaniam.
4. CORCON 2003 International Conference on Corrosion, Mumbai, December 1-4, 2003, R. Balasubramaniam.
5. Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.
6. Annual Meeting of the Materials Research, Society of India, Varanasi, February 9-11, 2004, R. Balasubramaniam.
7. 17th National Convention of Metallurgical and Materials Engineers and National Seminar on Emerging Materials for Wear Applications, Bhopal, India, September 11-12, 2003, Bikramjit Basu.
8. 8th International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 29, 2003, Bikramjit Basu.
9. Materials Research Society Spring Meeting, April 21-25, 2003, Monica Katiyar.
10. International conference on 'Advances in Powder Metallurgy and Particulate Materials' Las Vegas, U.S.A. June 8-12, 2003, R. K. Dube.
11. Conference on 'Electron Microscopy and Allied Fields', EMSI, Central Potato Research Institute, Shimla, 2003, Gouthama,
12. Materials Research Society Spring Meeting , 21-25 April 2003, Deepak Gupta.
13. NMD-ATM, 2003 at Calcutta November 14-16, 2003, Dipak Mazumdar.
14. Fluent CFD conference at Pune, November 17-19, 2004, Dipak Mazumdar.

15. Indo-US workshop on 'Future trends in intelligent processing of Metallic materials', Goa, India, Dipak Mazumdar.
17. International Symposium on 'Transformation and Deformation Mechanisms in Advanced High Strength Steels', Canadian Institute of Mining and petroleum, Vancouver, Canada, August 2003, R. K. Ray.
18. 3rd International Conference on Science, Technology, and Application of Sintering (SINTERING 2003), State College, PA, USA, September, 14-17, 2003.
19. International Conference on Advances in Materials & Processes for Industrial Applications, September 25-17, 2003, Pune, Anish Upadhyaya.
20. 57th Annual Technical Meeting of The Indian Institute of Metals NMD-ATM November 14-17, 2003, Kolkata, Anish Upadhyaya.
21. Indo-US Workshop on Futuristic Manufacturing, March 2004, Anish Upadhyaya.

DEPARTMENT OF MATHEMATICS

1. Synthesizing the Classical and Inverse Methods in Linear Calibration, at the 54th session of International Statistical Institute at Berlin, Germany in August 2003, Shalabh.
2. Consistent Estimation of Coefficients in Measurement Error Models with Replicated Observations at the Seminar on Multivariate Analysis and its Applications, Calcutta University, Calcutta in March 2004. Invited talk, Shalabh.
3. Annual Conference of Bharat Ganita Parishad Nov. 15, 16, 2003, Chief Guest and invited lecture 'On Multipliers of vector valued function spaces'. (Lucknow University), Tewari, U.B.
4. Joint India – AMS meeting, Dec. 17-20, 2003, Invited lectures on 'Isometric multipliers of L^p - spaces' at IISc Bangalore, Tewari, U.B.
5. 11th Ramanujan Sumposium on Recent trends in operator theory and Banach Algebras March 3-5, 2004. Key note address and also invited lecture on 'Vector-Valued Multipliers and Operator Valued measures' organised at The Ramanujan Institute of Mathematics, University of Madras, Tewari, U.B.
6. Mathematical methods and applications, IIT, Chennai, Dec, 22, 2003. Presented a paper and chaired a session, Shunmugaraj.

7. Delivered an invited lecture at the International Conference on Differential Equations, Dynamical systems and applications from 19.5.2003 to 24.5.2003 Atlanta, U.S.A. Title of talk: Resonance problems for Hardy-Sobolev operator with indefinite weights, Raghavendra, V.
8. An invitation to Monotonic Analysis, Asia-Pacific Conference on Operations Research-2003 (APORS-2003), New Delhi, 8th to 11th December, Dutta, J.
9. National Workshop on Logic and Artificial Intelligence, Department of Pure Mathematics, University of Calcutta, October 13-16, 2003, Delivered invited lectures on Paraclassical Logics and Non-monotonicity, Banerjee, M.
10. CIT 2003, 6th International Conference on Information Technology, Bhubaneswar, India, December 22-25, 2003. Delivered advanced tutorial on Rough Set Theory, Banerjee, M.
11. Analysis of Hybrid Censored Competing Risks Data, International Conference on Recent Developments in Theoretical and Applied Statistics, held at the University of Tamsui, Taiwan, during December 15-16, 2003, (Invited Speaker), Kundu, D., Kannan, N., Balakrishnan, N.
12. Application of method of semidiscretization to nonlinear functional differential equation with nonlocal history condition, Paper presented in National Conference on Wavelets and its Applications, Bhubaneswar, 7-11 Feb. 2004, S. Agarwal., Bahuguna, D.
13. Modelling the depletion of resources by population pressure augmented industrialization: Its effects on population, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Sharma, S., Shukla, J.B.
14. Modelling the survival of a biological species affected by toxicants (pollutants) emitted from external sources as well as formed by its precursors, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Sharma, S., Shukla, J.B.
15. Modelling the spread of a carrier-dependent infectious disease: Effect of migration from environmentally degraded habitat, presented at the American Mathematical Society – Mathematical Association of America, Jt. Mathematical Meeting held at Phoenix, Arizona, U.S.A. Jan. 7-10, 2004, Sinha, Prawal., Ghosh, M., Chandra, P., Shukla, J.B.

16. A thermohydrodynamic analysis of a fitted pad slider bearing with heat conduction to the pad and slider, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Rao, P.S., Rathish Kumar B.V.
17. Wavelets in Sparse Matrix Computation, in Orissa Mathematical Society Annual Conference, Feb 7-11, Bhubaneswar, 2004, Rathish Kumar, B.V.
18. A Wavelet Taylor Galerkin Method for Advection-Diffusion Problems, in Orissa Mathematical Society Annual Conference, Feb 7-11, Bhubaneswar, 2004, Rathish Kumar, B.V., & Manimehra.
19. On the development of parallel CGM solver for CFD computations on Anu-Cluster, presented in 14th Int. Conf. Of the Jangjeon Mathematical Society, Univ. Mysore, India, Dec. 22-24, 2003, Rathish Kumar, B.V., Kumar, B.
20. Convection in Corrugated Porous Enclosures, in Proceedings of 48th congress of ISTAM, 44-53, held at BITS, MESRA, Ranchi, India, Dec. 18-21, 2003, Rathish Kumar, B.V. & Shalini.
21. Multilayer Taylor Wavelet Galerkin method for parabolic and hyperbolic partial differential equations, presented in 48th congress of ISTAM, held at BITS, MESRA, Ranchi, India, Dec. 18-21, 2003, Rathish Kumar, B.V., & Manimehra.
22. Numerical simulation of load carrying mechanism in high speed titled pad slider bearing lubrication, presented in 14th Int. Conf. of the Jangjeon Mathematical Society, Univ. Mysore, India, Dec. 22-24, 2003. Rao, P.S., Rathish Kumar, B.V., Sinha, Prawal.
23. Effect of fluid inertia on titled pad slider bearings with heat conduction to the stationary pad, in National Conference on Fluid Flow and Control, UGC DRS Center, Bharathiar University, Coimbatore, March 28-29, 2003, Rao, P.S., Rathish Kumar, B.V., Sinha, Prawal.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Aerospace Manufacturing & Value Engineering Panel meeting at Hyderabad Manufacturing of Polymer Composite Products using Rapid Tooling, March, 2004, Prashant Kumar.
2. National Conference on Advanced Manufacturing and Robotics, CMERI, Durgapur, Jan 10-11, 2004, Presented two papers, Ashish Dutta.

3. Prediction and Analysis of the Bubble Formation in Film Boiling, INVITED TALK, FLUENT CFD Conference for India and South East Asia, Pune, India, November 18-20, 2003, G.Biswas.
4. Some Aspects of Mathematical Models of Turbulent Flows, Invited Talk at the 6th CFD Symposium (In honour of Prof. S.M. Deshpande), Bangalore, India, August 11-13, 2003,.G. Biswas.
5. Participated in the First General Motors R&D Symposium, India Science Laboratory, Bangalore, November 10,2003,.N.V.Reddy.
6. 7th Indo-Japan Seminar on Advanced Manufacturing Systems, March 15-22,2003, Tokyo, Japan, N.V.Reddy.
7. JSME workshop on Advanced Manufacturing Systems for the members of Asian Youth Forum on Advanced Manufacturing, Tokyo, February 15 - 19, 2004, Core member of the A YFAM organized by JSME, Japan, N.V.Reddy.
8. 3rd JSTP International Seminar on Precision Forging (3rd JSTP ISPF, Organized by Japan Society for Technology of Plasticity), Nagoya (JAPAN), March 14-19, 2004, N.V.Reddy.
9. Indo-USA Collaboration on Futuristic Manufacturing, N.V.Reddy.
10. Better Air Quality (BAQ) 2003 International Conference, Manila, Philippines, Dec. 17-19, 2003, B.P.Pundir.
11. Third SAE India Mobility Conference, New Delhi, Jan. 17-19, 2004. Chairman of a Technical Session, B.P.Pundir.
12. 2004 SAE World Congress, Detroit, Michigan, March 8-11, 2004, B.P.Pundir.
13. The Second Evolutionary Multi-Criterion Optimization (EMO-03) Conference, 8-11 April, 2003, Faro, Portugal. Presented a keynote lecture, chaired a session, and made three oral paper presentations, K. Deb.
14. 54th International Astronautical Congress of the International Astronautical Federation, the International Academy of Astronautics, and the International Institute of Space Law, 29 September-03 October 2003, Bremen, Germany. Presented a paper, K. Deb.

15. 17 August, 2003: Invited to present a tutorial during 'Multi-disciplinary International Scheduling Conference (MISTA)' under the theme 'Tutorials in Modern Optimization Methods' at the University of Nottingham, UK, K. Deb.
16. 17 September, 2003: Invited to present a keynote lecture entitled 'An Introduction to Multi-Objective Evolutionary Optimization' during EUROGEN-2003 held in Barcelona, Spain, K. Deb.
17. 26-28 October, 2003: 6th International Conference on Artificial Evolution (EA-2003). Marseille, France, K. Deb.
18. 9 December, 2003: Invited to present a keynote lecture entitled 'Challenges to Multi-Objective Evolutionary Optimization' during Congress on Evolutionary Computation (CEC- 2003) held in Canberra, Australia, K. Deb.
19. A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation Conference on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Bangalore, Presented two Invited Papers, Avinash Kumar Agarwal.
20. XVIII National Conference on I C Engines and Combustion organized by Combustion Institute (India Section), College of Engineering, Trivendrum, December 15-18th, 2003, Presented one contributed paper and chaired one session, Avinash Kumar Agarwal.
21. ASME-ICED 2003 Spring technical conference, Salzburg, Austria, 11-14th May 2003, Presented a contributed paper, Avinash Kumar Agarwal.
22. SAE 2004 India Mobility Conference, New Delhi, January 12-15th, 2004, Presented two contributed papers and chaired one session, Avinash Kumar Agarwal.
23. SAE World Congress 2004, Cobo Center, Detroit, March 8-12th, 2004, Presented one contributed paper, Avinash Kumar Agarwal.
24. Attended an International Conference on Advances in Materials and Processing Technology held during 8-11 July, 2003 at Dublin City University, Dublin, Ireland, S.K.Choudhury.
 - a) Presented a paper on Tool Wear Prediction in Turning co-authored by P. Srinivas in the conference.
 - b) Chaired two sessions on Machining during the conference.
25. 21st IIR International Congress of Refrigeration 2003 held at Washington (USA), Aug 17-12, 2003, Contributed Paper, Keshav Kant.

26. Sixth ISHMT-ASME Heat and Mass Transfer Conference held at Kalpakkam, India Jan 05-07, 2004, Contributed paper, Keshav Kant.
27. Int. Conference on Air-conditioning and Refrigeration (ACRECONF 2003) held at New Delhi, Sept. 10-12, 2003, Contributed Paper, Keshav Kant.
28. Delivered Keynote address in National Symposium on Mechanisms & Design, IISc, Bangalore July 25, 2003, Dr.A.K.Mallik.
29. NDE 2003, Thiruvananthapuram, 11-13, Dec 2003, Dr.N.N.Kishore.
 - a) Chaired a session
 - b) Presented a paper on, Ray bending consideration of ultrasonic Tomographic Reconstruction of Defects.

DEPARTMENT OF PHYSICS

1. Invited talk at the International Conference on Unconventional Applications of Statistical Physics, SINP, Kolkata, 2003, D. Chowdhury.
2. Invited talk at the National Conference TP2003, IACS, Kolkata, 2003, D. Chowdhury.
3. Physics and techniques below 20K IISc Bangalore, Feb. 16-18, 2004, A.K. Majumdar.
4. Physics of novel materials, S.N. Bose Centre, Kolkata, Jan. 5-10, 2004, R. Prasad.
5. IIT Roorkee, April 6-8, 2003, S.C. Agarwal.
6. MRS Symposium, San Francisco, April 21-25, 2003, S.C. Agarwal.
7. XIX Main SERC School in Theoretical High Energy Physics, Univ. of Rajasthan, Jaipur, Feb. 9-28, 2004, 9 Invited Lectures, S.D. Joglekar.
8. National Conference on Nonlinear Systems and Dynamics, Kharagpur, M.K. Verma.
9. ICTP-INFN Summer School on Transport, Reaction and Propagation in Fluids, ICTP, Italy, September 2003, M.K. Verma.
10. Kolmogorov's Legacy in Physics: One Century of Chaos, Turbulence and Complexity, ICTP, Italy, September 2003, M.K. Verma.

11. 16th Int. Conf. of Ion Beam Analysis, Albuquerque New Mexico, July 25-30, 2003, V.N. Kulkarni.
12. Workshop on High Energy Astrophysics, IIT Kharagpur, 23-25 February 2004, invited talk and chaired a session, P. Jain.
13. National Laser Symposium, IIT Kharagpur, 22-24 Dec. 2003, S. Sivaprakasam.
14. Indo-French Workshop on Organic Photonic Components and Processes, Feb. 2-6, 2004, Kochi, Invited Talk, S. Kumar.
15. Indo-Japanese Meeting on Linear Colliders, Centre for Advanced Technology, Indore, April 17-18, 2003, Invited Speaker, S. Raychaudhuri.
16. 6th Meeting of Asian Collaboration for Accelerators, Tata Institute of Fundamental Research, December 15-17, 2003, Invited Speaker & Session Chair, S. Raychaudhuri.
17. 8th Workshop on High Energy Physics Phenomenology, IITB, Mumbai, January 4-16, 2004, Invited Speaker & Member, National Organising Committee, S. Raychaudhuri.
18. 17th SERC School in High Energy Physics, University of Rajasthan, Jaipur, February 18-28, 2004 Guest Faculty, S. Raychaudhuri.
19. Advances in Computational & Experimental Engineering & Sciences (ICCES'03), 24-29 July 2003, Corfu, Greece.
20. Twelfth International Conference on Physics of Semiconductor Devices (IWPSD 2003) held at IIT Madras Chennai, December 16-20, 2003, Y.N. Mohapatra.

Seminars Presented

CENTRE FOR LASER TECHNOLOGY

1. Mirrorless Lasers National Symposium on Engineering Optics Merrut Univ April 7, 2003, R. K. Thareja.
2. Member National Advisory Committee National Symposium on Atomic, Molecular Structure, Interactions and Laser Spectroscopy. B H U, March 14-15, 2004, R. K. Thareja.
3. Member National Organizing Committee, National Conference on Lasers and Their Applications (NCOLA-2004) Amravati University (Maharashtra) Jan 28-30, 2004, R. K. Thareja.
4. Member National Advisory cum Organizing Committee of the Symposium, National Laser Symposium-2003, IIT Khargpur Dec. 22-24, 2003, R. K. Thareja.
5. Symposium Advisory committee, National Symposium on Engineering Optics Merrut Univ April 7, 003, R. K. Thareja.
6. Fifth National Symposium on Radiation and Photochemistry IIT Kanpur, March 3-5, 2003, R. K. Thareja.
7. Application of Inverse Techniques in Engineering, presented at Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, 12th September, 2003, K. Muralidhar.
8. Flow Visualization using Optical Measurement Techniques, presented at Department of Aerospace and Mechanical Engineering, University of Oklahoma, Norman, 2nd October, 2003, K. Muralidhar.
9. Optical Measurement Techniques for Buoyancy-Driven Flows, presented at Department of Mechanical Engineering, Louisiana State University, Baton Rouge, 24th October 2003, K. Muralidhar.
10. Simulation of Convection and Experiments on the Growth of Optical Crystals, presented at Department of Mechanical and Materials Engineering, Florida International University, Miami, 7th November, 2003, K. Muralidhar.
11. Imaging of Convection in Crystal Growth from an Aqueous Solution using Interferometry, Schlieren and Shadowgraph, presented at Department of Mechanical

Engineering, University of Minnesota, Minneapolis, 9th December, 2003, K. Muralidhar.

12. Diode Lasers and its applications, Condensed Matter Workshop, organized by Department of Physics, IIT – Kanpur, 14th February 2004, S. Sivaprakasam.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Stability analysis of composite laminates using higher order deformation theory for initial stability and nonlinear vibration, Motilal Nehru National Institute of Technology, Allahabad, May 10, 2003, N.G.R.Iyengar.
2. Stability analysis and interaction curves for composite laminates using higher order shear deformation theory, Dept. of Mechanical Engg. Univ. of Rhode Island, USA, July 3, 2003, N.G.R.Iyengar.
3. Analytical modeling of smart structures and application to helicopters, Invited talk: 15-th Annual General Meeting of Materials Research Society of India, BHU, Feb. 2004, C.Venkatesan.
4. Modeling of effect of wind using Six-degree-of-freedom trajectory formulation for wrap around fin stabilized rocket, ARDE, Pune, A. K. Ghosh.
5. Finite Element Computation of Fluid Flow, International Indian-Russian Workshop, High Performance Computing in Science and Engineering, HPC Se 2003, Moscow, Russia, 2003, Sanjay Mittal.
6. Shear Layer Instability and Drag-crisis for flow past a Cylinder, in Seventh U.S.National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, Sanjay Mittal.
7. Study of Flow in a Supersonic Mixed-Compression Inlet, 6th annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August 11-13, 2003, Sanjay Mittal.
8. High Performance Computing in Fluid Mechanics, Academic Summit, Microsoft Research, Bangalore, India, 2004, Sanjay Mittal.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Genetics of Epilepsy – Impact on clinical management: Invited talk delivered in the Intensive National Program on Epilepsy, organized by the Department of Neurology, G.B. Pant Hospital and Maulana Azad Medical College, New Delhi, 29th February, 2004, S. Ganesh.

2. Concepts of Human Genetics: Invited talk delivered in the Short term workshop in genetics and molecular biology, Indian Institute of Technology, Kanpur, 18th to 25th October, 2003, S. Ganesh.
3. From Genes to Genome: Invited talk delivered in the Short term Course in Computational Neuroscience, Indian Institute of Technology, Kanpur, 7 to 18th July, 2003, S. Ganesh.
4. Pattern searching in protein and DNA sequences in the workshop Statistical methods in Bioinformatics held in Banaras Hindu University in Nov. 2003, R. Sankararamakrishnan.
5. Drosophila Genome: What do you learn from bioinformatics? in the short-term workshop on Genetics and Molecular Biology organized by the National Facility for Drosophila Repository and Research at IIT-Kanpur held during Sep/Oct 2003, R. Sankararamakrishnan.
6. Understanding proteins functions: Bioinformatics approaches. Inaugural lecture as part of the distance learning programme for Chattisgarh Government on Aug 15th 2003, R. Sankararamakrishnan.
7. Neuroinformatics: Databases, issues and challenges in the short-term workshop jointly organized by the National Brain Research Centre and Department of Electrical Engineering, IIT Kanpur in July 2003, R. Sankararamakrishnan.
8. Special Lecture: Introduction to Proteomics in short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash, R. Sankararamakrishnan.
9. Special Lecture: Structural Biology and Drug Design in short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash.
10. Techniques in Modern Biology. Invited lecture as part of the distance learning programme for Chattisgarh Government on Aug 23th 2003, B. Prakash.
11. Invited Talk on Structural Biology and Drug Design In the National Symposium on Expanding Horizons, New Delhi, organized by Delhi University in Oct. 2003, B. Prakash.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Transesterification of Vegetable Oils for Biodiesel Production: Engine Testing for Performance and Emissions, XVIII National Conference on I C Engines and Combustion organized by Combustion Institute (India Section), December 17-19, 2003, K Agarwal, S Garg, N Kaistha, S Sinha.
2. Characterisation and utilisation of Biodiesel as an Alternative Fuels for Diesel Engines, presented and published in the proceedings of A national consultative workshop on scientific strategies for production of non-edible vegetable oils for use as biofuels Policy document preparation workshop on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, SuTRA, IISc Bangalore, A K Agarwal, S Garg.
3. Transesterification of Vegetable oils for Biodiesel Production: Process considerations, Present status and Future Challenges, presented and published in the proceedings of A national consultative workshop on scientific strategies for production of non-edible vegetable oils for use as biofuels Policy document preparation workshop on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, SuTRA, IISc Bangalore, A K Agarwal, S Garg.
4. Modifying Dow Fire & Explosion Index, Department of Chemical Engineering, ETH, Zurich, Switzerland, March 19, 2004, J.P. Gupta.
5. Inherently Safer Design, a set of lectures, Department of Chemical Engineering, Helsinki University of Technology, Helsinki, Finland, March 22-26, 2004, J.P. Gupta.
6. CSIR Diamond Jubilee Lecture, National Metallurgical Laboratory, Jamshedpur: Genetic Algorithm (GA) and its use in the Multi-objective Optimization of Industrial Processes, July 2003, S.K. Gupta.
7. Process Intensification in a Trickle Bed Reactor – Experimental Studies, Dept. of Chemical Engineering, Howard University, Washington, D.C., October 30, 2003, D.P. Rao.
8. Self-organized thin films, Tata Research Design and Development Centre, Pune, A. Sharma.
9. Patterning of soft materials, National Chemical Laboratory, Pune, A. Sharma.
10. Instability of thin elastic films in adhesion, Lehigh University, A. Sharma.

11. Stability of single layer and two-layer viscoelastic plane Couette flow past a definable solid layer, Seminar given at the National Chemical Laboratory, Pune, February 2004, V. Shankar.

DEPARTMENT OF CHEMISTRY

1. Invited Lecture series (4 lectures) on February 14 & 15, 2003 at Department of Chemistry, Gulbarga University, Gulbarga, F. A. Khan.
2. Invited Lecture at the Department of Chemistry, May 5, 2003, IIT Guwahati, F. A. Khan.
3. Invited lecture in NOST-2003, October 29-November 2, 2003, Goa, F. A. Khan.
4. T. R. Seshadri Memorial Lecture, University of Delhi, February 2003, H. Ila.
5. Invited lecture at Boehringer Ingelha, Germany, June 2003, H. Ila.
6. Astrazeneca Research Foundation, Bangalore, July 2003, H. Ila.
7. IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications, University of Delhi, January 2004, H. Ila.
8. National Symposium on Organic Chemistry and Natural Product Chemistry, Manipur University, March 2004, H. Ila.
9. Invited Lecture at Advanced Photon Source, Argonne National Laboratory, USA, S. Sundar Manoharan.
10. Invited Lecture in International Conference in composites and Nano engineering, New Orleans July 2003, S. Sundar Manoharan.
11. Invited lecture at UGC refresher course held at Bharadidasan University, Trichy, Tamil Nadu, S. Sundar Manoharan.
12. Invited lecture at Mitsubishi Electronics at Boston, USA, Nov 2003, S. Sundar Manoharan.
13. Invited lecture at National seminar on Energy trends in Technology held at Karunya Institute of Technology, Cimbatore, Tamil Nadu, January 2004, S. Sundar Manoharan.

14. Invited lecture on nanomaterials at Lucknow University, Feb 2004, S. Sundar Manoharan.
15. Invited lecture on white light LED at the Indo-Italian workshop at IIT Kanpur , S. Sundar Manoharan.
16. Invited lecture on Nanomaterials at North Eastern Hill University Shillong, March 2003, S. Sundar Manoharan.
17. Bioinspired copper binding peptide conjugates from prion octarepeat and serum albumin. 10th National Organic Symposium Trust (NOST) Meeting, October 29-November 3, 2003, Goa, Verma S.
18. Modeling prebiotic catalysis: Uranyl ion impregnated adenine homopolymer as a reusable photonuclease. 3rd Trivandrum International Symposium on Recent Trends in Photochemical Sciences, January 5-7, 2004, Trivandrum, Madhavaiah, C., and Verma S.
19. Reverse tandem peptide conjugates as models for prion protein aggregation. Current Trends in Drug Discovery Research-2004, February 17-20, 2004, Lucknow, Verma S., Madhavaiah, C., Prasad, K. K.
20. Invited Lecture on August 10, 2003 at Dept. of Chemistry, Univ. of Nebraska, U.S.A., Vinod K. Singh.
21. Invited Lecture on August 13, 2003 at Dept. of Chemistry, Ohio University, Athens, U.S.A. , Vinod K. Singh.
22. Invited talk in a India-Korea seminar during July 27-31, 2003 at Yonsei University, Seoul, Korea, Vinod K. Singh.
23. Invited lecture at post-NOST symposium on Nov. 2, 2003, held at NCL Pune, Vinod K. Singh.
24. Invited Lecture at an Indo-US workshop on Organometalics during Dec. 9-11, 2003 held at IIT Chennai, Vinod K. Singh.
25. Osaka University, Osaka, JAPAN, 2003, Veejendra K. Yadav.
26. Osaka City University, Osaka, JAPAN, 2003, Veejendra K. Yadav.
27. Osaka Prefecture University, Osaka, JAPAN, 2003, Veejendra K. Yadav.
28. Nagoya University, Nagoya, JAPAN, 2003, Veejendra K. Yadav.

DEPARTMENT OF CIVIL ENGINEERING

1. Emerging Construction Materials, Short term course on building material testing laboratory, Institute of Research Development and Training, UP, Kanpur, 25th June, 2003 and 5th November, 2003, A. Das.
2. Interlinking of rivers in India : A Challenge ahead, World Environment Day, The Institution of Engineers (India), Kanpur Local Centre, June 5, 2003.
3. Precautions for Safe Recharge to Groundwater, Awareness and Training Workshop on Rain Water Harvesting, Housing and Urban Planning Deptt., Govt. of U.P., August 22, 2003, Lucknow.
4. Rain Water Harvesting and Artificial Recharge, Kanpur Development Authority, June 2003.
5. Airborne Altimetric LiDAR, IIRS Dehradun, 30 Sept. to 1 Oct., 2003, B. Lohani.
6. Capacity Design of Welded Steel MRF Connections, Presented at the Second Indo-German Workshop on Seismic Safety of Structures, Risk Assessment and Disaster Mitigation, 15-16 February 2004, IIT Madras, Arlekar, J.N, and Murty, C.V.R.
7. Durability based design of concrete structures National seminar on Use of Concrete in construction of infrastructural facilities for the development of nation, Concrete Day celebrations organized by the Indian Concrete Institute, UP Allahabad Chapter, September 7th, 2003, Misra Sudhir.
8. Northeast of India At Risk from earthquakes: Its Time..., National Workshop on Earthquake Risk Reduction – The Gujarat Experience, 31 January 2004, GSDMA, Ahmedabad, Murty, C.V.R.
9. Geomorphic evolution and stratigraphic development of the Quaternary alluvial plains of the Gangetic rivers, India, 3rd Latin American Congress of Sedimentology, June 8 - 11, 2003, Belém - Pará – Brazil, Sinha, R., Jain V., Gibling, M.R. & Tandon, S.K.
10. Quaternary palaeoclimatic reconstruction from mineralogy and geochemistry of the Sambhar lake playa sediments, Thar desert, India, XVI INQUA Congress, July 23-30, 2003, Reno, USA, Sinha, R., Smykatz-Kloss, W., Stueben, D., and Berner, Z.
11. Interfluves of the southern Ganga plains, India: attached and detached floodplains in the late Quaternary, XVI INQUA Congress, July 23-30, 2003, Reno, USA, Gibling, M.R, Tandon, S.K., Sinha, R., and Jain, M.

12. Hydrological Variability and Landscape Evolution in alluvial river system: An example from the Ganga plains, India. XVI INQUA Congress, July 23-30, 2003, Reno, USA, Jain V. & Sinha, R.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Universal Relations (two lectures) Ann. Symp. Calcutta Logic Circle October, 2003, Somenath Biswas.
2. Smart Card Based Protocol for Secure Access of Mobile Host in IPv6 Foreign N/W, KIIT, Bhubaneswar, December 2003, R.K Ghosh.
3. Machine-aided Translation: How to translated unconstrained text, Sept. 29, 2003. University of Texas, Austin, Ajai Jain.
4. IIIT Trivandrum, Large Circuit Testing, May 22, 2003, Ajai Jain.
5. Machine Aided Translation, Dec. 16, 2003 Jadavpur University, Calcutta, Ajai Jain.
6. IPv6: An Introduction IPv6 Forum of India seminar series, New Delhi September 2003, Dheeraj Sanghi.
7. Turning 802.11 Inside Out CSI Seminar, Lucknow, November, 2003, Dheeraj Sanghi.
8. Lambda calculus and games semantics, Calcutta University, October 2003, Anil Seth.
9. Games semantics, IMSC Chennai , March 2004, Anil Seth.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Harmonic Currents in a Distribution system, National Workshop on Custom Power, IISc. & ERDC(I), June 13, 2003, P. Sensarma.
2. Reverse Leakage Current in Polymer Light emitting Diodes, Workshop on Organic Electronics held at IIT Kanpur, Oct. 14-17, 2003, R.S. Anand.
3. Resource person to the workshops organized at AIT Bangkok, Thailand on Demand Side management and Distribution Automation, during 20-22 August 2003, S.C. Srivastava.
4. A training programme on Power System Operation Automation & Management, AIT Bangkok ,1-19 December 2003, S. C. Srivastava and S. N. Singh.

5. Delivered invited lectures in the POWERFEST 2003 conference during 28-29 November 2003 at National Institute of Technology Kurukshetra on Power System Restructuring, S. C. Srivastava.
6. Evolution of Neural Networks from Artificial to Real, Invited Talk, International Conference on Information Technology, CIT 2003, Bhubaneswar, Laxmidhar Behera.
7. Recurrent Quantum Neural Networks – A New Approach to Cognitive Modeling, Invited Lecture, International Conference on Intelligent Signal Processing and Robotics, ISPR-04, IIT, Allahabad, Laxmidhar Behera.
8. Presented a ten and a half hours lecture series titled Power Electronics Applications in Power Systems during June 23-26, 2003, as a part of the prestigious Grainger Lecture Series at the University of Illinois at Urbana-Champaign in cooperation with the Power Systems Engineering Research Center, University of Wisconsin at Madison. The lecture slides and audio can be obtained from the web site, Arindam Ghosh.
9. Presented a seminar on Optimal Predictive Iterative Decoding of Turbo Codes in Coloured Gaussian Noise invited by IETE on 29.02.2004 at IIT Kanpur, K. Vasudevan.
10. Presented a seminar on RF MOSFET, I.I.T. Kanpur, October 20, 2003, Alope Dutta.
11. Presented a seminar on Overview of RF Circuit Design, IIT Kanpur, Feb. 19, 2004, Alope Dutta.
12. Delivered an invited lecture Modern Trends in Power Electronics in HBTI, Kanpur, Feb. 2004 during TechEra 2004, S.P. Das.
13. Delivered a seminar entitled UPQC-Q for Power Distribution System on 13th Dec. 2003 at IIT Madras, Chennai, S.P. Das.
14. Presented the seminar of Rural Elect and Distributed Gen. for Sustainable Development (Four lectures), AIT Thailand, July 9-10, 2003, S. N. Singh.
15. Presented the seminar of Power System Restructuring: An Introduction, PSG Tech. Coimbatore, August 28, 2003, S. N. Singh.
16. Presented the seminar of Future of FACTS Controllers in Restructured Power System, KCT, Coimbatore, August 29, 2003, S. N. Singh.
17. Presented the seminar of Challenges for Electricity Generating Utilities in the Context of Restructuring, IIM Lucknow, Sept. 29, 2003, S. N. Singh.

18. Presented the seminar of Fundamental of Power System Deregulation, BVCOE, Pune Oct. 16-17, 2003, S. N. Singh.
19. Presented the seminar of Role of FACTS Controllers in Competitive Power Market, BVCOE, Pune, Oct. 16-17, 2003, S. N. Singh.
20. Presented the seminar of Power System Operation, Automation & Deregulation (15 Lectures), AIT Bangkok, Nov. 29-Dec. 19, 2003, S. N. Singh.
21. Presented the seminar of Artificial Neural Network: An Introduction, MITS, Gwalior, January 19, 2004, S. N. Singh.
22. Power System Restructuring: An Introduction, MITS, Gwalior, January 19, 2004, S. N. Singh.
23. Presented the seminar of Evolutionary Computation, MITS, Gwalior, January 19, 2004, S. N. Singh.
24. Delivered a seminar on Packaging considerations in array based optical interconnects in Nov. 2003, IIT Kanpur sponsored by IEEE UP section, Anjan K. Ghosh.
25. Delivered a seminar on Technical Writing in Feb. 2004 during Techkriti-04, Anjan K. Ghosh.
26. Delivered a talk on Fiber optic sensors in march 2004 in BHEL R&D Centre, Hyderabad, Anjan K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. The Politics of Saul Bellows Apocalypse in The Deans December. IIT Delhi, September 16, 2003, G. Neelakantan.
2. Lectures on Issues in Sampling and Qualitative Methods, UGC Refresher Course, Staff College, Banaras Hindu University, Organized by Department of Sociology, Varanasi, January, 17, 2004, A. K. Sharma.
3. Social Dynamics of Indian Society: Felicitation Seminar In Honour of Professor J.S. Gandhi, Centre for the Study of Social Systems, School of Social Sciences, Jawaharlal Nehru University, New Delhi, April 2- 3, 2003, Munmun Jha.
4. A Cognitivist Approach to Creativity in DST/ICPR sponsored National Seminar on Creativity and Cognitive Science, University of Hyderabad, February 26 – 27, 2004, C. A. Tomy.

5. Lexical Underdetermination: A Case for Default Semantics, National Seminar on Lexical Semantics, Osmania University, Hyderabad, February 2004, Achla M Raina.
6. Transforming the Educational System: Lessons from the Eklavya Experience Tata Institute for Fundamental Research, Mumbai, December 19, 2003, Amman Madan.
7. Invited Talk, Stress: Its Psychological Aspects, Seminar on Stress Management, Dayanand Academy of Management Studies, Kanpur, May 17, 2003, Ulhas Banquet Hall, Rave 3, Kanpur, 2003, Lila Krishnan.
8. Invited Talk, Interpersonal Communication, Department of Psychology, Lucknow University – May 21, 2003, Lila Krishnan.
9. Invited Talk, Thinking Styles: Foundations of Effective Team Building, Senior Managers, Industrial Electronics, Kanpur (a subsidiary of LML), June 25, 2003. Lila Krishnan.
10. Invited Talk, Justice: A Social Psychological Analysis, Department of Psychology, Government Nutan Girls College, Kila Maidan, Indore-December 19, 2003, Lila Krishnan.
11. Two Talks (For CA trainees of Institute of Chartered Accountants of India, Kanpur, Interpersonal Skills and Group Behaviour I - Feb. 1, 2004, Interpersonal Skills and Group Behaviour II - February 10, 2004, Lila Krishnan.
12. Talk Rethinking Language, given to postgraduate students of HSS Department, IIT Madras, July 3, 2003.
13. Three lectures on the theme of Paradigms in the Sociology of Development, at UGC National Refreshers Course, Department of Sociology, Varanasi, January 12- 14, 2004, B. K. Pattnaik.
14. Role of Educational Institutions/Students in Promoting Sustainable Development” Lecture to NCC Cadets, IIT Kanpur, August 23, 2003.
15. Management of Water Resources Projects in India: Pitfalls, Problems and Prospects, Inaugural Address in the workshop on Overcoming Water Scarcity and Quality Constraints, organized by Eco Friends at the St Mary Convent School, Kanpur, September 26-27, 2003.
16. Leadership Crises in our Country and the Challenges before the Youth, NSS Camp held at Narshingpur College, Utkal University, December 24, 2003.

17. 3Ps of Water Resource Management in India, Centre for Policy Research, New Delhi, January 12, 2004.
18. Problems and Prospects of Industrial Development in Uttar Pradesh, Valedictory Address in the seminar on Economic Development in UP: Problems and Prospects, sponsored by ICSSR, Armapore P.G. College, Armapore Estate, Kanpur, March 1, 2004.
19. "Globalisation and its impact on the consumer market", Kanpur, March 15, 2004
20. EIA Aspects of various Development Projects in India, four lectures delivered in the Refresher's Course on Environmental Sciences, BHU, Varanasi, March 18-20, 2004.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Invited Talk on Entrepreneurship and Marketing at Gaur Hari Singhania Institute of Management and Research, Kanpur, March 2004, Swami, S.
2. Evaluation of IT System: A case study, IIIT Hyderabad, Feb. 13, 2004, V. Bansal, and Himanshu Sadana.
3. Evaluation, Rating and Certification of Online Documents, IIIT Hyderabad, Faculty Workshop SAP, Bangalore Feb. 23-27, SAP Lab India, V. Bansal and Mayank.
4. Issues in forecasting Electricity Demand in South Asian Countries SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.
5. Forecasting Electricity Demand in South Asian Countries – Results SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.
6. Emerging Competitive Scenario in Indian Power Sector, Seminar at Indira Gandhi Institute of Development Research (IGIDR), Mumbai, 12th Dec. 2003, Anoop Singh.
7. Regulatory Issues in Power Sector Restructuring and Power Sector Scenario of India; delivered two lectures at IIM, Lucknow for Training Program on General Management for NTPC Managers, 14th April 2003.
8. Regulatory & Policy Developments in Indian Power Sector lecture in QIP sponsored short-term course on Electric Power System Operation and Management Restructured Environment, July 21-25, 2003, Anoop Singh.

9. Economics of Regulation, Guest Lecture, Dept. of Electrical Engg., IITK, 9th April 2003, Anoop Singh.
10. Invited lecture at National University of Singapore, Information systems Dept, 26/12/03 on New research directions for KM in the social sector-Knowledge exchange experience at Digital Mandi, Jayanta Chatterjee.
11. Invited lecture at Conference of Agricultural extension officers organized by National Institute of Agricultural Marketing, manage.com –10th Oct, 03, Jayanta Chatterjee.
12. Invited talk at Dept of Biotechnology on Business Incubation at biotechnology Parks. – 18th July, 03, Jayanta Chatterjee.
13. Appointed Lead researcher of The School of Organizational learning and transformation, at the Global Institute of Flexible Systems Management, Jayanta Chatterjee.
14. Awarded a 500 \$ prize for the Best paper published in the Flexible Systems Journal at the 3rd GLOGIFT conference, March 2004.
15. Retention in the Times of Downsizing and Restructuring: End of HRM? Seminar On Talent Hunt & Retention Strategies – Indian Experiences GHSIMR & NIPM, Kanpur, Feb. 15,2004, Rahul Varman.
16. Organised workshop: One-Day Workshop on Learning by Doing Engineering, Design, & Management Education IIT Kanpur, August 9, 2003, A.P. Sinha.

DEPARTMENT OF MATHEMATICS

1. Consistent estimation of regression coefficient in ultrastructural model with replicated observations at IIT Kharagpur in March 2004, Shalabh.
2. Completeness of small translates on spaces at ISI Calcutta, Ray, S.K.
3. A series of 8 lectures on Fourier Analysis on at ISI Bangalore between February 2004 to April 2004, Tewari, U.B.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Recent discovery of the original erection site of and original image atop the Delhi iron pillar, Indian Institute of Advanced Studies, Shimla, April 17, 2003, R. Balasubramaniam.

2. Delhi iron pillar: new insights, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, June 11, 2003, R. Balasubramaniam.
3. The story of the Delhi iron pillar, Rishi Valley School, Madanapalle, June 23, 2003, R. Balasubramaniam.
4. Metallurgy in India: past, present and future, Rishi Valley School, Madanapalle, June 24, 2003, R. Balasubramaniam.
5. Mysteries of the Delhi iron pillar unraveled, General Motors Research and Development Center, Warren, MI, USA, October 9, 2003, R. Balasubramaniam.
6. Astronomical significance of the Delhi iron pillar, Indian Institute of Science, Metallurgy Department, Bangalore, November 10, 2003, R. Balasubramaniam.
7. Relevance of Delhi iron pillar to modern technology, General Electric Corporate Research and Development, Bangalore, November 24, 2003, R. Balasubramaniam.
8. Recent advances in chromium coatings: Nanocrystalline Coatings and Composite Coatings, Shiram Pistons Pvt. Limited, Ghaziabad, January 31, 2004, R. Balasubramaniam.
9. Fundamentals of electrochemical coatings, Defence Metallurgical Research Laboratory Hyderabad, February 4, 2004, R. Balasubramaniam.
10. Corrosion resistance of the Delhi iron pillar, Defence Metallurgical Research Laboratory, Hyderabad, February 4, 2004, R. Balasubramaniam.
11. Toughness tailoring of zirconia ceramics (Invited), School of Materials Science, University of Leeds, May 2003, Bikramjit Basu.
12. Phosphor Characterization and Radiometry, Colorimetry, and Photometry, Short term course as a part of Samtel Research Center, April 2003, IIT Kanpur, Vasuda Bhatia.
13. AI techniques and their applications in steel making (Invited), Visakhapatnam Steel Plant, February 18, 2004, B. Deo.
14. New control paradigms in steel making (Invited), Bokaro Steel Plant February 26, 2004, B. Deo.
15. Industrial Grinding Practice, TEGA Industries, Calcutta, 29-31 May, 2003, B. K. Mishra.

16. Science and Technology of Particulate Materials, SAMTEL Ltd. Ghaziabad, 7-8 July, 2003, B. K. Mishra.
17. Application of Orientation imaging microscopy (OIM) for evaluation of grain boundary microstructure in structural ceramics, Indian Institute of Science, Bangalore, March 22, 2004, V. S. R. Murthy.
18. Fracture behaviour of fibre reinforced ceramic matrix composites : the role of interface microstructure (*Invited*), In workshop on 'Fracture behaviour of advanced materials : present status and future projections, Defence Metallurgical Research Laboratory, Hyderabad, December 19, 2003, V. S. R. Murthy.
19. Grain Boundary Engineering in Materials, General Motors Research and Development Center, Bangalore, January 16, 2004, V. S. R. Murthy.
20. Supersolidus Sintering- Process and Fundamentals (invited), Centre Des Materiaux, Ecole National Supérieure des Mines de Paris-ARMINES, France July 2003, Anish Upadhyaya.
21. TLP and SLP sintering of ferrous and non-ferrous systems (invited), IFAM, Bremen, Germany, July 2003, Anish Upadhyaya.
22. Recent advances in P/M processing of materials (Invited), International Conference on Advances in Materials & Processes for Industrial Applications, American Society of Metals, Pune Chapter, September 2003, Anish Upadhyaya.
23. Microwave Processing of materials, Solid State Physics Laboratory (SSPL), New Delhi, October 2003, Anish Upadhyaya.
24. Sintering of W-Cu alloys, Modison Metals Ltd., Vapi, December 2003, Anish Upadhyaya.
25. Vacuum interrupters through liquid phase sintering, Crompton Greaves Ltd, Mumbai, December 2003, Anish Upadhyaya.
26. Sintering of refractory metals, Nuclear Fuel Complex (NFC), Hyderabad December 2003, Anish Upadhyaya.
27. Supersolidus sintered bronze and stainless steels, Advanced Research Center for Powder Metallurgy and Advanced Materials (ARCI), Hyderabad, December 2003, Anish Upadhyaya.
28. Sintering of particulate MMCs, Corporate R&D, Bharat heavy electrical limited (BHEL), Hyderabad, December 2003, Anish Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Functioning, Style and Focus of some Design Institution of World - A Perception, July 2003, ISC Bangalore, Prashant Kumar.
2. Design of Robots for Interaction with Humans, Symposium on Medical Science and Technology for Population Welfare, IIT Kharagpur, Oct. 27-29, 2003, Ashish Dutta.
3. Fracture of Functionally Gradient Materials, Defense Materials Research Laboratory, DRDO, Hyderabad, December 19, 2003, P.Venkitanarayanan.
4. Application of Inverse Techniques in Engineering, presented at Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, 12th September, 2003, K.Muralidhar.
5. Flow Visualization using Optical Measurement Techniques, presented at Department of Aerospace and Mechanical Engineering, University of Oklahoma, Norman, 2nd October, 2003, K.Muralidhar.
6. Optical Measurement Techniques for Buoyancy-driven Flows, presented at Department of Mechanical Engineering, Louisiana State University, Baton Rouge, 24th October 2003, K.Muralidhar.
7. Simulation of Convection and Experiments on the Growth of Optical Crystals, presented at Department of Mechanical and Materials Engineering, Florida International University, Miami, 7th November, 2003, K.Muralidhar.
8. Imaging of Convection in Crystal Growth from an Aqueous Solution using Interferometry, Schlieren and Shadowgraph, presented at Department of Mechanical Engineering, University of Minnesota, Minneapolis, 9th December, 2003, K.Muralidhar.
9. Finite Element Applications in Metal Forming, TATA STEEL, September 28-October 4, 2003, N.V.Reddy.
10. Overview of Smart Sensors; Modern Trends in Sensors and Actuators Organization: IIT Kanpur, September 2003, B. Bhattacharya.
11. Hybrid damping of flexible link manipulator; Annual Technical symposium of AR&DB Structures Panel Organisation: IIT Kanpur, March 2004, B. Bhattacharya.
12. Computerized Tomography in NDT, QNDE-2004, National Metallurgical Laboratory, Jamshedpur, Jan 2004, Invited Lecture, P. Munshi.

13. International Symposium of Electromachining held at University of Edinburgh, Scotland, U.K., V.K.Jain.
14. Various Keynote addresses, V.K.Jain.
 - a. CA/CAPP/CAM presented during MECHADAY at R.K.D.F. Institute of Science and Technology, Bhopal, March 16, 2004.
 - b. Face to Face - A dialogue with young Technocrats during the Annual program DIKSHA at MANIT Bhopal, March 12, 2004.
 - c. Understanding Advanced machining Processes, National conference on Engineering and Technology organised by Hitkarini College of Engineering and Technology, Jabalpur (M.P.) during Feb. 20-21, 2004.
 - d. Micro- to Nano-finishing, G.C.Sen Memorial Lecture, at the 18th National Convention of Production Engineering of The institution Of Engineers (India) held at Jabalpur on December 27-28, 2003.
 - e. Advances in Advanced Machining Processes, National Conference on Advances in Manufacturing Systems held at Jadavpur University, Kolkata during 2003, pp.23-41.
 - f. Advanced Manufacturing Technologies, 0 YNA MECH, 2003 held at H.B. T.I. Kanpur during April 5-6, 2003.
15. Micro-sensors for IC Engine Applications, Center for High Technology, Ministry of Petroleum, Government of India, Delhi, April 2003, Avinash Kumar Agarwal.
16. Development of Micro-sensors based on capacitance probes and fiber optical probes for internal combustion engine applications, Indian Oil Corporation (R&D Center), Faridabad, 9th May 2003, Avinash Kumar Agarwal.
17. Development of Biodiesel and Status in India, Diesel Locomotive Workshop, Varanasi, 8th January, 2004, Avinash Kumar Agarwal.
18. Invited Lecture, Cooling of Electronic Components, Anand Engineering College Agra, Feb. 24, 2004, Dr.Keshav Kant.
19. Modelling of Non-linear Vibration Isolators, RCI, DRDO, Hyderabad, Nov.19, 2003, Dr.A.K.Mallik.

DEPARTMENT OF PHYSICS

1. Nuclear Science Centre, New Delhi, September 2003, A.K. Majumdar.
2. IIT Kharagpur, December 2003, A.K. Majumdar.
3. 2 seminars at IIT Madras, February 2004, A.K. Majumdar.
4. Jahn-Teller Distortion in clusters and lithiated manganese oxides, IIT Roorkee, April 2, 2004, R. Prasad.
5. Statistical Theory of MHD Turbulence, Observatories de Nice, June 2003, M.K. Verma.
6. Statistical Theory of MHD Turbulence, Univ. of Brussels, June 2003, M.K. Verma.
7. Statistical Theory of MHD Turbulence, Nordit, Copenhagen, June 2003, M.K. Verma.
8. Energy cascade in MHD, IIT Kharagpur, December 2003, M.K. Verma.
9. Is there a preferred direction in the Universe, IIT Kanpur, February, 2004, P. Jain.
10. Is there a preferred direction in the Universe, Invited talk presented at the Workshop on High Energy Astrophysics, IIT Kharagpur, 23-25 February 2004, P. Jain.
11. Is there a preferred direction in the Universe, SN Bose National Center, Kolkata, 27 February 2004, P. Jain.
12. Diode Lasers and its applications, Condensed Matter Workshop, IIT Kanpur, Feb. 14, 2004, S. Sivaprakasam.
13. Godel Universe, Black Holes and String Theory, Institute of Physics, Bhubaneswar, June 2003, G. Sengupta.
14. Invitation to String theory, Institute of Physics, Bhubaneswar, June 2003, G. Sengupta.
15. Godel Universe, Time Machines and String Theory, IIT Kanpur, G. Sengupta.
16. Optical properties of small molecules for OLED, Invited talk at Indo-French Workshop on Organic Photonic Components and Processes, Feb. 2-6, 2004, Kochi, S. Kumar.

17. Electron transport in nanocrystalline silicon films, Laboratories PICM, Ecole Polytechnique, France, September 4, 2001, S. Kumar.
18. Electroweak Physics at a Linear Collider: The Indian Connection, Indo-Japanese Meeting on Linear Colliders, Centre for Advanced Technology, Indore April 17-18, 2003, S. Raychaudhuri.
19. Do we Really Live in Three Dimensions? IIT Kanpur, December 15-17, 2003, S. Raychaudhuri.
20. Extra Dimensions and Exotica at a Linear e^+e^- Collider, 6th Meeting of Asian Collaboration for Accelerators, Tata Institute of Fundamental Research, December 15-17, 2003, S. Raychaudhuri.
21. Status Report on Braneworld Phenomenology, 8th Workshop on High Energy Physics Phenomenology IITB, Mumbai, January 4-16, 2004, S. Raychaudhuri.
22. Living on the Edge: The Search for a Multi-dimensional World, Institute Lecture, Tata Institute of Fundamental Research, March 10, 2004, S. Raychaudhuri.
23. Brane World Phenomenology (3 lectures), Theoretical Physics Seminar, Tata Institute of Fundamental Research, March 9-12, 2004, S. Raychaudhuri.
24. Monitoring Fields and Charges in OLEDs, Invited Lecture at Indo-Italian Workshop on Organic Semiconductors held at IIT Kanpur from October 14-17, 2003, Y.N. Mohapatra.
25. A Metastability and Non-Debye Relaxation Phenomena due to defect clusters and disorder in semiconductors, Invited Lecture at ICCES 2003, Advances in Computational and Experimental Engineering and Sciences, 2003 Corfu, July 24-29, Greece, Y.N. Mohapatra.
26. Understanding Charge Processes in PLED and OLED, Invited Lecture at IWPSD03, IIT Chennai December 16-30, 2003, Y.N. Mohapatra.

Other Activities

(A) TECHNOLOGY DEVELOPED

DEPARTMENT OF AEROSPACE ENGINEERING

1. Wind Turbine Battery Charger Almost Ready for Transfer, Ghosh Kunal.
2. Technology to produce Nano-material by flame synthesis. Technology to produce Nano-material by flame synthesis (We are the first to produce nanomaterials by flame synthesis in India), D. P. Mishra.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Hige distillation: Ready for transfer; Further development also needed, D.P. Rao.
2. Adsorptive separation of gas mixtures: Ready for transfer; Further development is also needed, D.P. Rao.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. AnglaBharti Technology Transferred to CDAC Pune, JNU, IIT Bombay, Utkal University, IIT Guwahti, CDAC Calcutta, TIET Patiala and CDAC Trivandrum, Ajai Jain.
2. Organized workshop on AnglaBharti Mission, March 28-30, 2004 at IIT Kanpur, Ajai Jain.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Anaesthesia Monitor: This equipment has been developed by GC Ray and Gautam Das. It is a complete product and ready for transfer.
2. Developed the Polymer Light Emitting Diode (PLED) technology of ITO/PEDOT/MEHPPV/Ca/Al and achieved 912 Cd/m² for the devices, which were test operated for more than 44 hours, first ever done in India. Further development for commercialization is required, R.S. Anand.
3. PLED devices have been made on thin plastic sheet, first ever in India. Further development for commercialization is required, R.S. Anand.

4. Led the efforts on Technology Development on Power Distribution Automation hardware and software including, R.P. Gupta and S.C. Srivastava.
 - Automation software to enable remote monitoring, alarm generation and remote control
 - Remote terminal unit (RTU)
 - Remotely operable load break switches suitable both for HV and LV side of distribution transformer
 - Client-Server data communication link over dialup network
 - System instrumentation
 - Automation protocols
 - Distribution automation simulator (a scaled down model of a real-life automated distribution network) to provide a test bed for a comprehensive testing of the developed technology, components and software.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Development of simulator for a Plasma Display Panel (PDP) cell, Samtel Center, Deepak Gupta

DEPARTMENT OF MECHANICAL ENGINEERING

1. Effect of Surfactant on Heat and Mass Transfer Enhancement, Dr. Keshav Kant.
2. Simulated Moving Bed Heat Regenerator, Dr. Keshav Kant.

DEPARTMENT OF PHYSICS

1. Room Temperature STM, Anjan K. Gupta.

(B) SOFTWARE DEVELOPED

DEPARTMENT OF AEROSPACE ENGINEERING

1. Generic Model to Estimate Parameter from Flight data of an Artillery Shell, Delivered, A. K. Ghosh.
2. Six degree of model to evaluate dynamic stability boundaries of an wrap around rocket at supersonic speed, Delivered, A. K. Ghosh.
3. Computer Program for structural optimization. Product is ready for transfer to VSSC (Trivandrum), C. S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. JAVA implementation of Adaptive Centroid Algorithm for Gene Expression Profiling. JB Singh (B Tech student) and S. Garg.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Monitoring and Control Software for Power Distribution Automation, R. P. Gupta.
2. Server Software for Remote Terminal Unit, R. P. Gupta.
3. Application Software for Remote Terminal Unit, R. P. Gupta.
4. Energy Audit and Accounting Software for Power Distribution Utilities, R. P. Gupta.
5. Trouble Call Management Software for Power Distribution Utilities, R. P. Gupta.
6. Dynamic Interaction Study Program for Small Signal Stability Analysis, R. P. Gupta.
7. Developed FDTD code for characterizing inhomogeneous dielectric resonator and also, code developed for generalized filter theory, Animesh Biswas.
8. Brihaspati, Brihaspati Synch. (Ready for transfer), Y.N. Singh.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Closed form analysis of hybrid damping in Smart Structures: Software for simple boundary Conditions have been developed - currently the extension in going on for free-free structures, Dr. Bishakh Bhattacharya.
2. High precision finite element analysis of laminated composite plates: Software for composite plates with embedded sensors and actuators have been developed - closed loop controller design is in progress, Dr. Bishakh Bhattacharya.
3. Hybrid Controls of Flexible Arm Manipulator Software developed for single link manipulator with linearised model; further research is going on to take into account multiple link and nonlinear hierarchic control scheme, Dr. Bishakh Bhattacharya.
4. Modeling of an Annular Combustor, Dr. Bishakh Bhattacharya. (being used by GTRE, Bangalore)

Industry Visited

CENTRE FOR LASER TECHNOLOGY

1. 'Ring Laser Gyro', delivered two talks in the 'Workshop on new avionics technologies' at H.A.L, Korwa, U.P, on 14th and 15th November 2003, S. Sivaprakasam.

DEPARTMENT OF AEROSPACE ENGINEERING

1. NAL Bangalore, 27 Oct. 2003. Kunal Ghosh.
2. Coordinated HAL Training Programme for HAL Management Trainees (Technical) from August-4- Nov.28,2203 and also delivered Lectures organized at IIT Kanpur, N.G.R. Iyengar. NAL, Bangalore, Instrumentation of HANSA Aircraft, August 2003, A K Ghosh.
3. BEL, Bangalore for Handing over of deliverables August 2003, A K Ghosh.
4. CABS, Bangalore, Review Meeting on Financial grant (ARDB) for Flight Experiments October 2003, A K Ghosh.
5. ARDE, PUNE, Development of Neural Model November, 2003, A K Ghosh.
6. ARDE, Pune, Expert member for joint development of Glide bomb by South Africa and India -Peer Review, January 2004, A K Ghosh.
7. ARDE, Pune, Experts member for Joint Development of TCS for unguided rocket in collaboration with Israel Feb 2004, A K Ghosh.
8. HEMRL, IAT, Pune and RRL Bhubaneswar, To discuss about collaborating research work in the field of combustion & allied fields, To discuss about collaborating research work in the field of combustion & allied fields, D. P. Mishra.

DEPARTMENT OF CHEMICAL ENGINEERING

1. IIT Powai, Mumbai. DST PAC meeting. Research Project awarded for Rs. 16,36,800/=, S. Garg.
2. KVIC annual review meeting, Mumbai, January 16-17, 2004. (Ongoing funded research project), S. Garg.
3. BARC, ongoing project, June 3 & 4th, 2003, A. Khanna and P. Munshi.

4. Indo Gulf Fertilizer, Sultanpur for prospective project on Ammonia Plant Simulation, February 13th, 2003, A. Khanna.
5. GAIL, PATA, June 2003, D. Kunzru.
6. DRDL, Hyderabad, Feb. 2004, D. Kunzru.
7. National Chemical Laboratory, Pune; Visited for one week during February 2004 and gave a series of lectures on 'Introduction to polymer physics', V. Shankar.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. Invited by CEO for a technical, discussion, ESSPL, Bhubaneswar, Dec 2003, R.K Ghosh.
2. Satyam Computer Sevices, Hyderabad, May-June 2003, T.V Prabhakar.
3. IIT Delhi, Oct 2003, Dheeraj Sanghi.
4. IIT Chennai, Sep 2003, Dheeraj Sanghi.
5. IISc Bangalore, Sep 2003, Dheeraj Sanghi.
6. TIFR Mumbai, Jan 2004, Dheeraj Sanghi.
7. IIIT Allahabad, Sep 2003, Dheeraj Sanghi.
8. IIIT, Hyderabad, Aug 2003, Dheeraj Sanghi.
9. SAIL, Hyderabad, Aug 2003, Dheeraj Sanghi.
10. Dheeraj Sanghi, AK College of Engineering, Oct 2003 Srivilliputur TN CDAC, Hyderabad July 2003, CDAC Pune July 2003, Dheeraj Sanghi.
11. Dheeraj Sanghi, Wibhu Networks Pune, July 2003 Intel Delhi Dec 2003, EdCIL Noida Mar 2004, Dheeraj Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. CAT, Indore, for DGFS Student and exploring possible avenues for collaboration, December, 2003, P. Sensarma.
2. Visited Asian Institute of Thailand during 20-22 August 2003 and 1-19 December 2003 to deliver invited lectures in the short term course on 'Demand Side

management and Distribution Automation’ and ‘Power System Operation Automation & Management’, respectively. Also visited this institute during 24-26 September 2003 and 14-16 January 2004 to attend a project review meeting and attend an International conference, respectively, S.C. Srivastava.

3. Visited IOE Tribhuvan university, Nepal during 27th Sept. to 1st Oct. 2003 to deliver invited lectures to their Masters students in the Electrical Eng. Department, S.C. Srivastava.
4. Visited NIT Kurukshetra on 28th November 2003 to deliver invited lectures during ‘POWERFEST 2003’ conference, S.C. Srivastava.
5. Visited Indian Institute of Science, Bangalore in Aug. 2003 as an examiner of MSc (Engg.) Thesis, S.P. Das.
6. Visited General Electric, Bangalore in Aug. 2003. To have general interaction. Indian Institute of Science, Bangalore in Jan. 2004 as an examiner of Ph.D. Thesis, S.P. Das.
7. Visited BHEL, Hyderabad in Nov. 2003 as the Chairman, Preliminary Design Review and Critical Design Review Committees (May 2001 and Nov. 2003) for review of ADA, Bangalore sponsored project to BHEL, Hyderabad. The project was on The development of compact 40 kVA, 400 Hz generator for Light Combat Aircraft, S.P. Das.
8. ADE, Bangalore in Jan. 2004 to have general discussion, S.P. Das.
9. Visited Power Grid Corporation of India, Bhauti, Kanpur with UG/PG Students (EE330, EE630, EE632), S.N. Singh.
10. Visited Centre of Advanced Technology, Indore (6/2/2004) for discussion related to projects, S.N. Singh.
11. Visited Department of Electrical and Computer Engineering, Clemson University, Clemson, South Carolina, USA. To carry out research activities under the ongoing Indo-US collaborative project sponsored by DST and NSF [DST/EE/20000160]. 07-12 October 2003, S. Kar.
12. Visited to SAMTEL factory in Ghaziabad in connection to CRT Tubes, Nandini Gupta.
13. Visited M/s Wibhu Technologies, Pune in March 2004 to deliver a talk on antenna for wireless LAN applications, A. R. Harish.

14. Visited AICTE, New Delhi as an expert on making the syllabus for AMIE courses on Electrical Engineering, Nov. 2003, Anjan K. Ghosh.
15. Visited HBTI Kanpur as an AICTE expert for evaluating AICTE proposals, Dec. 2003, Anjan K. Ghosh.
16. Visited UP Tech University, Lucknow to attend a seminar organized by AICTE on evaluating Technical Colleges, Dec. 2003, Anjan K. Ghosh.
17. Visited BHEL R&D Centre in Hyderabad in March 2004, Anjan K. Ghosh.
18. Visited, Faculty of Engineering, University of Malaysia, Sarawak, December 15, 2003-December 26, 2003, Dr. S. Qureshi.
19. Visited Interra IT Pvt. Ltd., Noida several times during Feb. 2003 to Feb. 2004, R. P. Gupta.
20. Visited M/s Cypress Semiconductor Inc., Bangalore, from June 2003-July 2003, Animesh Biswas.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Invited Talk on Entrepreneurship and Marketing at Gaur Hari Singhania Institute of Management and Research, Kanpur, March 2004, S.Swami.
2. Evaluation of IT System: A case study, IIIT Hyderabad, Feb. 13, 2004, V. Bansal, and Himanshu Sadana.
3. Evaluation, Rating and Certification of Online Documents, IIIT Hyderabad, Faculty Workshop SAP, Bangalore Feb. 23-27, SAP Lab India, V. Bansal and Mayank.
4. Visited BILT, Gurgaon and Siemens Pvt. Ltd. to study their ERP implementations, V. Bansal.
5. Issues in forecasting Electricity Demand in South Asian Countries SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.
6. Forecasting Electricity Demand in South Asian Countries – Results SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.
7. Emerging Competitive Scenario in Indian Power Sector, Seminar at Indira Gandhi Institute of Development Research (IGIDR), Mumbai, 12th Dec. 2003, Anoop Singh.

8. Regulatory Issues in Power Sector Restructuring and Power Sector Scenario of India; delivered two lectures at IIM, Lucknow for Training Program on General Management for NTPC Managers, 14th April 2003, Anoop Singh.
9. Regulatory & Policy Developments in Indian Power Sector lecture in QIP sponsored short-term course on Electric Power System Operation and Management Restructured Environment, July 21-25, 2003, Anoop Singh.
10. Economics of Regulation, Guest Lecture, Dept. of Electrical Engg., IITK, 9th April 2003, Anoop Singh.
11. Invited lecture at National University of Singapore, Information systems Dept, 26/12/03 on New research directions for KM in the social sector-Knowledge exchange experience at Digital Mandi, Jayanta Chatterjee.
12. Invited lecture at Conference of Agricultural extension officers organized by National Institute of Agricultural Marketing, manage.com –10th Oct, 03, Jayanta Chatterjee.
13. Invited talk at Dept of Biotechnology on Business Incubation at biotechnology Parks. – 18th July, 03, Jayanta Chatterjee.
14. Demonstrated the software and transaction technologies developed for Medialab Asia KL hub at www.digitalmandi.net (i) 'Web and IVR/CTI based agro-commodity trading with integrated back end system' (ii)'Platform independent web to mobile SMS based bi-directional knowledge exchange using adaptable business rules' (iii) User co-creation of electronic content for rural development applications. 5(c)- Industries and organizations visited on professional engagement: Larsen & Tubro, Indian Airlines, NAFED, CII, Hughes ECL, Siemens Ltd, Lego-serious play APAC (Singapore), Jayanta Chatterjee.
15. Institute Visited: National University of Singapore, Hong Kong Poly University, Nanyang Technical University, Jamia Milia Islamia University, UP state Institute of Rural development, Jayanta Chatterjee.
16. Appointed Adjunct Professor at the Industrial Systems Engineering Dept. of Hong Kong, Poly University and on the International Research Advisory body of the KM laboratory at National University of Singapore and International Advisory body of Institute of Information and knowledge Management, Straits Knowledge, Singapore, Jayanta Chatterjee.
17. Appointed Lead researcher of The School of Organizational learning and transformation, at the Global Institute of Flexible Systems Management, Jayanta Chatterjee.

18. Awarded a 500\$ prize for the Best paper published in the Flexible Systems Journal at the 3rd GLOGIFT Conference, March 2004.
19. Three short term (6days) courses organized for 110n L&T Senior Managers on 'Competitive advantage creation through Technology and Innovation' as part of the Technology Leadership Program, Jayanta Chatterjee.
20. One day workshop for Block development and Mandi Parishad officers of UP on Information design for electronic trading and NGT for Action Planning, Jayanta Chatterjee.
21. Retention in the Times of Downsizing and Restructuring: End of HRM? Seminar On Talent Hunt & Retention Strategies – Indian Experiences GHSIMR & NIPM, Kanpur, Feb. 15,2004, Rahul Varman.
22. Organised workshop: One-Day Workshop on Learning by Doing Engineering, Desing, & Management Education IIT Kanpur, August 9, 2003, A.P. Sinha.

DEPARTMENT OF MATHEMATICS

1. Visited the Institute of Statistics, Munich University, Germany in May 2003, in connection with his research activities, Shalabh.
2. Meeting of the International Statistical Institute (The Netherlands) at Berlin Germany in August, 2003, Shalabh.
3. Visited Katholieke University Leuven, Belgium in December 2003, for collaborative research, Misra, N.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Indian Institute of Advanced Studies, Shimla, 17 April 2003, R. Balasubramaniam.
2. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, June 11-12, 2003, R. Balasubramaniam.
3. Rishi Valley School, Madanapalle, June 23-24, 2003, R. Balasubramaniam.
4. General Motors Research and Development Center, Warren, MI, USA, October 9-10, 2003, R. Balasubramaniam.
5. Indian Institute of Science, Metallurgy Department, Bangalore, November 10, 2003, R. Balasubramaniam.
6. General Electric Corporate Research and Development, Bangalore, November 24, 2003, R. Balasubramaniam.

7. Shiram Pistons Pvt. Limited, Ghaziabad, January 31, 2004, R. Balasubramaniam.
8. Defence Metallurgical Research Laboratory, Hyderabad, February 4, 2004, R. Balasubramaniam.
9. University of Leeds, UK, May 2003, Bikramjit Basu.
10. University of Warwick, UK, May-July, 2003, Bikramjit Basu.
11. University of Cambridge, UK, June 2003, Bikramjit Basu.
12. University of Oxford, July 2003, Bikramjit Basu.
13. A&T North Carolina State University, Greensboro, North Carolina, May 2003, Monica Katiyar and Deepak Gupta.
14. Visiting Faculty, Center Des Materiaux, Ecole des Mines de Paris, July 2003, Anish Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Visited on August 2003 to December 2003, Adjunct Professor, Mewbourne School of Petroleum and Geological Engineering and Department of Aerospace and Mechanical Engineering, University of Oklahoma, USA, K.Muralidhar.
2. Visited TAT A STEEL, Jamshedpur during September 28 - October 4, 2003, N.V.Reddy.
3. AVL Research and Development Center, Graz, Austria, 15th May, 2003, Avinash Kumar Agarwal.
4. Mahatma Ghandhi Institute of Rural Industrialization, Wardha, July 2003, Avinash Kumar Agarwal.
5. Khadi and Village Industries Commission, Mumbai, January 2004, Avinash Kumar Agarwal.
6. General Motors Global Research and Development Center, Warren, Detroit, 12th March, 2004, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Samtel Technology Lab, Ghaziabad, S. Kumar.

(D) PATENTS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Applied for Tandoor Chulla, D. P. Mishra

DEPARTMENT OF CHEMICAL ENGINEERING

1. Pressure swing adsorption; Patent No. 705/DEL/2003, D.P. Rao.
2. A novel rotating bed contactor, Patent No. 356/DEL/2004, D.P. Rao.

DEPARTMENT OF CHEMISTRY

1. Method of preparing magneto-conducting polymer material composites with magnetic and electrically conducting features. Indian Patent No. 859/Del/(2000). Granted US Patent No: 6,627,101 B2, dated Sep.30, 2003, S. Sundar Manoharan and Manju Lata Rao.
2. Magnetoresistive CrO₂ – Polymer Composite Blends, Indian Patent file No. 934/Del/(2000) also as, US Patent file No. 09/829414 Granted, S. Sundar Manoharan.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Anaesthesia Monitor: Provisional Patent No. 167/DEL/2004, G.C. Ray.
2. Application with TIFAC, Y.N. Singh.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Rubber pressure molding, Accepted, Prashant Kumar with K.K. Kar

(E) AWARDS AND HONOURS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Fellow of Indian National Academy Engineering, C.Venkatesan.
2. Swarnajayanti Fellowship, 2003, DST, Sanjay Mittal.
3. Member of the Organising Committee of the Indo-US Frontiers of Science Symposium to be Conducted in January 2005 by the Indo-US Forum, DST, Sanjay Mittal.

4. Aerospace Divisional Award from Institution of Engineering, Chandra Shekhar Upadhyay

DEPARTMENT OF CHEMICAL ENGINEERING

1. Fellow, Indian National Science Academy (elected in 2003), A. Sharma.
2. Fellow, Indian National Academy of Engineering (elected in 2003), A. Sharma.
3. Herdillia Award of the Indian Institute of Chemical Engineers for excellence in basic research (2003), A. Sharma.
4. Shanti Swarup Bhatnagar Prize in Engineering Sciences (received in July 2003), A. Sharma.

DEPARTMENT OF CHEMISTRY

1. Awarded Swarnajayanti Fellowship, F. A. Khan.
2. Astrazeneca Technology Innovation Award, H. Ila.
3. Acharya J. C. Ghosh Memorial Lecture and Medal by Indian Chemical Society, H. Ila.
4. Global Indus Techno-innovators award for research contributions in Nanomaterials and devices, instituted by Indian Business club at Massachusetts Institute of Technology, Boston USA, November 2003, S. Sundar Manoharan.
5. JWT Jones Fellowship, Royal Society of Chemistry (2004), Sandeep Verma.
6. CRSI Medal (Bronze) 2003, Prof. Vinod Kumar Singh.
7. Chairperson "Women Scientist Scheme", (Chemical Science), Department of Science and Technology, New Delhi, H. Ila.
8. Nominated as member of Science and Engineering Research Cell (SERC), Department of Science and Technology, New Delhi, March 2004-2007, H. Ila.
9. Member of CSIR Committee for Chemical Science, H. Ila.

DEPARTMENT OF CIVIL ENGINEERING

1. G. jointly award IGS – Shri R.N. Prasad Biennial prize for the best paper on Slope Stability and Land Slides for their paper published in Indian Geotechnical journal in Dec. 2003 at the IGS Annual Conference held in Roorkee, Basudhar, P.K. and Bhattacharyya.

2. Nominated as Associate Editor of ASCE Journal of Structural Engineering effective from June, 2004, Gupta, V.K.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. R.K Ghosh, Associate Editor of International Journal on Education and Information Technologies (JEIT), ISSN 1548-3401, Jan 2004 <http://itpublish.org/>.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Awarded a cash prize of Rs.1000/- and a Certificate for the Best Poster Paper entitled Effect of the CN-PPV Layer on the performance of PPV/CN-PPV Polymer LED at IWPSD 2003 held at IITM from 16 – 20 Dec 2003, R.S. Anand, A. Awasthi, J. Narain.
2. Invited to join Editorial Board of the ‘International Journal of Emerging Electric Power Systems (IJEEPS) (Berkley Electronic Press), S.C. Srivastava.
3. Invited to be an Editor of the Narosha Publisher’s International Series on ‘Power & Energy’, S.C. Srivastava.
4. Stochastic filtering and and Speech Enhancement using a Recurrent Quantum Neural Network, **Best paper of the conference**, International Conference on Intelligent Sensors and Information Processing, ICISIP-04, Chennai, 4-7 January, Laxmidhar Behera and Bharat Sundaram.
5. Approaches to fragment assembly for DNA sequencing, **Best Student paper**, HiPC Workshop on Soft Computing, 2003, Debashis Dash, Rishi Dhingra and Laxmidhar Behera.
6. Awarded the Fulbright Scholarship by the United States Department of State for visiting the University of Illinois at Urbana-Champaign between May-July, 2003, Arindam Ghosh.
7. Won Indian National Academy Young Engineers Award 2003. Awarded by Indian National Academy, S.P. Das.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Reviewed papers for the following journals: Social Studies of Sciences, Population Review (member of Scientific Review Board), Demography India, A. K. Sharma.
2. Expert, <http://www.sammaditthi.com>, Online Journal of Sammaditthi Social Science Research, 2003, A. K. Sharma.

3. Member of Scientific Review Board, Population Review, <http://www.populationreview.com/>, 20 Feb. 2004, A. K. Sharma.
4. Received Distinguished Teacher Award, IIT Kanpur for the year 2003, September 5, 2003, Lila Krishnan.

DEPARTMENT OF MATHEMATICS

1. C.L. Chandana Mathematics Awards 2003 by Canadian World Mathematics Foundation, Misra, N.
2. Elected as a Fellow of the Royal Statistical Society, London in the year 2003, Kundu, D.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Editorial Board Member, International Journal of Corrosion Science, Engineering and Technology (former British Corrosion Journal), The Institute of Materials, London, R. Balasubramaniam.
2. Editorial Board Member, Indian Journal of History of Science, Indian National Science Academy, New Delhi, India, R. Balasubramaniam.
3. R. L. Thakur Memorial Award–2003 by Indian Ceramics Society, Bikramjit Basu.
4. BOYSCAST (Better Opportunities for Young Scientists in Chosen Areas of Science and Technology) fellow, Department of Science and Technology, Government of India, 2002-2003, Bikramjit Basu.
5. R.K. Ray and K.A. Padmanabhan, Gouthama.
6. TEM Study of the Role of Precipitate Particles in a Quasi-Single Phase Superplastic Alloy, Gouthama.
7. Presented at EMSI-2003, CPRI, Shimla, April, 2003, Gouthama.
8. ‘Best Oral Presentation Award’ for the Materials Science Category at the conference from amongst 70 oral presentations, Gouthama.
9. Elected as a member of the Continuous casting operating committee (CCOC), AIST, USA, Dipak Mazumdar.

10. Elected as an Editor of The Transactions of The Indian Institute of Metals, Dipak Mazumdar.
11. Consultant to R&D division of Tata Steel (2003-2005), R.K. Ray.
12. Young Scientist Award 2003-2004 by UP Council of Science & Technology, Anish Upadhaya.
13. Young Metallurgist of the Year (2003) Award by the Ministry of Steels and Indian Institute of Metals (IIM), Anish Upadhaya.
14. TMS Foundation's R. Arora International Award-2003 for Materials Science and Engineering by The Minerals, Metals & Materials, Warrendale, USA, 2003, Anish Upadhaya.
15. Invited to serve as a member of the Editorial Advisory Board of the 'Transactions of the Indian Ceramic Society' for two years, May 2003, Anish Upadhaya.
16. Continue as member governing council of Powder Metallurgy Associate of India (PMAI), Anish Upadhaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Elected as the Fellow of the Indian National Academy of Engineering, G. Biswas.
2. Best Teacher Award for TA201N - Introduction to Manufacturing Processes (Institute Core Course), 2nd semester, 2002-2003, N.V.Reddy.
3. Best Tutor Award for TAI0IN - Engineering Graphics (Institute Core Course), 2nd semester, 2002-2003, N.V.Reddy.
4. Best Teacher Award for ME663 - Metal Forming (PG compulsory and UG Elective). First Semester, 2003- 2004, N.V.Reddy.
5. Humboldt Fellowship, Germany, P.K.Panigrahi.
6. Selected in the Technical Committee of IASTED, World modeling and simulation forum for 2003-04, Bishakh Bhattacharya.
7. Fellow, International Society for Genetic and Evolutionary Algorithms (ISGEC), since 2003, K.Deb.
8. Fast Breaking Paper Award in Engineering, ISI Web of Science's Essential Science Indicators (ESI), Feb 2004, K.Deb.

9. Fridrich Wilhelm Bessel Research Award, Alexander von Humboldt Foundation, Germany May - November, 2003, K.Deb.
10. Associate Editor, IEEE Transactions on Evolutionary Computation Journal, IEEE 2002-2004, K.Deb.
11. Associate Editor, Evolutionary Computation Journal, MIT Press 2002-2007, K.Deb.
12. Editorial Board Member, Engineering Optimization Journal, Taylor and Francis 2002-2004, K.Deb.
13. Editorial Board Member, Genetic Programming and Evolvable Machines, 2003-2006, K.Deb.
14. Member of The Editorial Board of International Journal of Manufacturing Technology and Management, Inderscience Publishers, U.K., V.K. Jain.
15. Member Of. The Advisory committee of International Journal of Advanced Manufacturing Technology, Springer Verlag, London (U.K.), V.K .Jain.
16. Member of the editorial board of Journal of Automobile Engineering Proceedings of IMechE, Part-D, Published by Institution of Mechanical Engineers, London, UK, Avinash Kumar Agarwal.
17. Guest Editor for a Special Issue on Alternative Fuels, for the Journal of Automobile Engineering, Published by Institution of Mechanical Engineers, London, UK, Scheduled for First Quarter of 2005, Avinash Kumar Agarwal.
18. Listed in Marquis Who's Who is Science and Engineering (2003-2004 edition), Avinash Kumar Agarwal.
19. Member of DST Expert group on Alternative Fuels and Retrofitting constituted by Government of India, Avinash Kumar Agarwal.
20. Reviewer for ASME Transactions Journal Of Engineering For Gas Turbine And Power, Avinash Kumar Agarwal.
21. Reviewer for ASME. ICED Spring and Fall Conferences 2003, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Elected FELLOW of the Indian Academy of Sciences, Bangalore, D. Chowdhury.
2. Distinguished Teacher's Award, IIT Kanpur, 2003, H.C. Verma.

(E) CONTINUING EDUCATION ACTIVITIES

DEPARTMENT OF AEROSPACE ENGINEERING

1. Delivered Lectures in the Helicopter Technology Programme from Jan.4- April 28,2004 for HAL and Armed Forces Engineers organized at IIT Kanpur, N.G.R. Iyengar.
2. Development & Aerospace Information Panel QIP Course on "Renewable Energy & Alternative Fuels", Dec. 1-5, 2003;One of the Coordinators, Kunal Ghosh.
3. Organised the one-semester- Certificate Program on Helicopter Technology for sponsored candidates from Army, Air force and HAL. Second batch of participants successfully completed the program in April 2003, C.Venkatesan.
4. Instructor for a CEP Course titled, "Flight Identification Methods" conducted at IIT Mumbai-(19th – 21st January, 2004), A K Ghosh.
5. Combustion generated emission & its control, QIP, 1st - 5th March 2004, 28, IIT, Kanpur, D. P. Mishra.
6. HAL Management Trainee Programe, R. K. Sullerey.
7. Taught part of course on "Aircraft Structural Analysis" to the Graduate Engineering Trainees from HAL. Also taught part of course on Vibration Analysis for the "Helicopter Technology" course held from January 2004 to May 2004, C. S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. 'Process Safety and Inherently Safer Design', Sultan Qaboos University, Muscat, Oman May 2001, J.P. Gupta.
2. 'Inherent Safety, Health and Environment', Loughborough University, Loughborough, UK, J.P. Gupta.

DEPARTMENT OF CIVIL ENGINEERING

1. Lectured on Earthquake resistant design of steel connections in the One-Semester (31 July-5 Dec., 2003) certificate programme on Earthquake Resistant Design held in the Dept. of Civil Engg., I.I.T. Kanpur under the National Programme on Earthquake Engg. Education, Chakrabarti, S.K.
2. Recent Trends in Bituminous Mix Design, self-sponsored, IIT Kanpur, August 11-13, 2003, Numbers of participants: 31, A. Das.
3. Modern Trends in Pavement and Traffic Engineering, QIP, IIT Kanpur, March 28-31, 2004, Number of participants: 19, A.Das.
4. Organized and coordinated a Workshop on, INTERLINKING OF INDIAN RIVERS, at I.I.T. Kanpur on Sept. 20, 2003, Datta, Bithin.
5. NPEEE Supported One-Semester Certificate Programme in Earthquake Resistant Design (July – December 2003), IIT Kanpur, Jain, S.K.
6. Seismic Design of Reinforced Concrete Buildings (January 9 – 10, 2004, 140 participants, for Govt of Delhi; 2 days), Delhi, Jain, S.K.
7. Workshop on IS:13920, July 6, 2003 (one day); about 70 participants, Jain, S.K.
8. Workshop on IS:1893, Ahmedabad, Jain, S.K.
9. Training of Municipal Engineers in Review of Building Plans for Seismic Safety, (November 14-15, 2003) Ahmedabad, Jain, S.K.
10. Workshop for Earthquake Engineering Curriculum in Polytechnics of UP and Uttaranchal (29-30 July 2003), IIT Kanpur, Jain, S.K.
11. National Workshop on Introducing Earthquake Engineering in Civil Engineering Curriculum (August 22-23, 2003), IIT Kanpur, Jain, S.K.
12. Review Workshop for Resource Materials in Earthquake Engineering Education (25-29 August 2003), IIT Kanpur, Jain, S.K.
13. Curriculum Workshop for Architectural Programme in Colleges of Gujarat (October 21, 2003), Ahmedabad, Jain, S.K.
14. ‘Concrete structures and durability’, Invited lectures at the one-day workshop at Talcher Thermal Power Station, National Thermal Power Corporation, Talcher, Orissa, February 19th, 2004, Misra Sudhir.

15. 'Basic concrete engineering' National Seminar on Advances in Building Construction and Rehabilitation Technology, Organized by the Institute Works Department, IIT Kanpur, March 2nd – 4th, 2004, Misra Sudhir.
16. Short Course on Introduction to Earthquake Engineering for engineering college and polytechnic teachers of State of Gujarat, Ahmedabad in July 2003, (24 participants for GSDMA), I.I.T.Kanpur in August 2003 (19 participants under NPEEE), Murty, C.V.R.
17. Taught in the AICTE_ISTE short term course on Design and Disaster Mitigation and Management of Structures conducted for teachers of engineering colleges and polytechnics by the Gandhi Institute of Technology and Management at Visakhapatnam on 15-16 April 2004, Murty, C.V.R.
18. Sensitisation of Architects of Indian Institute of Architects 06 January 2004 at New Delhi, 14 April 2004 at Jammu, Murty, C.V.R.
19. Sensitisation of Engineers of Government of NCT Delhi, 09 January 2004 at New Delhi, Murty, C.V.R.
20. Launch of Urban Earthquake Vulnerability Reduction Program, of Ministry of Home Affairs, GoI, New Delhi, 12 January 2004 in State of Maharashtra at Pune 13 January 2004 at State of Uttar Pradesh at Lucknow, Murty, C.V.R.
21. Training of Trainers by National Center for Disaster Management, New Delhi.
22. 28 July 2003 at New Delhi, 16 September 2003 at New Delhi, Murty, C.V.R.
23. Conducted Summer Camp 2003, for UG CE students from across the country, Industry sponsored, Lohani B.
24. Preparation for the Summer Camp 2004 including the followings; contacting various colleges for participation, contacting eminent persons in CE for guest speakers contacting different government and private agencies for sponsorship, Mohapatra, P.K.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. QIP Sponsored Summer School: Real-time Signal Processing and neural Computation using DSP Work Station, IIT Kanpur, July 7-19, 2003, G.C. Ray.
2. Self-sponsored, Real-time Signal Processing and neural Computation using DSP Work Station, IIT Kanpur, Sept. 29 – Oct. 4, 2003, G.C. Ray.
3. Self-sponsored course on Hands on Experience with DSP Work Station, Winter School, December 1-6, 2003, IIT Kanpur, G.C. Ray.

4. QIP Course : Recent trends in Displays : Organic Light emitting diodes, March 15-19, 2004, B. Mazhari.
5. Organized a Short term course on Electric Power System Operation and Management in Restructured Environment, QIP sponsored, IIT Kanpur, 21-25 July 2003 (Participants: Academics- 30, Industry- 23), S.N. Singh.
6. Organised Workshop-cum-Technology Dedication of Power Distribution Automation, Indian Institute of Technology Kanpur, India, February 22-23, 2003, R.P. Gupta.
7. Self sponsored short course on Trends in Techniques and Practices in Sensors and Instrumentation, Sept. 8-12, 2003, Anjan K. Ghosh.
8. Organizing committee members in Joint Indo US Science and Technology Forum on Futuristic Manufacturing, IIT Kanpur, March 2004, Anjan K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Sustainable Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26 – July 05, 2003, A. K. Sharma.
2. Social Indicators of Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 16-July 05, 2003, A. K. Sharma.
3. Role of NGOs in Improving the Environment, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26- July 05, 2003, A. K. Sharma.
4. PRA as a Tool for Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26-July 05, 2003, A.K. Sharma.
5. Delivered a lecture on A qualitative study of everyday meaning of mental health: Some insights regarding common-sense and social representations in the 9th UGC-ASC Refresher Course in Psychology on Human Behaviour: Research Issues and Insights, held at Department of Psychology, University of Allahabad from September 6-24, 2003, Shikha Dixit.
6. Organised a two day Workshop (along with Dr. K.G. Kshirsagar) on Intellectual Property Rights, Gokhale Institute of Politics and Economics, Pune, sponsored by the Ministry of Human Resource Development, New Delhi, March 27-28, 2004, P. M. Prasad.

7. Lecture on Zoning Issues in Environmental Problems for the participants of UGC Refresher Course on Urban and Rural Development, Gokhale Institute of Politics and Economics, Pune, August 29, 2003, P. M. Prasad.
8. Participated in the Course Criminology and Forensic Science at National Institute of Criminology and Forensic Science, Delhi, During, September 2- 22, 2003, P. M. Prasad.
9. Organized the Linguistics Session at the 27th All India Social Science Congress, at IIT Kharagpur, December 3- 7, 2003, B. N. Patnaik.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Gave lectures of Design of Miniature Cryocoolers, Experimental Techniques, and Inverse Determination of Local Heat Transfer Coefficient, in the QIP-sponsored course entitled CAD of Thermal Systems, July 2003, K.Muralidhar.
2. Short term course on CAD of Thermal Systems, Period: 14th July to 19th July 2003, Number of participants: 45, P.K.Panigrahi.
3. Organized a five-day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 1, for TISCO Engineers, at IIT Kanpur, July 14-18, 2003, P.M.Dixit.
4. Organized a five day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 2, for TISCO Engineers, at TISCO Jamshedpur, September 29-October 3, 2003, P.M.Dixit.
5. Organized a five day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 3, for TISCO Engineers, at IIT Kanpur, December 08-12, 2003, P.M.Dixit.
6. A one-week short course sponsored by Quality Improvement Program for engineering college teachers and industry entitled Renewable Energies and Alternative Fuels 1 5t to 5th December 2003, attended by 30 faculty members from engineering colleges, Dr. Avinash Kumar Agarwal.
7. Summer School at IACS, Kolkata, A.K.Mallik
8. Winter School at ISI, Kolkata, A.K.Mallik

DEPARTMENT OF PHYSICS

1. Delivered lectures on Computational Statistical Physics for nine hours at the sERC on Statistical Physics, TIFR, Mumbai (2004), D. Chowdhury.
2. Latest development in Physics IIT Kanpur Sept 15-19, 2003, P. Chand & K. Shahi.
3. Developed and taught two new courses (i) Physics of Information Processing; (ii) Nonlinear and Quantum Optics, H. Wanare.
4. Gave lectures to teachers of Kendriya Vidyalaya in Electrodynamics – Teaching, H. Wanare.
5. Closely involved in Restructuring of the Physics Syllabus of the CBSE, H. Wanare.

(F) PARTICIPATION IN HIGH LEVEL INDUSTRY ACADEMIA INDUSTRY INTERACTION PROGRAMME DURING SUMMER

DEPARTMENT OF AEROSPACE ENGINEERING

1. Participated in 1st AR&DB Manpower Meeting, Center for Airborne Systems (CABS), Bangalore, 27 Oct.2003, Kunal Ghosh.
2. Invited to attend and present our efforts in initiating the Helicopter Technology program at IIT Kanpur at the one-day session organized by INAE at Delhi in April 2003, C. Venkatesan.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Participated in 3G UMTS Standardization meetings representing Philips Research Labs., USA in May 2001, June 2001 and Nov. 2001, Ravi Motwani.
2. Visited Interra Software (India) Pvt. Ltd., Noida for interaction in strategic planning and technology initiatives, May – July, 2001, Sachchidanand.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Institute of Management, Patna, During Summer 2001, Sharan Raka, L.N. Mishra.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. General Motors Research and Development Symposium, November 10, 2003, Bangalore, R. Balasubramaniam.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Commercialisation of the indigenously developed Distribution Automation components under Technology Development Mission on Power Distribution Automation at IIT Kanpur is an important aspect. The above objective can be easily achieved through the demonstration project at pilot level in the utility environment. To realize the above demonstration project, while IIT Kanpur will provide its expertise to develop and integrate the system, it will take help of other industries such as Indian Telephone Industries, Raebareli and Interra Software (India), Noida for executing specific tasks in the project. These may include providing necessary components and equipments along with its installation and commissioning on the site for the implementation of the Distribution Automation project. It may be noted that the INTERRA Software (India) Limited and Indian Telephone Industry, Raebareli are already involved and signed MOU with IIT Kanpur in the automation activities of distribution system, R.P. Gupta.

(G) ANY OTHER IMPORTANT ACTIVITY NOT SPECIFIED IN ABOVE COLUMNS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Co-Coordinator of "AR&DB Structures Panel Review Meeting" held at IIT Kanpur from 30/3/04 to 1/3/04, C. S. Upadhyay.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Nominated as an expert member, Board of studies for the M.Sc. program in Biotechnology in CSJM University, Kanpur, S.Ganesh.
2. Review two research papers for the journal, Genomics (2003 and 2004) and one paper for the journal Journal of Clinical Investigations (2003), S.Ganesh.
3. My student Mr. KNK Harekrishnen won the best poster prize on peptide models for mammalian selenoproteins, Gurunath.
4. Organized Bioinformatics and Computational Biology session as part of the International Conference on Mathematical Biology in Feb 2004, along with Balaji Prakash, R. Sankararamakrishnan.
5. Member of Board of studies of Bioinformatics, Chhatrapati Shahu Ji Maharaj University, Kanpur, R. Sankararamakrishnan.

6. Reviewed manuscripts for the journals Current Science, Indian Journal of Chemistry Section A, Indian Journal of Chemistry Section B, R. Sankararamakrishnan.
7. Refresher course in Molecular & Developmental Genetics, Sponsor: Indian Academy of Sciences, Bangalore, Conducted at: Cytogenetics laboratory, Department of Zoology, Banaras Hindu University, Varanasi 221 005 Date: July 2-14, 2003, Instructor, K. Subramaniam.
8. International workshop on Cell Biology, Institute for Bioinformatics and Applied Biotechnology, Bangalore Date: February 28 – March 7, 2004, Instructor, K. Subramaniam.
9. Member of the Task Force meeting on HRD programs organized by Department of Biotechnology at New Delhi on 4th June 2003, P. Sinha.
10. Attended First Meeting of the Members of Society of Biotech Park, Lucknow held on 22nd Feb'2004 at the Biotech Park site Office, and Lucknow, P. Sinha.
11. Invited talk in seminar (Title of Talk- Growth & Potential of Biotechnology and Bioengineering Sciences) 24th April'04 at CMS-Auditorium, Lucknow, P. Sinha.
12. Organized Biotechnology Track of the TIE UP CALLING 2004 on 21st Feb'2004 at Methodist High School, 73, Cantonment, Kanpur 208004, P. Sinha.
13. Organized Short-term laboratory workshop in genetics and molecular biology at IIT Kanpur, 18th to 25th October 2003, P. Sinha.

Research Grants Received at BSBE

1. Department of Science & Technology: Rs 9.69 Lacs Title: Cloning, Expression, Purification and Crystallization of Era, a GTP binding protein from Helicobacter Pylori' from 2003-2006, B.Prakash.
2. Ministry of Human Resource Development R& D grant: Rs. 15 Lacs. Title: Structural investigations on Bex, a GTP binding protein from Bacillus Subtilus' from 2003-2006, B.Prakash.
3. International Senior Research Fellowship award from Wellcome Trust, United Kingdom: Approx. Rs 1.96 Crores. Title: Structural Studies on GTPases and EDG Family G Protein-Coupled Receptor. From 2004 - 2009, B.Prakash.

4. DST-Fast Track: Molecular analysis of Lafora disease patients from Indian population, Rs. 10 lakhs, Jan 2004-Dec. 2006, Undertaken New Project S.Ganesh.
5. DBT research project Isolation and characterization of microbial strains degrading 234 nitro-toluene April 2004-March 2006. Rs. 10.14 lakhs, R. Gurunath.

DEPARTMENT OF CHEMICAL ENGINEERING

1. As AICTE expert for National Board of Accrediation to Sant Longowal Institute of Engineering & Technology Longowal, November 20th, 21st and 22nd, 2003, A. Khanna.
2. Madhav Institute of Engineering & Technology, Gwalior, December 19-21st, 2003, A. Khanna.
3. Sinhgad College of Engineering, Pune, January 23-25, 2004, A. Khanna.
4. Siddhaganga Institute of Technology, Tumkur, February 27th – 29th, 2004.D. Kunzru, Member, PAC of Chemical Engg, Dept. of Science & Technology, New Delhi, A. Khanna.
5. Member, Expert Committee for Fast Track Proposals in Engg. Science, Dept. of Science & Technology, New Delhi, D. Kunzru.
6. Member, Expert Committee in Engg. Sciences for Women Scientist Scheme, Dept. of Science & Technology, New Delhi, D. Kunzru.
7. Member, Fist Committee for Engg. Sciences, Dept. of Science & Technology, New Delhi, D. Kunzru.

DEPARTMENT OF CHEMISTRY

1. `Structure and Dynamics of Hydrogen bonds in bulk and interfacial aqueous solutions: Classical and ab initio molecular dynamics studies', funded by CSIR, started in June 2003, New Research Projects, A. Chandra.
2. `Structure and dynamics of molecular solutions at interfaces: Theoretical studies using classical and quantum methods', funded by DST, started in April 2003, New Research Projects, A. Chandra.
3. `Excess protons, electrons and metal atoms in hydrogen bonded nanoclusters: Studies of structural, dynamical and electronic aspects

through ab initio molecular dynamics ‘, funded by DST (Nanoscience initiative), started in March 2004, , New Research Projects, A. Chandra.

4. CSIR: A New, Flexible and Stereoselective Synthesis of *trans*-Hydrindane Systems Present in Biologically Active Natural Products (2002-2005); 10.8 lakhs, Sponsored Projects, F. A. Khan.
5. Swarnajayanti (DST): Tetrahalobicyclo[2.2.1]heptane and tetrahalobicyclo[2.2.2]octane derivatives: Stereoselective inextricable templates in natural product and designed target syntheses (2003-2008); 96.6 lakhs, Sponsored Projects, F. A. Khan.
6. Selenocysteine containing peptides as models for mammalian selenoproteins 2001-2004; CSIR, Rs 11.2 lakhs, Ramanathan Gurunath.
7. Isolation and Characterization of microbial strains for the degradation of hydroxy and nitro toluenes, 2004-2006; DBT, Rs. 10. 16 lakhs, Ramanathan Gurunath.
8. CSIR project: Design and Development of New Multicomponent Couple Reactions sanctioned by CSIR (sanction no. 01(1854)/03 EMR II), Dtd. 12th March 2003, H.IIa.
9. DST project: New Synthetic Strategies for Small Molecule Heterocycles and Related Natural Products *via* Palladium (0) and Radical Mediated C-C and C-Heteroatom Bond Formation” sanctioned by DST (SP/S1/GO-05/2001) , H.IIa.
10. Astrazeneca project: Regioselective Synthesis of Substituted and Fused Quinoxalines, sanctioned by AstraZeneca Research Foundation, Bangalore, Karnataka., H.IIa.
11. Magnetoresistive Studies in Half – Metallic Ferromagnets, Collaborative Indo-German Research Project funded by Department of Science and Technology, New Delhi and BMBF, Germany, S. Sundar Manoharan.
12. Acoustic wave Stimulated Synthesis of ferromagnetic alloys and oxides” funded by Department of Atomic Energy (DAE), BRNS, Mumbai, S. Sundar Manoharan.
13. Consultancy project: Studies on Cathodo-luminescent materials for Display technology, With SAMTEL COLORS, Ghaziabad, Delhi, S. Sundar Manoharan.

14. Nerve gas inactivation by metalated polymer, Defense Materials, Stores & Research Development Establishment, DRDO, 2003-2004, Verma S.
15. Functional mimicry of copper oxidases: C-H bond activation by bioinspired nucleobase polymeric templates, SERC, Department of Science and Technology, 2003-2006, Verma S.
16. Parallel synthesis of functional monomers and polymers: Applications in catalysis and electrical conductance studies, Ministry of Human Resources Development, 2004-2007, Verma S.
17. CSIR: Osteoporosis project in collaboration with NIO Goa (2003-2004); Rs 5 lakhs, Sponsored Project, Vinod K. Singh.
18. DST: Chemistry of Aziridines (2003-2006); Rs 20 lakhs, Sponsored Project, Vinod K. Singh.
19. Neurogen Corp. USA: Synthesis of fragments (2003-2004); US\$160,000/-, Consultancy Project, Vinod K. Singh.
20. Cyclopropanes as surrogates to molecules of potential interest, Application to selected natural products synthesis, 2004-2006; DST, Rs 20 lakhs, Sponsored Project, Veejendra K. Yadav.

DEPARTMENT OF CIVIL ENGINEERING

Research/Consultancy Projects

1. Visited the Department of Civil Engg., Univ. of Illinois at Urbana-Champaign, USA in July 2003, Chakrabarti, S.K.
2. Chakrabarti, S.K. completed the consultancy project, Vetling of Structural Design of 200 MLD Water Treatment Plant at Ganga Barrage (Kanpur) (sponsored by : Barrage Unit, U.P. Jal Nigam, Kanpur : Value : Rs. 3.0 lakh, Chakrabarti, S.K.
3. Worked as Vice-President, Indian Society of Earthquake Technology (ISET) in the first year of this term Gupta, V.K.
4. Worked as Editor, ISET Journal of Earthquake Technology for the consecutive sixth year Gupta, V.K.
5. Hydraulic Model Studies for River Training Works on the Ghaghra River near Kamariaghat, World Bank Project Sponsored by PCC Services, Lucknow, UP, Report Submitted September 2003, Amount Rs. 8,43,560, Jain, A.

6. Physical Modeling of Ghaghra River for the Selection of a Bridge Site near Behraich, World Bank Project Sponsored by The DHV Consultants BV, Lucknow, UP, Report Submitted June 2003, Amount. Rs. 4,76,000, Jain, A.
7. Active faults along northwestern Himalayan foothill zone: Implications to the great Himalayan earthquakes. Amount Sanctioned Rs. 402,000/=, Duration: 3 years. Funding Agency: DST, New Delhi (under fast track Young Scientist Scheme, Malik, N. Javed.
8. Malik, N. Javed, Title: DSM generation using high altitude satellite photos for identification and mapping of active tectonic landforms related to paleo-earthquake in Kumaon Himalaya. Amount Sanctioned Rs. 15,00,000/-. Funding Agency:3 years. Funding Agency:MHRD, New Delhi, Malik, N. Javed.
9. Assessment of technology for low-cost housing schemes of Govt. of India, Wizmin management consultants, Kanpur, Misra Sudhir.
10. Misra Sudhir, Assessment of quality of concrete construction, Mitsui Kensetsu India Ltd., Misra Sudhir.
11. Misra Sudhir, Inspection of RBI Buildings in Kanpur, Reserve Bank of India, Misra Sudhir.
12. Misra Sudhir, Inspection of civil works at development sites, Uttar Pradesh State Industrial Development Council (UPSIDC), Misra Sudhir.
13. MOU with Geological Survey of India (GSI), Calcutta, Patra, N.R.
14. Continuing Member, Project Evaluation Committee on Earth and Environmental Sciences, CSIR, New Delhi, Raymahashay, B.C.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. Member programme committee CIT Dec 2003, R.K Ghosh.
2. Resource person, International Workshop in Mobile Commerce, Dec 2003, R.K Ghosh.
3. IIT Kanpur Hackers' Workshop 2004. Feb 23-24, 2004, Deepak Gupta.

Sponsored Projects

1. E-pip – Everyboby's Platform for Information Processing, Media Lab Asia, 28 lacs, T.V Prabhakar.
2. Eclipse Innovation Grant, IBM, \$15,000, T.V Prabhakar.
3. Project Monitoring Toll, MHRD, 5.00 lacs, T.V Prabhakar.
4. Technologies for Monitoring Gigabit networks Dept of IT, MCIT, New Delhi, Rs. 60 lakhs, Dheeraj Sanghi.
5. Enabling IPv6 on ERNET Dept of IT, MCIT, New Delhi, Rs. 10 lakhs, Dheeraj Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Acquisition (in process) of a high-end rapid PCB prototyping facility with scope for PTH rendering and multi-layer board fabrication, P. Sensarma.
2. Guest Researcher, Fraunhofer Institute of Autonomous Intelligent Systems, Germany, May 19 2003 – July 18 2003, Laxmidhar Behera.
3. Involved in Distance Education programme for Chattisgarh Govt., Y.N. Singh.
4. DST-Fast Track: Theoretical and experimental investigation of an artificial treechannels in high voltage polymeric insulation, Nandani Gupta.
5. MHRD-R&D: Experimental investigation into the mechanism of electrical tracing in polymeric insulation, Nandani Gupta.
6. Mentored a team of 3 students for the IEEE Computer Society International Design Competition (CSIDC). The team qualified for participation in the World Finals at Washington DC in July 2003 and won an Honorable Mention, A. K. Chaturvedi.
7. Served as a member of the Awards Committee of SPIE, the International Society of Photonics Engineering, A.K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Sustainable Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26 – July 05, 2003, A. K. Sharma.

2. Social Indicators of Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 16-July 05, 2003, A. K. Sharma.
3. Role of NGOs in Improving the Environment, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26- July 05, 2003, A. K. Sharma.
4. PRA as a Tool for Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26-July 05, 2003, A.K. Sharma.
5. Delivered a lecture on A qualitative study of everyday meaning of mental health: Some insights regarding common-sense and social representations in the 9th UGC-ASC Refresher Course in Psychology on Human Behaviour: Research Issues and Insights, held at Department of Psychology, University of Allahabad from September 6-24, 2003, Shikha Dixit.
6. Organised a two day Workshop (along with Dr. K.G. Kshirsagar) on Intellectual Property Rights, Gokhale Institute of Politics and Economics, Pune, sponsored by the Ministry of Human Resource Development, New Delhi, March 27-28, 2004, P. M. Prasad.
7. Lecture on Zoning Issues in Environmental Problems for the participants of UGC Refresher Course on Urban and Rural Development, Gokhale Institute of Politics and Economics, Pune, August 29, 2003, P. M. Prasad.
8. Participated in the Course Criminology and Forensic Science at National Institute of Criminology and Forensic Science, Delhi, During, September 2- 22, 2003, P. M. Prasad.
9. Organized the Linguistics Session at the 27th All India Social Science Congress, at IIT Kharagpur December 3- 7, 2003, B. N. Patnaik.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Reviewer of Marketing Strategy for the Proposal: Strategy for Marketing the Energy Efficient Cupola and Pollution Control System Among Small-Scale Foundries, by Tata Energy Research Institute (TERI), New Delhi, Swami, S.
2. Session Chairman in the Technical Session on E-Commerce and Information Technology in APORS-2003 International Conference, New Delhi, India, December, 2003, Swami, S.

3. Draft Presentation for IT Policy for UP Development Council, Government of Uttar Pradesh (co-authored with Prof. S. G. Dhande, Director, IIT Kanpur, and Mr. Sanjeev Shriya, President, TiEUP, Swami, S.
4. Session Chairman in the Technical Session on Multiobjective Goal Programming in APORS-2003 International Conference, New Delhi, India, December, 2003, Sharma, R.R.K.

Consultancy Reports

1. Consultant to DFID, UK project on SME Development and Pro-Poor Economic Growth: Developing Financial service Markets in Asia, April-May, 2003, A.P. Sinha.
2. Interim Draft Report on Analysing barriers and policy measures to wider adoption of clean and energy efficient technologies in the power sector (ARRPEEC-III) for AIT, Thailand, Anoop Singh.
3. Consultancy report to L&T India on Strategic Management of Technology and Knowledge across Business Groups and guidance for (a) Market entry strategy for Facility Command centers- Integrated control, automation, safety and security centers in large mixed use establishments (b) Reengineering the L&T EBG range for rural markets-River linking project. (c) Task force agenda for Technology mapping, Jayanta Chatterjee.
4. Report on Market Survey to Access the Business Potential of Industrial Robots in India for BHEL, New Delhi, September 2003, Market Survey to Access the Business Potential of Industrial Robots in India Sponsored by Bharat Heavy Electricals Limited, Corporate Office, New Delhi. Rs. 4.94 Lakhs, Sanjeev Swami.
5. Development of a Decision Support System for Micro-scheduling at Theaters Sponsored by Pathe, The Netherlands, Rs. 3.24 Lakhs, Sanjeev Swami.

Cases Developed

1. The case of Book Stools in a Library, 2003, Rahul Varman.

Short Term Courses

1. Problem solving and Process Re-Engineering for Indian Airlines May 23-25 2003 New Delhi, A.K. Mittal.
2. Follow up Workshop on Problem Solving and Process Re-Engineering for Indian Airlines 30th August 2003 New Delhi, A.K. Mittal.
3. QFD Iran Electricity Company Sari Iran Dec. 5, 2003, A.K. Mittal.

4. Modalities of Product Patent Key note address ASSOCHAM Programme on Amendments to the Patents Act 1970, Lucknow Sep., 2003, A.K. Mittal.
5. ISO 9000:2000 and 5S Invited Lecture Quality Month Small Arms Factory Kanpur November 2003, A.K. Mittal.
6. TQM Invited Lecture Quality month Field Gun Factory Kanpur November-2003, A.K. Mittal.

DEPARTMENT OF MATHEMATICS

1. Invited to be Editorial Board Member of the Journal of Modern Applied Statistical Methods for the year 2003-2005, Kundu, D.
2. Invited to be the Editorial Board Member of the Journal Statistics and Its Applications, Kundu, D.
3. Gave a series of nine lectures in Linear Algebra, in NBHM Sponsored Nurture Program held in IIT Kanpur in June 2003, Lal, A.K.
4. Organized 'International Conference on Mathematical Biology' Feb. 19-21'2004 at the I.I.T. Kanpur. It was participated by about 150 participants including 12 foreign delegates, Chandra, P.
5. Chaired the Environmental Science Session at the 2004 Hawaii International Conferences on Sciences held at Honolulu, HI, U.S.A. during Jan. 15-18, 2004, Sinha, Prawal.
6. Chairman for the plenary session, during the International Conference on Differential Equations, Dynamical Systems and Applications held at Atlanta. U. S.A. during May 19-May 24, 2003, Raghavendra, V.
9. Delivered 4 invited lectures at University of Allahabad, Department of Mathematics, Feb. 26-27, 2004, Kapoor, G.P.
7. Enhanced Fritz John Conditions in Nonsmooth Optimization, Institute for Optimization: University of Halle-Wittenburg, Germany, 17th June 2003, Dutta, J.
8. Regularity Conditions and Optimality in Nonsmooth Vector Optimization, 24th June 2003, Dutta, J.

9. Monotonic Analysis over Cones, Department of Operations Research and Statistics, University of Alicante, Spain, 2nd July 2003, Dutta, J.
10. A Brief Overview of Nonsmooth Optimization, Department of Operations Research and Statistics, University of Alicante, Spain, 4th July 2003, Dutta, J.
11. Visit under the Associateship Programme of the Institute of Mathematical Sciences, Chennai, from May 6-June 6, 2003, Banerjee, M.
12. On the Development of Parallel 3D Unsteady Flow Solver for Vector Parallel Processors, Institut Techno Und Wirtschafts-mathematik (ITWM), Pre-Park, Kaiserslautern, Germany May, 2003, Rathish Kumar B.V.
13. Parallel Iterative Solvers on Anupam Cluster, at BARC, May, 2003, Rathish Kumar B.V.
14. Wavelet based pre-conditioners in Sparse Matrix computation, at IOP, Bhuwaneshwar, Workshop on Wavelets and Applications, Feb. 7-11, 2004, Rathish Kumar B.V.
15. Introduction to numerical simulations in fluid dynamics, AICTE workshop on Simulation & Modelling at Beant College of Engineering, Gurudaspur, 15-20, March 2004, Rathish Kumar B.V.
16. Dominance Based Approach for Local Search Algorithms International Conference on OR, with Industrial and Economic Applications, Jan. 8-10, ISI Kolkata, Sharma, P.
17. XVIIIth International Symposium on Mathematical Programming, Technical University of Denmark, Copenhagen, Denmark, August 2003, Sharma, P.
18. Presented contributory paper, Chaired a session on combinatorial optimization, APORS 2003, Delhi, 7-9th Dec. 2003, Sharma, P.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Investigation of Iron pillar at Kodachadri hills, May 16, 2003, R. Balasubramaniam.
2. Investigation of forge welded iron cannon 'Dal Mardan' at Bishnupur, June 10, 2003, R. Balasubramaniam.
3. Study of bronze disease in Chola bronzes at Tiruchi Museum, Tiruchirapalli, June 19, 2003, R. Balasubramaniam.

4. Study of cast iron cannon in Krishnagiri fort, Krishnagiri, 24 June 2003, R. Balasubramaniam.
5. Investigation of material of construction of Rashtrakuta bronzes, Andhra Pradesh state archaeology department, Hyderabad, June 30, 2003, R. Balasubramaniam.
6. Investigation of iron and bronze cannons in Golconda fort, Hyderabad, November 7, 2003, R. Balasubramaniam.
7. Investigation of the characters of the Delhi iron pillar inscription, April 3, 2004, R. Balasubramaniam.
8. Nucleation of a Group for Research on Emerging Technologies for White Light Illumination, 7 April 2003, IIT Kanpur, Deepak Gupta.
9. International Indo-Italian Workshop on Organic Semiconductors, 14-17 October 2003, IIT Kanpur (with Prof. S. Kumar, Physics), Deepak Gupta.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Developed a biped walking robot for the first time in India, which has possible applications in defense, nuclear, entertainment etc., Ashish Dutta.
2. Actively participated in the organization of Indo-USA collaboration on Futuristic Manufacturing, N.V.Reddy.
3. Representing IIT Kanpur in Expert group on CAD/CAM education (MHRD Initiative) , N.V.Reddy.
4. Modernization of Introduction to Manufacturing Processes Laboratory (On going activity, Institute Core Laboratory), N.V. Reddy.
5. National Symposium for IC Engines and Combustion, 2007 to be hosted at IIT Kanpur. I was responsible for bringing it to IIT Kanpur for the first time, Avinash Kumar Agarwal.
6. Organizing chairing a session on Alternative fuels for compression Ignition Engines in SAE World Congress 2005 to be held in Detroit, April 2005, Avinash Kumar Agarwal.
7. Four modules consisting of 12 lectures of Kinematics of Machines prepared under NPTEL has been delivered for broadcasting in 'Eklavya' channel, A.K.Mallik.

Projects

1. Principle-investigator (with Prof. K.Muralidhar CI), Research Project sponsored by Department of Atomic Energy, Computational Fluid Dynamics Analysis of a low-pressure CVD reactor, as an aid to design. Worth: Rs 14,95,000/- Duration: 2003-2005. Deliverable: Further simulations of a CVD (Chemical Vapour Deposition) Reactor, for design optimisation. V.Eswaran
2. Co-Investigator (with Prof. G.Biswas PI), Research project sponsored by BRNS(Mumbai), CFD Code for Thermal Hydraulics of Neutron Spallation Target for Accelerator Driven Sub-critical System, V.Eswaran.
3. Co-Investigator (with Prof. P .K. Panigrahi PI), Research project sponsored by Naval Research Board (NRB), Active Flow Control by Dynamic Obstacles in Propulsion Applications . Worth:Rs 34,08,600/- Duration:2004-2007, V.Eswaran.
4. New Project Design and Development of a Fire Testing Set-up for Flight Data Recorder, HAL Korwa, Rs. 6.00 Lakhs, B.P.Pundir.
5. Co-investigator, Modernization and Removal of Obsolescence Project, Sponsored by MHRD, Rs. 15 lakhs. (PI: Head, Mechanical Engineering, Co-PI's: N. V. Reddy, Avinash Agarwal and N. N. Kishore), N.V.Reddy.
6. Principal Investigator, A course on Finite Element Applications in Metal Forming for TISCO(R&D) engineers (Four weeks course), TISCO, Jamshedpur, (Rs 2 lakhs). (Prof. PM Dixit is also a Principal Investigator), N.V.Reddy.

DEPARTMENT OF PHYSICS

1. Member, Organizing Committee, International Conference on Unconventional Applications of Statistical Physics (2003), D. Chowdhury.
2. D. Chowdury – Guest EDITOR, T106 of Physica scripta (2003), Published by Royal Swedish Academy of Sciences, D. Chowdhury.
3. M.K. Verma – Educational software for middle-school children on human body, Indian rivers with a team Apne Hath se, IIT Kanpur, M.K. Verma.
4. S. Sivaprakasam – delivered two talks at HAL, Korwa, 14 and 15 Nov. 2003, S. Sivaprakasam.
5. Convener, National Workshop on String Theory 2003, IIT Kanpur, Dec. 8-21, 2003, G. Sengupta.

6. Paris-04: International Meeting on Linear Colliders, Ecole Normale Superieur, Paris, April 19-26. 2004, Joint-Convenor, Working Group on Physics Beyond the Standard Model, S. Raychaudhuri.
7. S. Raychaudhuri - Member of DST PAC on SERC Schools in Theoretical High Energy Physics (2000-2005), S. Raychaudhuri.
8. A number of refreshing Physics experiments at school level were developed. 1-day workshops were conducted at different places. About 300 physics teachers from selected schools were trained, H.C. Verma.