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Ph.D. Students completed their programme  
between 1.4.93 to 31.3.94

Aerospace Engineering

Student Gajbir Singh  
Supervisor(s) Drs G V Rao & N G R Iyengar  
Title Non-Linear Bending, Vibration and  
Buckling of Composite Beams and Plates

Student Jatinder Singh  
Supervisor(s) Dr S C Raisinghani  
Title Unsteady Aerodynamic Modelling for  
Parameter Estimation from Flight Data

Rajeev Lochan  
Supervisor(s) Drs Krishna Kumar & V Alimurthy  
Title Dynamics of Bodies Separating From  
Launch Vehicles

C A Shankara  
Supervisor(s) Dr N G R Iyengar  
Title Analysis of Composite Laminated Plates  
Subjected to Mechanical, Hygral and Thermal  
Loadings

Chemical Engineering

Saibal Ganguli  
Supervisor(s) Dr D N Saraf  
Title Online Optimization and Non-linear  
Analytical Model Predictive Control of a  
Pilot Scale Distillation Column

Ram Prasad  
Supervisor(s) Dr D P Rao  
Title Studies on the Enhancement of the Energy  
Storage in Ground Beneath Solar  
Ponds



Yaqoob Ali  
 Dr Shanker Narasimhan  
 Sensor Network Design for Maximizing  
 Reliability of Chemical Processes

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 Dr M S Rao  
 Studies on Selective Aeromatization of C<sub>3</sub>  
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 K V Jayakumar Dr  
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 Expert System to Design of Concrete Bridge  
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 Xanthate Process for Heavy Metal, Removal  
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Supervisor(s) Sudhir Kumar Jain  
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#### Electrical Engineering

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student Ananda B K  
supervisor(s) Drs A K Gupta, AE & M M Oberai  
title An Experimental Investigation of Structures  
of Flow Behind a Backward Facing Step Using  
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student Manab Kumar Das  
supervisor(s) . Dr P S Ghosh Dastidar  
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Materials & Metallurgical Engineering

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Supervisor(s) V B Tewari  
Title Multiplier and Isomorphism Problems of Some  
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Title Electron Paramagnetic Resonance and Low Field  
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Supervisor(s) Drs R M Singru & V N Kulkarni  
Title Atomic Diffusion and Phase Precipitation  
Studies in Amorphous Metallic Alloys using  
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Mossbauer Spectroscopy

Student Prakash Mathews Dr  
Supervisor(s) R Ramachandran  
Title A Study of the Polarised Structure of the  
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Student Abhay Kumar  
Supervisor(s) Dr H O Bist  
Title High Resolution Laser Spectroscopy of Tantalum,  
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Student Amit Sircar  
Supervisor(s) Drs K Lal ita Sarkar & V C Rao  
Title Laser Induced Fluorescence : Study of V-V  
Energy Transfer in  $CO_2-CF_2Cl_2$ ,  $CO_2C_4$   $H_4S$  and  
 $CO_2-CO_3J_2-Co$  Mixtures

Student 8iplab Bhawal  
Supervisor(s) Drs HS Mani. O Sahdev & ~V Vishvashwara



title studies in Higher Dimensional and  
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Student Gaitri Saini  
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Humanities & Social Sciences:

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Supervisor(s) Dr S K Aithal Hemingway's  
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16. Cogeneration 1n Sugar Industry, Vasantdada Sugar  
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 Department of Chemistry complexes: Synthesis properties reactivity, Society  
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9. Thermal fragmentation of N-Acyloxypyridine-2-thiones: A case of reaction selectivity - Recent trends in the pursuit of selectivity: synthetic organic and bio-organic perspectives, IIT Kanpur, March 1-2, 1994, V. K. Yadav.
10. Synthetic studies on mevinic acids: A convergent of a synthesis analogue, CSIR workshop, NCl, 25-26, 1994, Pune, Feb V.K.Yadav and K.K. Kapoor.
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Department of Civil Engineering

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Department of Computer Science & Engineering

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8th IEE Structure in Complexity Theory Conference, May 1993, San Diego, USA, presented a paper, S. Biswas.

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#### Department of Electrical Engineering

Technical Education, Emerging Technologies, and Optoelectronics, All India Seminar on 'Optoelectronics Education, Research and Technology', Institution of Engineers (India) UP Centre, Lucknow, December 19, 1993 (invited paper) N.C. Mathur.

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Trois-Riovieres, March 4, 1994. 16.
- High frequency parallel resonant DC link for induction  
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Kingston, Ontario. Canada. March 7. 1994. 16.
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 STANDARDIZATION, World Standards Day  
 Celebration with theme, "Information Management - faster  
 and better with global standards", Bureau of Indian  
 Standards, Oct.ober 14, 1993, V. Sinha.
3. BISON - SONET, Seminar on Intelligent Luck Networks,  
 IETE, now, September 11, 1993 (Invited  
 Paper) V. Sinha.

Department of Humanities and Social Sciences

Prospects or NGO/Voluntary Agencies for  
 Development of Women & Children in  
 25th Annual Conference of the 'Orissa Assoc i at Orissa,  
 ion', Ravenshaw Co llege, Cut takck , May 22- Economic  
 23, 1993, B. Rath. Orissa,

Productivity, Efficiency and Equity Aspects of Technology  
 In the context. of Selection of Project Sites XVI Indian  
 Social Science Congress, R.V. College of Engineering,  
 Bangalore, August 10-15, 1993, B. Rath.

3. Environmental Aspects of Ash Pond Utilisation: A Case  
 Study. National Seminar on Envrionmental Projection, Kanpur  
 Productivity Council, Kanpur, Oct. 30-31, 1993, B. Rath  
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 Control\Environmental Delhi, Projects NISTADS, New  
 September 14, 1993, B.Rath.

Impact of International Trade on Growth and Structure of Production & Employment In India: A Semi-closed Input-output Analysis (K.K. Saxena & S.P. Sharma). Presented at the tenth Input-output conference held at the Central University of Hyderabad, March 20-22, 1994, K.K. Saxena.

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All location . of Fixed Resources in Input -output Linear Programming Model. Presented at the tenth input-output conference held at the central University, Hyderabad, March 20-22, 1994, (with S.C. Dhal, U.K. Dash) K.K. Saxena.

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An input-output Model for Energy Demand Projection. Presented at the tenth input-output conference held at University, the Central Hyderabad, March 20-22, 1994, (with U.K. Dash), K.K. Saxena.

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- ) . Comments on Politics of Schedule VIII Languages: Implications for Language Policy National Seminar on Perspectives on the English Scheduled JNU, New De l hi, Aug. 5-6 , 93, Inv i ted paper, B. N. Patnaik.
1. On Expressives in Oriya National Workshop-cumSeminar on lexical Typology. Telugu University, Hyderabad, Jan 28-30. B.N. Patniak.

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Forms in Kashmiri. National Seminar on ln role of  
Literature Language Teaching NRLC, CIIL,  
Patiala, March 16-18, 94 (Presented in  
Absentia), Invited Paper, (with Achla M. Raina as  
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Hitchhiking Game. National Seminar on the Semiotics of  
Language and Culture: Indian Perspectives. University of  
Bombay, Bombay, March 18 and 19, 94 (with Achla M. Raina as  
the second author), B.N. Patnaik.

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Context. National Workshop on Machine Aids for  
Translation, Perspective, Priorities and Plan, IIT  
Kanpur, March 24, 1994, B.N. Patnaik.

NLP Activities in India: An Overview. Inaugural  
Lecture at NLP Teacher Training Programme 1994, University  
of Hyderabad, Hyderabad. Feb 1. 1994, B.N. Patnaik.

3. Presidential Address: 'Understanding Tradition' delivered  
in the Philosophy Section of Indian Social Sciences  
Congress at Bangalore ln Aug. 1993, M. Mull ick.

7. Paper ('Methods ln Mimansa') ln Theoretical  
Science Section in the Congress of Traditional Science  
and Technology, IIT Bombay, November 1993, M. Mu l l i ck

The Causality Question. Paper presented at the  
Annual Convention of NAOP (Ind i a) Delhi  
University: Department of , 29-31 :  
1993, L. Krishnan. Psychology, Dec.

Some Human Aspects of Machine Translation. National Workshop on Machine Aids fir Translation: Perspective, Priorities and Plan (MATP3). IIT Kanpur March 24, 1994. (with S. Kaur) N.K. Sharma.

Progress in Psychological Science Implications for Stand~ng and Practice. Annual Convention of the National Academy of Psychology (India). University of Delhi Dec. 29-31, 1993. A.K. Sinha.

Competition, Commercialisation and Creativity-Does the University have any Future' Creativity, Technology, Productivity- and Justice: The Indian Context Aug. 10-15, 1993. Bangalore, (with Deepankar Chatterjee) Suhita Chopra.

Management of Technology' invited lecture delivered at SPJ/MIR, Bombay, on Feb. 2, 1994, P.N. Rastogi.

Maternal Mortality Rates, Levels. Trends and Causes International Conference on Safe Motherhood In Souyth Asia: Challenges Ahead Society for International Development, Chadigarh Chapter; 3-5, March 1994. (with Moti Lal Dash) , A.K. Sharma.

Muslim Fertility in Urban U.P.: A Qualitative Study' Research workshop on Demographic Transition and Development Alternative, UHMR, Jaipur, 1993. A.K. Sharma.

Technology, Education & Social Value:' International Seminar on Recent Trends in Higher Education'. Organised by Association for Education & Technology. New Delhi: Oct. 2830, 1993. Raka Sharan.

Department of Mechanical Engineering

1. Failure Analysis of Composite Lap Joints, Indo-German Workshop, March 94, at I.I.Sc. Bangalore, S.C. Pradhan, N.N. Kishore, N.G.R. Iyengar.
2. IEEE Invited Lecture on "An Introduction to Genetic Algorithms". Organized by Jadavpur K. Deb. university, July 1993.
3. Genetic Algorithms in Engineering Design. Organized by Aeronautical Development Agency, Bangalore, December 1993, K. Deb.
4. An Introduction to Genetic Algorithms, Organized by ANURAG, Hyderabad. December 1993, K. Deb.
5. Genetic Algorithms An. Optimization Tool, Organized by Defence Research Development Organization, Metcalfe house, Delhi, October, 1993, K. Deb.
6. Nonlinear Vibration Isolators - IIT Delhi, April 1993, A. K. Mallik.
7. Bifurcations in Nonlinear Engineering Vibrations IIT. Madras, March, 1994, A. K. Mallik.

Department of Materials & Metallurgical Engineering

1. Preparation and properties of iron aluminide strips produced by ingot metallurgy and powder metallurgy routes, Symposium on Structural Intermetall ics, Hyderabad, 5th and 6th Feb. 1994, S. Bagchi, S. Suwas, S. Sangal, S. Bhargava, and R.K. Dube.
2. Electroless nickel coating of powder metallurgy iron, Annual Technical Meeting of Powder

Metallurgy Association of India. New Delhi, 3-4 March, 1994, D. Singh and R.K. Dube.

Thickness and shape control in the rolling of steel sheet and strip. Awareness Programme on Technology Upgradation in Re-Rolling Industry, Small Industries Service Institute, Govt. of India, Kanpur, 9th March, 1994, R.K. Dube.

Some aspects of high temperature deformation of P/M dispersion strengthened alloys, Composites for High Temperature Applications. Hyderabad, 6th Feb. 1994, G. S. Upadhyaya.

Sintering of high  $T_c$  oxide superconductors, in Magnetism Materials. Hyderabad. 6th Feb., Upadhyaya. 1994. G.S.

Precipitation and dissolution kinetics by differential scanning calorimetry, International conference on Advances in Physical Metallurgy, Bombay, March 9-11, 1994, A.K. Jena.

Development of cold rolling texture in  $Ni_3AlB$ . in 'Structural Intermetallics', Hyderabad, February 5-6, 1994, R.K. Ray. S. Ghosh Choudhury, A.K. Jena.

Deformation mechanism at strain rates below the superplastic regime in aluminum alloys, IIM ATM, Hyderabad. Feb. 17-19, 1993. S. Banerjee and G.S. Murty.

High temperature properties of SiC platelet reinforced borosilicate composites. Symposium on Composites for High Temperature Applications: Recent Developments. Hyderabad, Feb. 6. 1994; A.R.B. Verma. V.S.R. Murthy and G.S. Murty.

Elevated temperature mechanical behavior of  
particulate reinforced 2124 Al composites,  
Symposium on Composites for High Temperature  
Application: Recent Developments, Feb.6, Hyderabad,  
1994, D. Sumar, G.S. Murty, and Y.R. M.L. Vaidya  
Mahajan.

Evolution of textures in low C steels, IIM Annual  
Tech. Meet i ng, Hyderabad, 17-19 Nov. 1993,  
R.K. Ray.

Development of text.ures in low and extra low C.  
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Met.allurgy, Bombay, 9-11 March, 1994,  
R.K. Ray.

Influence of nucle~tion and growt.h on the texture  
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Growth in Solids, IISc. Bangalore, 14-16th, Ray.  
1994, R.K.

4. Deformation texture development in Ni<sub>3</sub>Al(B),  
Symposium on Intermetallics, Mater.Res.Soc. of  
India, Hyderabad, 5-6 Feb. ,1994, S. Ghosh Chowdhary,  
R.K. Ray and A.K. Jena.

Finite element analysis of solid  
transformations, state  
Annual Technical Meeting of  
IIM, Nov. 17-19, 1993, R.  
Hyderabad, S. Sen.  
Balasubramaniam and

3. Oxidation behavior titanium aluminides,  
Symposium on Intermetallics, Hyderabad, Feb. 5-6, 1994,  
T.K. Roy, R. Balasubramaniam and A. Ghosh.

7. Hydride precipitation in Metals, International  
Conf. on Advances in Physical Metallurgy, BARC  
Bombay, March 9- 11, 1994, R.  
Balasubramaniam.



- Phase equilibria calculations of quaternary GaIn-Al-Sb system, Annual Technical Meeting of IIM, held at Hyderabad, Nov.17-19, 1993, R.C. Sharma. 1
- New 8. Tech. Program in Materials and Metallurgical engineering, at I.I.T. Kanpur, IIT Madras 9th February, 1994, G.S. Upadhyaya. 2
- Superplasticity in Materials, RRL, Sholapur October 18, 1993, G.S. Murty. 3
- Fluid flow and oxygen mass transfer in Pachuca tanks, Chemical Eng. Division, BARC, Bombay, Feb.9, 1994, Rajeev Shekhar. 3
- The primacy of India in ancient brass and zinc metallurgy, Foundation Day Lecture at the Indian School of Mines, Dhanbad, 10th December, 1993, A.K. Biswas. 4
- Corrosion resistance of the Delhi Iron pillar, Salem Steel Plant, Salem, 12 July 1993. R.Balasubramaniam. 5
- Corrosion resistance of the Delhi Iron Pillar, Indira Gandhi Centre for Atomic Research, 15th July 1993, Kalpakkam, R. Balasubramaniam. 6
- Understanding comminution: From empirical dogmas to virtual reality. Advance Minerals Product Research Centre, University of Melbourne, Australia, Dec.12, 1993, P.C. Kapur. 7
- Investigations into the failure of pallets and side plates, Bhilai Steel Plant. March 25, 1994, V. Bansal 8,

Department of Physics

1. Comparison of Metastabilities in Substitutionally and Interstitially Doped a-Si:H (contributed paper) at "Recent Developments in Solid State Materials Related to Devices held at Roorkee, March 3-5, 1994. A K Sinha, P A9arwal, S Kumar and S C Agarwal
  2. Instabilities in Amorphous Silicon, Invited paper at Recent Developments in Solid State Materials Related to Devices held at Roorkee, March 3-5, 1994. S C Agarwal
  3. Present Status and Future plans of the 2-MeV Vande-Graaff accelerator at IIT Kanpur, invited talk presented at Physics and Technology of Particle Accelerators and their Applications (PATPAA-93), No v 25- 2 7, 1 993, Ca 1 cut t a, V N K u 1 k a r n i .
  4. Surface Modification and characterization using energetic ion beams, Indo-US Workshop on "Advanced Electronic Materials, Dec 27-28, 1993, Univ. of Poona, Pune, V N Kulkarni and Y N Mohapatra.
  5. Statistical Mechanics of Amphiphilic Membranes, Dept of Chemist.ry, IIT Kanpur, Feb 18, 1994. D Chowdhury.
  6. Superspace formulat.ion of gauge theories at IUCAA, Pune, May 7, 1993, S D Joglekar.
  7. Superspace formulation of gauge theories at CTS, IISc, Bangalore, Dec 21,1993, S D Joglekar.
- Superspace formulation of gauge and theories, ward identities renormalization at SN Bose Centre for Basic Sciences, Calcutta, Feb 16, 1994, S D Joglekar.

- Superspace formulation of gauge theories, ward identities and renormalization at Viswabharti, Santiniketan, Feb 19, 1994, S O Joglekar. 6.
0. Superspace formulation of gauge theories, ward identities and renormalization at Institute of Physics, Bhubaneswar, Feb 21, 1994, S D Joglekar. 7.
- 1 Heavy Ion Fusion Reactions, Physics Dept, Bangalore University, Feb. 1994, Y R Waghmare. 8.
2. Electrical and Maanetic Studies ln some Systems, Alloy Variable Energy Cyclotron Centre Calcutta, July (VECC), 9, 1993, A K Majumdar 9.
- Department of Mathematics
- Tests for non-nested generalised linear models; Biometrics Conference, ISI Calcutta, 23-24th Dec 1993; Nisha Bawa and G.K. Shukla. 10
- Statistical model for intraspecies competition and crop yield; Biometrics Conference, ISI Calcutta, 23-24th Dec 1993; M Narayana Reddy and G.K. Shukla. 11
- Reduced rank ,regressl0n and application; Biometrics Conference, ISI Calcutta~ 23-24th Dec 1993; H. Sridhara and G.K. Shukla. 12
- Elliptic equations ln exterior domain; Recent Developments in Mathematics. Karnataka University, Dharwad, Dec.14-17. 1993; V. Raghavendra. 2.
- Almost periodicity of operators (an invited talk); Fourier Analysis and Approximation Theory, Aligarh Muslim University, Aligarh, SP.pt. 6-9, 1993, U.B. Tewari.

Role of mathematical modelling in population dynamics; DST Workshop on Future Studies in Population and Related Problems, School of Mathematics & Allied Sciences, Jiwaji university, Gwalior, March 19-20, 1994; (invited talk) Peeyush Chandra.

New network simplex algorithms; Netflow 1993, San Miniato, Italy, Oct. 3-7, 1993, invited paper (presented through co-author); P. Sharma.

Sequence spaces and duality theory", Department of Mathematics, Guwahati University, Guwahati, May 1993; Manjul Gupta.

Ordered vector-valued sequence space and order decomposition I; II (two lectures), Dept of Maths, Delhi univ, Delhi, Aug. 1993; Manjul Gupta.

- 0. Topological vector spaces & sequence spaces (nine lectures), Dept of Maths, Rajasthan Univ, Jaipur, March 15-25, 1994; Manjul Gupta.
- 1. Statistical methods to estimate signal processing models, Part I & Part II; Indian Statistical Institute, New Delhi, 14-15th Dec 1993; D. Kundu.

#### Industrial & Management Engineering Programme

- I. Templeton, Robust Design Engineering using Variance Transfer, ISSAT International Conference, Seattle, WA, March 1994, T.P. Bagchi and J.G.C. Templeton.
- ~. Quality Improvement Methods and Achievements, invited paper, National Conference on Quality in the Global Economic Context, Calcutta, December, 1993, T.P. Bagchi.

- A Genetic Algorithm Based Approach to Seek Robust Designs, Operational Research Society of XXVI Annual Convention, December, 1993, Raman and T.P. Bagchi. India Krishan 12
- Selecting Acceptance Sampling Plans: The Artificial Neural Net Route, Operational Research Society of India XXVI Annual Convention, December K. 1993, Arun Gupta T.P. Bagchi. 13.
- Some Innovations in Robust Design. Operational Research Society of India XXVI Annual Convention, December 1993, T.P. Bagchi. 14
- Sequential and Continuous Sampling under Inspection Error, CORS Conference, Toronto, May 1993, T.P. Bagchi and J.G.C. Templeton.
- A Constrained Optimization Refinement of Taguchi's 2-step Robust Design, CORS Conference. Toronto, May 1993, T.P. Bagchi and J.G.C. Templeton. 15
- Decision Support System In Industrial Decision Making Proceedings of Seminar on Improving Organizational Efficiency, HBTI, Kanpur, March 1993, Kripa Shanker. Ma
- Flexibility and Automated Manufacturing System, Proceedings of National Conference on Production Engineering, Institution of Engineers. Allahabad, July 1993, Kripa Shanker. 1  
2.
- Requirement Based Measures for Grouping in Manufacturing Compability, 2nd International conference on Computer Integrated Manufacturing Singapore, Sept. 6-10, 1993, Kripa Shanker. 3.
- Total Quality Management and Automation, Proceedings of Workshop on ISO 9000 - A Key to BHU, Global Success, Varamasi, Dec. 17-18, 1993, Kripa Shanker.

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12. Comparative Analysis of Scheduling Heuristics for a Flow Shop with Non Zero Lead Time, OR-93 Annual Conference of OR Society of India, Bhubaneshwar, Dec. 1993, T.V.L.N. Sivakumar and S. Sadagopan
13. Computing in India, in the 1993 Kellogg Workshop on Information Technologies for the Nineties. jointly organized by Management Development Institute. Gurgaon and Kellogg Graduate School of Management, Northwestern University, USA, August 1993, Sadagopan.
14. Distribution of Foodgrains in India: An Operational Study, accepted for publication in the ICORD '92 proceedings (1st International conference on Operational Research for Development), R.R.K. Sharma.
15. Heuristic for Securing Coordination in MRP, Proceedings of the 12th International Conference on Production Research, held at Finland, during August 16-20. 1993. R.R.K. Sharma and S.K. Yoganandan.

#### Material Science Programme

1. Sinter Forged PZT Ceramics, Seminar on Electronic Ceramics SEC-93, BARC Bombay, October'14-15, 1993, M.G. Bhangui and D.C. Agrawal.
2. Materials Science Education. National Seminar on Materials Science Education in India, IIT Kharagpur, 11 January 1994, D.C. Agrawal.
3. Piezoelectric and Dielectric Properties of CeO<sub>2</sub> doped Lead Zirconate Titanate, Annual Session of the Indian Ceramic Society, New Delhi, Janh 20-22, 1994, Ajai Garg and D.C. Agrawal.

PZT Thin Films for Devices - Studies on Sol-Gel Prepared Films, Meeting on Recent Developments in Solid State Materials Related to Devices, Roorkee University, March 3-5, 1994, D.C. Agrawal.

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Non-destructive characterization of Diamond etc.  
at 6th Int Symposium on Non-destructive of  
Charactrization Materials, Hawaii, H D Sist.

2.

Fiber Optic Signal Processing, E Dept. IIT  
Kanpur Oct 1, 1993, A K Ghosh. E ,

ear Engineering & Technology Programme

Amorphous Silicon Radiation Detectors, National  
Physical Laboratory, New Delhi, June 4, 93, S.  
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:ONFERENCES ATTENDED OUTSTDE TTT KANPUR

Department of Aerospace Engineering

AAS/AIAA Astrodynamics Conference, Victoria,  
B.C.Canada, Aug. 15-19, 1993, Krishna Kumar

All India Workshop-cum-Seminar on Wind Energy,  
Chandigarh Sept 18-19,1993: Invited Speaker, Chairman  
of Technical Committee, Chairman of a session,  
Panelist, Kunal Ghosh.

- l. Wind Power 93, N. Delhi, NO.17-19, 1993 Chairman of a  
Session, Kunal Ghosh
- m. All India Workshop-cum-Seminar on Wind Energy Its  
Potential and Utilization, The Institution of  
Engineers, (India), Chandigarh, Sept.18-19, 1993,  
Member of the Organizing Committee & Chairman of the  
Session, N.G.R. Iyengar.
5. IX National Convention of Aerospace Engineers, The  
Institution of Engineers (India), Madras, Feb 13-  
14,1994 Member of the Organizing Committee Chairman and  
of the Technical Session and panelist concluding in  
session, N.G.R. Iyengar.
3. Convention of National Design and Research Forum; The  
Institution of Engineers (India), Feb. 25~26, 1994,  
Member of the Organizing Committee, N.G.R. Iyengar.
4. Workshop on Academic Administration, Perspective and  
Requirements, ISTE Kanpur Chapter Dec. 810,1993,  
Delivered a Lecture on 'Students participation in  
Academic Administration, N.G.R. Iyengar.



Organized the National Seminar on Aerospace Structures NASAS-93, Dec. 29-30 at IIT Kanpur, Or. N.G.R. Iyengar and Or. Prashant Kumar.

17th National Systems Conference 93, Dec. 24-26, 1993  
Chairman, Technical Committee and Member Editorial Board of the Proc. Recent Trends in Applied Systems Research, N.G.R. Iyengar.

Department of Chemical Engineering

CHEMCON-93, Indian Chemical Engineering Congress, Dec 15-18th, 1993, Bombay, R.P. Singh.

11th National Conference of IMS on Membrane Sc. & Tech. Prospectives and Prospects; Calcutta; 45th Feb'94; Plenary Lecture on a topic entitled', Flux decline in Pressure Driven Membrane Processes, P.K. Bhattacharya. [

Non-linear dynamics, Chaos and its Control, presented at Center for Artificial Intelligence and Robotics, Bangalore, March 11th, 1994, S. Pushpavanam.

Non-linear dynamics, applications in chemical engineering, presented at Hindustan Lever Research Center, Bombay, March 19th, 1994, S. Pushpavanam.

Non-linear dynamics of a Fed-Batch Reactor, at presented National Chemical Laboratory, Pune, 1994, March 21st, S. Pushpavanam.

Is there anything new in distillation, Dept. of Chemical Engg., I.I.T. Madras, Aug 4, 1993, D.P. Rao.

Panelist in Discussion at the Conference on Biotechnolo9Y for molasses applications, HBTI, Ka~pur, Feb. 25-28, 1994, J.K. Gehlawat. E

L CHEMCON-93, held in Dec.93 at Bombay. Presented  
contributed papers, S. Narasimhan.

Chaired plenary lecture at, Polymers 94, IPCL  
Vadodara', 8-10 Feb, 1994, S. Bhatia.

to. CHEMCON-93, Bombay, Indian Chemical Engineering Congress,  
December 15-18, 1993, S.K. Gupta.

11. Vapor phase Esterification of n-butanol and acetic acid  
using macroporous resin Amberlyst 15 as a catalyst,  
CHEMCON-93, Bombay, December 15-18, 1993, Atulya  
Chandra and S. Bhatia.

12. Software for Simulation and Optimization of a  
Suspension PVC Batch Reactor, A. Khanna.

#### Department of Chemistry

1. Winter school cum workshop on organometallic  
compounds: IIT Delhi; Dec. 6-8, 1993; Invited  
lecture, B.D. Gupta.

2. National seminar on newer methods of synthesis in  
chemistry, Punjab University, Patiala, Oct. 27-29,  
1993, Invited lecture, B.D. Gupta.

3. Discussion meeting on organic synthesis and  
catalysis via metalloorganics, NCL Pune, Sept.  
23-24, 1993, Invited lecture, B.D. Gupta.

4. Conference on organometallics, IIT Delhi, Dec. 93,  
paper presented, V.Chandrasekhar.

5. Modern trends in Inorganic Chemistry, IISc,  
Bangalore, Aug. 1993, paper presented, V.  
Chandrasekhar.

44.  
6. Polymers' 94, IPCL, Baroda, Feb. 1994, paper  
presented, V. Chandrasekhar.

Palladium catalysed C-O bond formations and some  
useful functional group transformations 5  
Application in Organic Synthesis, "Training courses in  
Frontiers in Organic Synthesis" sponsored by United  
Nations Industrial Development Organisations (UNIDO) at 6  
IISc Bangalore on 9th & 10th December 1993 : Dr. Y.D.  
Vankar.

Selectivity and application of palladium catalysed  
C., C bond formations in Organic Synthesis "Training  
course in Frontiers in Organic Synthesis" sponsored by 7  
United Nations Industrial Development Organisation  
(UNIDO) at IISc Bangalore on 9th & 10th December 1993,  
Dr. Y.D. Vankar.

Studies in asymmetric synthesis: Newer approaches  
towards the synthesis of some useful chiral compounds 8  
"Symposium: on Recent Trends in Chemistry" at Panjab  
University, Chandigarh (Feb. 21-22, 1994), Dr. Y D  
Vankar.

Department of Civil Engineering 9

All India Symposium on Surface and Groundwater  
Pollution, Apr. 9-10, 1993, B. Datta.

XIII Int. Conf. on Soil Mechanics & Foundation  
Engg., held at New Delhi Jan. 1994, Sarvesh  
Chandra, Delhi,

Chairman, Session on Mass Transport and Tidal  
Conf. on Computational 1993. 1  
Currents, 2nd Asia-Pacific International  
Mechanics, Sydney, Aug. Madhav, M.R.

Panelist, Session on Ground Improvement XIII Int.  
Conf. Soil Mech. and Found. Engg., New Delhi, Jan.  
1994, Madhav, M.R.

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6. First IISc. National Seminar on Geotech. Dept. Engg. of Civil Engg., IISc., Bangalore, 27th July, 1993, P.K. Basudhar.
7. Attended and presented contributed paper' (ref.2) on Rehabilitation of Structures, Jan. 9-11, in Visakhapatnam, S.K. Chakrabarti. in the Int. Repairs 1994
7. Discussion Meeting on "Strong Motion Earthquakes and their Engg. Specification~ at IISc., Bangalore on Oct. 20-22, 1993, participated in the discussion and also gave a short talk, V:K. Gupta.
8. 9th Int. Conf. on Heavy Metals at in the Environment Toronto, Canada on 12-17 Sept., 1993, C. Venkobachar.
9. National Seminar on Clean Environment Strategies, Planning and Management at Lucknow, India, 12-13, Nov. , 1993, chaired a session, C. Venkobachar.
10. National Symposium on Recent Trends in Design of Hydraulic Structures, Mar. 18-19, 1994, Dept. of Civil Engg., Univ. of Roorkee, Chaired the session on "Design of Ungated Hydraulic Structures" and presented contributed paper, S.S. Rao.
11. Ninth Int. Conf. on Solid Waste Management, Philadelphia, USA, 14-17, Nov. 1993, chaired a session on Landfill, Umesh Dayal.
12. National Symposium on Recent Trends in Design of Hydraulic Structures, held at Univ. of Roorkee on 18-19, Mar. 1994, presented a paper and also chaired the session, T. Gangadharaiiah.

Second Asia Pacific Symposium on Ferrocement,  
Roorkee, Feb. 25-27, .1994, Organising Committee  
Member, Chaired one session (Tech. Session IV),  
Keynote Speaker, "Analysis and Design of  
Ferrocement Houses," Sa presented two papers, A.S.R.

i .

Seismic Activity - Indian Senario, Visakhapatnam,  
Apr. 9-10, 1994, Organising Committee Member, Cha i red  
One sess ion (Tech. Sess i on II), Ch i ef Gu~st,  
Valedictory Address, presented one paper, A. S. R. Sa i

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International Geoscience and Remote Symposium Sensing  
(IGARSS '93), Aug. 1993, Tokyo, N.K. Tripathi. Japan,

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International conference: on Instrumentation & Control  
of Environmental Pollution, Calcutta. Jan.1994,  
presented contributed paper, O.K. Ghosh.

partment of Electrical Engineering

Third International Symposium on Electricity  
Distribution and Energy Management ISEDEM '93,  
Singapore, Oct. 27-29, 1993 (Presented two papers and  
Chaired a session), S.C. Srivastava

International Teletraffic Congress (ITC) sponsored  
International Seminar on "Teletraffic Methods for  
Current and Future Telecom Networks", Bangalore, Nov.  
15-19, 1994, Programm Comm it tee Cha i rman and  
presenting three contributed papers, S.K. Bose.

IEEE APEC '94 (Ninth Applied Power Electronics  
Conference and Exposition) Feb. 13-17, 1994, Disney's  
Contemporary Resort, Orlando, Florida, contributed two  
papers and presented three papers S.K. Doradla.

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4. Workshop on Fiber Optics and its Applications, IIT Delhi and British Council, New Delhi, March 1994, Attendance (supported by the organizers in part), Anjan K. Ghosh.
5. XIX Annual Convention and Exhibition of IEEE Council held at Hyderabad, November 25-27, 1993. Presented invited paper, N.C. Mathur.
6. All India Seminar on 'Optoelectronics - Education, Research and Technology', organized by the Institution of Engineers (India) UP Centre, Lucknow, December 18-19, 1993. Presented invited paper, N.C. Mathur.
7. Third International Conference on Advances in Pattern Recognition and Digital Techniques organized by Indian Statistical Institute, Calcutta, December 28-31, 1993. Presented invited paper, N.C. Mathur.
8. International Conference on "Applications of Information Technology in South Asian Languages", Feb. 25-26, 1994, New Delhi (contributed paper), S.K. Mullick.
9. International Conference on "Recent Advances in Biomedical Engineering", Osmania University, Hyderabad, India, Jan. 6-8, 1994. Chaired the session "Biomedical Signal Processing-II" G.C. Ray.
10. Second National Conference on "Yoga Therapy", New Delhi, Feb. 3-5, 1994. Chaired the session "Miscellaneous" on 5th Feb. 1994, G.C. Ray.

Department of Humanities and Social Sciences

1. Invited as Chief Guest to Speak on Role of Voluntary Organisations in the consumer Movement

in India in the Workshop by Consumer Movements  
organised the Consumer Council in Kanpur on  
16.1.94 at Kanpur. B.Rath. 1 ,

Chaired the opening session of the Seminar on  
'Transport System' Problems and Prospects,  
organized by the Consumer Council, Kanpur on  
27.2.94 at Sisamau, Kanpur. B. Rath

Presented a paper titled 'Structural Changes and Growth  
in India: An Input-Output Approach (with S. Dhawan) in  
a seminar on 'Development Issues of the States' held  
at the University of Rajasthan, Jaipur, March 12-13,  
1994. K.K. Saxena.

National Workshop-cum-Seminar on 'Lexical  
typology' Telugu University, Hyderabad. a  
Session on 28.1.94. B.N. Patnaik. Chaired

National Seminar on 'The Semiotics of Language and  
Culture: Indian Perspectives. University of  
Bombay, Bombay, Chaired a Session (on 18.3.94) .  
B.N. Patnaik.

Invited to attend International Seminar on  
'Globalisation of Contemporary Arts and Regional  
Identity' held at National Museum, New Delhi, Feb. 21-  
23, 1994. R.K. Bhatnagar.

Chaired a Session (Invited Lecture by Prof.  
Ramadhar Singh on Information Integration) on  
31 . Department of Psychology. Delhi. L.  
Krisnan.

Annual Convention of the National Academy of  
Psychology (India) University of Delhi, Delhi.  
Dec. 29-31 , 1993. Presented an invited paper,  
A.K. Sinha.

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Represented India in the First International Posters Session of Community Psychology and the Fourth Biennial Conference of the International Interest Group of Society for Community Research and Action which was held at Williamburg, Virginia, USA, on June 16,-19, 1993. 'Terl"orism in India: A Communal Dialogue', and 'Intervention My Foot; Says An India Poor' Where the two posters Dispalyed there. S. Omprakash.

Synthesis of MCH and FP Studies in U. P., Jan. 19, 1994. Awadh Clark, Lucknow. Organised by Population Council. Participated as Panelist A.K. Sharma. ..

Was Invited & Participated in the National Seminar on the 'Scheduled Tribes and the Mainstream of Ind i an Soc i ety and Cu l ture' 18-90 March, 94, Department of Public Adminstration, Lucknow University, Lucknow. Organized by Ethnographic and Folk Culture Society, Lucknow. A. K. Sharma.

#### !partment of Mathematics

Recent Developments in Mathematics, Karnataka University, Dharwad, Dec. 14-17, 1993, an invited paper, V. Raghavendra.

Third National Seminar on Theoretical Computer Science, IIT Kharagpur, June a 16-18, 1993, Chsired session, S.P. Mohanty.

ISPS Conference, Univ. of Poona CDept of Stats), Dec. 22-25, 1993, P.C. Joshi.

International Congress on Modelling and Simulation, Austral ia, Dec. 6-10, 1993, J.B. Shuk 1 aO.



Department of Mechanical Engineering

Advanced Study Institute, IIT. Madras. 2-11  
August, 1993, Invited Lecture, K. Deb.

International Computing Congress, Hyderabad, 15-18  
December, 1993, Presented a paper, K. Deb.

International Conference on CAD, CAM, Robotics and  
Autonomous Factories 1993 held during Dec. 16-19, 1993,  
V.K. Jain.

Chaired two sessions, Presented one paper, Jain. V.K.

Invited Lecture, Failure Analysis Lap of Composite  
Joints, Indo-German Workshop. I.I.Sc, March 93,  
Bangalore, N.N. Kishore.

Chaired a Session in National Symposium on  
Acoustics and presented an invited paper,  
Bangalore, 1993, A.K. Mallik.

National Heat Transfer Conference, January 1994, held at  
BARE Bombay, Item 3 op. 2, K. Muralidhar.

Department of Material & Metallurgical Engineering

Seventh Int. Metallurgy and Materials Congress, Ankara,  
4-8th May 1993, Paper presentation, G.S. Upadhyaya.

Thirteenth Int. Plansee Seminar, Reut June  
1993, Paper presentation, te, G.S. Upadhyaya.

Symposium on Composites for High Temperature  
Applications: Recent Developments, Hyderabad, 6th Feb  
1994, Paper presentation, G.S .. Upadhyaya and G.S.  
Murty.

- Magnetism in Materials, Hyderabad, 6th Feb 1994,  
Paper presentation, G.S. Upadhyaya.
5. Annual Technical Meeting of I.I.M., Hyderabad,  
17-19th Nov 1993, Paper presentation, G.S.  
Murty, R.K. Ray, R.C. Sharma.
- Annual Technical Meeting of Materials Research  
Participation, Hyderabad, 7-9th Feb 1994,  
G.S. Murty.
7. Int. Conf. on Advances in Physical Metallurgy,  
BARC, Bombay, 9-11th March 1994, Invited  
lecture and chaired a session, R.K. Ray.
8. Indo-U.S. Workshop on Nucleation and Growth in  
Solids, I. I. Sc. Bangalore, 14-16th March  
, R.K. Ray.  
1994, Invited Lecture,  
Symposium on Intermetallics, Hyderabad, 5-6th Feb S.  
1994, Bhargava, R. Balasubramaniam.
10. Int. Conf. on Advances in Physical Metallurgy,  
BARC, Bombay, 9-11th March 1994, Invited Paper  
A.K. Jena, R. Balasubramaniam.
11. Int. Workshop on Computer Based Mathematical  
Modelling of Aluminium Production Processes,  
Nagpur 14-18th Sept 1993, Chaired sessions,  
S.P. Mehrotra.
12. 42nd Indian Foundry Congress, Ahmadabad, 28-30 Jan  
1994, Attended, V. Bansal.
13. Structural Intermetallics, Seven Springs, U.S.A.,  
26-30th Sept. 1993, Paper presentation, A.K.  
Jena.
14. Annual Meeting of Indian Ceramic Society, New  
Delhi, 20-22nd Jan 1994, Attended, R., Tandon.

5. Awareness Programme on Technology Upgradation in  
Re- Rolling Industry, Kanpur, 9th March 1994,  
Invited paper, R.K. Dube.

Annual Technical Meeting of I.I.M .. Hyderabad,  
17-19th Nov 1993, Invited Paper, R.  
Balasubramaniam.

#### Department of Physics

One day seminar on Advances in Thin Films, New Delhi,  
Feb. 9, 1994, Chairing Session. S C Agarwal

Recent Developments in Solid State to Materials  
Related Devices, Roorkee, March Paper, S 3- 1994,  
Invited C Agarwal 5,

6th Int. Symp. on Non-destructive Characterization of  
Materials, Hawaii, Presented paper. H D Bist.

Indo-French Workshop on Soft Condensed Matter (M N Saha  
Birth Centenary Celebrations), SINP Calcutta, Dec 1-9,  
1993, Invited participation, D Chowdhury.

Workshop on "Gravitational Waves, TUCAA, Pune,  
31.5.93 - 4.6.93, S D Joglekar.

4th International Workshop on Physics of Semiconductor  
Devices, Dec. 1993, New Delhi, S Kumar.

Recent Developments in Porous Silicon, 4th Sept  
1993, SSPL, Delhi, S Kumar.

Advances in Thin films, 19th Feb 1994, TIT Delhi, S  
Kumar.

DAE Symposium at B.A.R.C. Bombay, Dec 27-30, 1993,  
Presented Paper (Dec. 30, 1993), Participated in  
Partial Discussion on Porous Silicon, V A Singh.

- ) . SERC School on Nuclear Physics held in Mysore  
University during Feb 7-14, 1994, Gave series of  
lectures on high energy electron scattering, Y R  
Waghmare.
- 1. Indo-US Workshop on Advanced Electronic Materials, Dec.  
27-28, 1993, Univ. of Poona, Pune, V N Kulkarni.
- 2. Physics and Technology of Particle Accelerators and  
their Applications, Nov 25-27, Calcutta, V N Kulkarni.
- 3. Workshop on Turbulence, JNC, IISc, Invited Bangalore,  
lecture - J K Bhattacharjee.
- 4. International Conference on Industrial Development of  
Physics - Bridging the Gap, New Delhi, Jan 1993. R M  
Singru.

Department of Mathematics

Recent Developments in Mathematics, Karnataka  
University, Dharwad, Dec. 14-17, 1993, an invited  
paper; V. Raghavendra.

- ~. Third National Seminar on Theoretical Computer  
Science. I. I . T. Kharagpur, June 16-18, 1993,  
Chaired a session; S.P. Mohanty.
- 3. ISPS Conference, Univ. of Poona (Dept of Stats), Dec.  
,22-25, 1993 ; P. C. Joshi .
- 4. International Congress on Modelling and  
Simulation, Australia, Dec. 6-10, 1993; J.B.  
Shukla.

Industrial & Management Engineering Program

AIRO 93, Italy" Sept. 29-Oct. 1, 1993, R.K. Ahuja.

NETFLO 93, Italy, Oct. 3-Oct. 7, 1993, R.K. Ahuja.

Conference on Production Engineering, Institution of Engineers, July 16-17, Allahabad, 1993. Kripa Shanker.

II International Conference on CIM. Sept. Singapore, 6-10, 1993, Kripa Shanker.

Workshop on ISO 9000 - A Key to Global Success, B.H.U., Varanasi, Dec. 17-18, 1993, Kripa Shanker.

Research Science Programme

Seminar on Electronic Ceramics SEC-93, BARC Bombay, October 14-15, 1993, Invited paper, D.C. Agrawal

. National Seminar on Materials Science Education in India IIT Kharagpur, 11 Jan. 1994, Invited paper, D.C. Agrawal.

Annual Session of Indian Ceramic Delhi Society, New Jan. 20-22, 1994, Contributed two paper, Chaired sessions, D.C. Agrawal.

Meeting on Recent Developments in Solid State Materials Related to Devices, Roorkee University, Roorkee, March 3-5 1994, Invited paper, D.C. Agrawal

. Advances in Thin Films, Indian Institute of Technology, Delhi February 19, 1994, Institute of Dr. J. Kumar.

6. One Day National Meeting on Porous Silion at Solid State Physical Laboratory, New Delhi Nov. 12, 1993, Dr. Y.N. Mohapatra.

Centre for Laser Technology

- 1 National Conference on Current Trends in Atomic and Mol. Phys. BARC, Bombay Dec. 21-23, Invited talk
- 2 XXI International Conference Phen. in Ionized Gases, Bochum (Germeny) Sep. 19-24 - paper.
3. 2nd International Conference Lasers & Applications, Tehran (Italy) Aug. 23-26 Invited talk
4. National Conf. on Laser, CAT (INDORE) Jan 29 - Feb 2 1994, Section Ch~irman, R K Thareja.
5. National Heat Transfer Conference, January held 1994, at BARC Bombay, K Murlidhar.
6. National Seminar on Management of Sophisticated Analytical Instruments, RRL Bhubaneswar, 1-2 Dec, 1993, Contributed Paper, Bansi Lal. Allahabad University Allahabad.
7. 6th International Symposium on Non destructive of Charactrization materials oahu, Honolulu, H D Bist.
8. Intl. Conf. on applications of information technology in South Asian Languages, Feb.2526, New Delhi-Contributed paper, S K Mullick.
9. Attended Workshop on Fiber Optics and its Applications, IIT Delhi and British Council, New Delhi, March 1994, Attendee supported by the organizees in part, A K Ghosh.

nuclear engineering & Technology Programme

Workshop in Image Processing and Analysis, IGCAR,  
Kalpakkam, 22-24 Feb 94, P. Munshi.

Annual Conference of the Indian Nuclear Society,  
BARC, Bombay, Feb 28-March 2, 94.

OTHER ACTIVITIES

a) Technology Developed

A Low Cost Instrument has been developed for Wind Velocity measurement, Title WTND DTAL, Ready for transfer, Kunal Ghosh. (Aero. Engg.)

Cooling system for WDM2 diesel electric locomotive of Indian Railways including design upgradation of RTM blower, The new design has 20% k power consumption and 4% enhanced cooling flow rate. This is likely to save Rs.12,000/- in operating cost of each new locomotive per annum. The technology is transferred to ROSa and the blowers and airducting would go for fields trials in two new locomotives shortly, R.K. Sullerey. (Aero Engg.)

3. Design/Engineering & Planning Large Low Speed Closed Circuit Wind Tunnels - Ready for Transfer (Aero Engg.)
4. High Fructose Syrups - work in progress for a functional technology, J.K. Gehlawat. (Chem. Engg.)
5. Catalyst for Naphtha Pyrolysis, further development needed, D. Kunzru. (Chem. Engg.)
6. Instrumented Vehicle for Traffic Data Collection. S.P. Palaniswamy. (Civil Engg.)
7. Modified UASB design (cost reduction aspect) main under GAP, C. Venkobachar. (Civil Engg.)



Design and Construction of Flyash Dyke over settled flyash lagoon at Korba Super Thermal Power Project, NTPC, Umesh Daya 1 .  
(Civil Engg.)

Control of carbon Monoxide in Auto-Exhaust (further development needed), D.K. Ghosh.  
(Civil Engg.)

D. Communication Aid for ALS (motor neuron disease) Handi-capped patients. (Further development needed), S.K. Mullick.  
(Elect. Engg.)

1. Speech Synthesizer for the vocally handicapped and spastic children is developed. It's technology is ready for transfer, G.C. Ray.  
(Elect. Engg.)

Orthopedic Chair Design Fabricated in the Fine Arts (Ready for Transfer) Studio, Hospital Kit Box (in final Stage), Amit Ray.  
(HSS)

I Biogas Technology:

Experiments conducted to increase the daily gas yield unit feed rate. Further development is still needed, Keshav Kant. Mech.  
(Engg.)

at Transfer Augmentation Technology Use of in Line propellers, Keshav Kant.  
(Mech. Engg.)

Experiments conclusively showed the superiority of in-line propellers as heat transfer augmenting device for high Prandtl Number fluid like water over other common passive devices. Results can be used directly, Keshav Kant.  
(Mech. Engg.)

15. Improved Solar Cooker (Ready for Transfer), Kumar. P.  
(Mech. Engg.)
16. Mist cooling of hot steel surface (Not Ready), S.C.  
Koria.  
(MME)
17. Development of sintered mechanical seals, Under Tech.  
Dev. Mission, Planning Commission, Govt. of India, G.S.  
Upadhyaya.  
(MME)
18. Facilities are developed in the laboratory to make  
diamond like hard carbon films on a variety of  
substrates, S. Kumar.  
(Physics)
19. R.F. Absorption Characterisation of High Tc Oxide  
Superconductors, Prem Chand.  
(Physics)
20. Wet Process for White Cement from Rice Husk Ash has  
received attention from several industries. (MSP)
21. Particle size analysis apparatus under is being  
developed the Technology Development  
Mission.  
(MSP)
22. PC controlled Ferroelectric hysteresis loop  
tester.  
(MSP)
23. Computer controlled Differential Thermal Analyser is  
sponsored by DST ready for Transfer for  
commercialization.  
(MSP)

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200W CO<sub>2</sub> Laser, Bansilal.  
(CELT)

Communication Aid for ALS (Motor Neuron Disease)  
Handicapped Patients, S.K. Mullick.  
(CELT)

Software Developed:

The Flying Machine - Conventional Configuration - A  
Video Film (20 mm), V. Gupta  
(Aero Engg.)

A software is under development for design of gear pumps  
for aircraft fuel system. This activity is part of a  
project funded by HAL Lucknow for LCA accessories, R.K.  
Sullerey.  
(Aero. Engg.)

An Integral Equation Finite Volume (IEFV) Code has been  
developed for analysis of subsonic and transonic flow on  
aircraft configurations. Has already been transferred to  
and installed at the Aeronautical Development Agency,  
Bangalore, and is being currently used for their  
projects, N.L. Arora.  
(Aero. Engg.)

Geographic Information System for the Pavement  
Design and Maintenance Management, S.P.  
Palaniswamy.  
(Civil Engg.)

Nonlinear Optimization Model for Regional  
Management of Groundwater Pollution and withdrawal  
Almost ready for transfer some development needed,  
B. Datta.  
(Civil Engg.)

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200W CO<sub>2</sub> Laser, Bansilal.  
(CELT)

Communication Aid for ALS (Motor Neuron Disease)  
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and installed at the Aeronautical Development Agency,  
Bangalore, and is being currently used for their  
projects, N.L. Arora.  
(Aero. Engg.)

Geographic Information System for the Pavement  
Design and Maintenance Management, S.P.  
Palaniswamy.  
(Civil Engg.)

Nonlinear Optimization Model for Regional  
Management of Groundwater Pollution and withdrawal  
Almost ready for transfer some development needed,  
B. Datta.  
(Civil Engg.)

1

ODOS Open Domain Software for Numerical  
Analysis, N.S.V. Kameswara Rao.  
(Civil Engg.)

Software for Optimal Design of Bus System - Tested for  
Delhi, B.R. Marwah.  
(Civil Engg.)

Software for Planning of - Feeder Services for MRTS  
it is being applied for of the proposed MRTS System  
Delhi, B.R. Marwah. (Civil  
Engg.)

Vectorizing and Parallelizing Comp i l e r s  
Fortran Programming Language for a  
activity. continuing  
(CSE)

10. Multicomputing Environment for Genetic Algorithms on  
Transputers ~ a continuing activity.  
(CSE)

1 PARG: A Parallel Graph Language - a continuing  
activity.  
(CSE)

2. A Workbench for Computational Geometry a  
continuing activity.  
(CSE)

13. A System has been developed which allows booting of PCs  
connected on the ethernei network through the network  
using IP. The PCs may be diskless. (CSE)

14. Fibre -Link Sim, an expert system to- for CAD point-  
point data links. Anjan K. development Ghosh (Further  
is needed).  
(Elect. Engg.)

5. Time-Frequency Analysis of Signals, S.K. Mu 11; ck .  
(Further development is needed).  
(Elect. Engg.)
6. Process Simulation of npn BJTs. is Alok Dutta  
(Further development needed).  
(Elect. Engg.)
7. An expert- system software for aircraft bulkhead  
design, Demo Version is almost over. Further  
development is needed, K. Deb. testing  
(Mech. Engg.)
1. A real-coded genetic algorithm software. First  
version is over. Further development and are testing  
needed, K. Deb. testing  
(Mech. Engg.)
- Dynamic crack ~ropagation software for NSTL,  
Visakhapatnam. (under development), K. Deb.  
(Mech. Engg.)
- ESTOWER: Expert System for the Thermal Design of Wet  
Cooling Towers. Further development is still needed  
before commercial exploitation, Keshav Kant.  
(Mech. Engg.)
- Indexing of Laue Back Reflection Patterns for BCT -  
Crystals (Further refinement needed). V. Bansal.  
(MME)
- Format's Principle, User friendly software for IBM-PC-  
Compatible Machines. Ready for marketing, V.A. Singh.  
(Physics)
- A Fast Fitting Method for Spin Hamiltonia Parameters of  
 $s = 5/2$  system, Prem Chand (further development needed).  
(Physics)

24. Software Time-frequency Analysis of Signals,  
S.K.Mullick.  
(CELT)
25. Fiber-Link-Sim, an expert system for CAD of point  
to point fiber optic data links. Further  
Development needed A.K.Ghosh,  
(CELT)

(C) Industry/Institution Visited

1. BHEL Corporate R&D Hyderabad, Design of Wind Turbine,  
Dec.13-18, 1993, Dr. Kunal Ghosh.  
(Aero. Engg.)
2. Institute for Energy Studies, Univ. of Jadavpur, in  
Research Wind Energy, Dec. 21-22, 1993, Kunal  
Ghosh  
(Aero. Engg.)
3. Member, Research Council, Central Leather Research  
Institute, (CSIR) Madras 1991-94. D.N. Saraf.  
(Chemical)
4. R&D Centre, Ion Exchange (India) Ltd, Ambernath  
(Bombay), for collaborative work/studies on  
ultrafiltration for cane-juice clarification, JUNE 27-  
29, 1993. J.K. Gehlawat.  
(Chemical)
5. Mysore Acetate & Chemicals Ltd., Mandya, For  
Preliminary Discussions, on problems by encountered  
them. S. Pushpavanam  
(Chemical)
6. Electronic Research & Development Corporation,  
Trivandrum July 15th 1993 on MHRD thrust area  
project.  
(Chemical)





Divn.)  
Computer

BARC, Trombay (Process Engg. & Chicago; Visiting  
University of Illinois at Chicago; Feb 11th, 1994 for project proposal on July 1993; V.K.  
Research Professor; May 1993  
Control of Solvent Extraction. (Chemical)  
Singh.  
(Chemistry)

- I. Invited Lecture at Regional Research Laboratory, Bhopal  
on: Groundwater Resources Modelling and Groundwater  
Contamination, Apr. 1993. B. Datta. (Civil Engg.)
  
- 0.. National Institute an of Rock Mechanics, Kolar gave on,  
invited lecture "Rock Mass Classification Sarvesh  
Systems" Ju 1. 1993, Chandra.  
(Civil Engg.)
  
1. Supervising a M.Tech. Thesis work on the  
Penetration Assembles in Reactor Containment  
Structures, jointly with the Head of Civil Engg.  
Section, Atomic Energy Regulatory Board, Govt. of  
India, S.K. Chakrabarti.  
(Civil Engg.)
  
2. Metallurgical Engg. Consultants (India) Ltd.  
(MECON) , Ranch i For Interaction of I. I. T. Kanpur  
with MECON, Jan. 27 .. 28, 1994, Umesh Daya 1 .  
(Civi 1 Engg.)
  
3. At the invitation of U.P. Pollution Control Board  
visited several industry in and around Agra, Firozabad  
during Oct. 1993, in connection of Air Pollution  
Control. O.K. Ghosh.  
(Civil Engg.)

Refresher Course on Environmental Geology for  
Univ. Teachers, Aligarh Muslim Univ., Aligarh,

Oct. 1993, Delivered 3 lectures, B.C. Raymahashay.  
(Civil Engg.)

5. Special Lecture Series on Geochemistry for postgraduate students, Indian School of Mines, Dhanbad, Mar. 1994, Delivered 4 lectures, B.C. Raymahashay.

(Civil Engg.)

6. At the invitation of U.P. Pollution Control Board . visited several industry in and around Agra & Firozabad during October 1993 in connection of Air Pollution Control, D.K. Ghosh.

(Civil Engg.)

Datapro, Pune, Dec. 1993, To investigate collaborative R&D work between IIT/K and Datapro, S.K. Bose.

(Elect. Engg.)

8. CEERI, Pilani; To initiate research activity in the area of ASIC design and fabrication, Oct. 1720, 1993, Aloke K. Dutta.

(Elect. Engg.)

9. Visit to CSIO, Chandigarh, To discuss projects, Sept. 1993, Anjan K. Ghosh.

(Elect. Engg.)

Visit to D.O.E. (photonics div.), New Delhi, To discuss funding of projects, Oct. 1993, Anjan K. Ghosh. (Elect. Engg.)

Visited Central Scientific Instruments Organization (CSIO), Chandigarh, to have discussions on possible joint work on & Fibre Optics Integrated Optics, Joseph John. (Elect. Engg.)

- Defence Electronics Applications Laboratory  
(DEAL), Dehra Dun, July 1993. For developing joint  
research projects under DRDO funding, N.C. Mathur.  
(Elect. Engg.)
23. Taken up a Consultancy Project on 'Demographic and  
Socio-Economic Study of the ASH Pond Area of Feroze  
Gandhi Unchahar Thermal Power Project, Raibareli'  
Sponsored by the NTPC, New Delhi. B. Rath.  
(HSS)
24. Organized in collaboration with District  
Administration Kanpur, a two day National  
Symposium on Riots in India, I.I.T. Kanpur 5, Dec. 4-  
1993, Convener: Dr. S. Omprakash.  
(HSS)
25. Kanpur Medical Centre for the Design Development  
of Hospital Kit Box (In Progress) Dec. 1993 onward.  
U.P. State Industrial Corporation Kanpur for Conducting  
a Short Term Leather Workshop for the Kanpur Leather  
Industries. Amit Ray.  
(HSS)
6. Indian Statistical Institute, New Delhi, Joint  
Research, Dec. 1993, D. Kundu.  
(Maths)
7. TELCO, Jamshedpur To gather problems fo  
Technology Mission, K. Deb. r  
(Mech. Engg.)
8. TISCO, Jamshedpur To gather problems fo  
Technology Mission, K. Deb. r  
(Mech. Engg.)
9. Hindustan Motors, Hoogly: To gather problems for  
Technology Mission, K. Deb.  
(Mech. Engg.)

30. ANURAG, Hyderabad : To discuss about possible collaborative research, K. Deb.  
(Mech. Engg.)
31. ADA, Bangalore : To present a seminar and discuss about possible collaborative work, K. Deb.  
(Mech. Engg.)
32. DRDO, Delhi To discuss about possible collaborative research, K. Deb.  
(Mech. Engg.)
33. Regional Research Lab., Bhopal For discussion of Research Problems, V.K. Jain.  
(Mech. Engg.)
34. Optel Telecommunications Ltd. Bhopal For discussion of Research Problems, V.K. Jain.  
(Mech. Engg.)
35. Sur Hencing, Bangalore For discussion of Research Problems, V.K. Jain.  
(Mech. Engg.)
36. Widia Bangalore. NAL Bangalore, Elechem Bangalore: For discussion of Research Problems, V.K. Jain.  
(Mech. Engg.)
37. Clarkson University Potsdam. N.Y., as a Visiting Professor of Mechanical Engineering for Teaching and Research from May 1993 to July 1993, Keshav Kant.  
(Mech. Engg.)
38. Bharat Dynamics Limited, Kanchan Bagh, P. Hyderabad, Kumar.  
(Mech. Engg.)

Bharat Dynamics Limited, Bhanur, Medak, A.P., P. Kumar.  
(Mech. Engg.)

North West Research Associates Inc. Experimental  
research in fluid mechanics, 4 months, AugustNovember  
1993, R. Singh.  
(Mech. Engg".)

Advanced Research Centre for Powder Metallurgy,  
Hyderabad, 29-30 Jan. 1994, R.K. Dube.  
(MME)

Mahindra Ugine Steel Ltd., Bombay, Feb. 1994, G.S.  
Upadhyaya.  
(MME)

ALCAN International, Kingston, Canada. Sept.20-25,  
1993, A.K. Jena.  
(MME)

Jawaharlal Nehru Aluminium Res.Dev.& Centre, Design  
Nagpur, Sept. 1993, R. Shek har . (MME)

Uranium Corporation of India, Jaduguda. Oct.1993, R.  
Shekhar, S.P. Mehrotra.  
(MME)

Hindustan Aluminium CO.Ltd., Renukoot. Oct. R. 1993.  
Shekhar, S.P. Mehrotra.  
(MME)

Rourkela Steel Plant, Oct. 1993. V. Bansal, N.K.  
Batra.  
(MME)

Bhilai Steel Plant, March 24-25, 1994: V. Bansa 1  
N.K. Batra. ,  
(MME)

- ~9. Visited Institut fur Mathematik, Technische  
 Universitat, Graz, Austria, for the period 26 May, 1993  
 to 29 May 1993 for exchange of ideas. Also gave the  
 seminar entitled, "A scaling algorithm for the  
 constrained maximum flow problem". R.K. Ahuja.  
 (IME)
50. Visited Sloan School of Management, Massachusetts  
 Institute of Technology, Cambridge, USA, for the per i  
 od May 30, 1993 to Ju l y 23, 1993, as a consultant to  
 continue research on a variety of topics in network  
 optimization, R.K. Ahuja.  
 (IME)
51. Visited Dept. of Business Administration,  
 University of New Brunswick, Fredericton, Canada, for  
 the period July 8, 1993 to July 9, 1993, for exchange  
 of research ideas. Also gave the seminar entitled, "A  
 scaling algorithm for the constrained maximum flow  
 problem." R.K. Ahuja.  
 (IME)
52. Visited Capri, Italy, from Sept. 28, 1993 to Oct. 2,  
 1993, to attend the Italian Operational Research  
 Society Conference AIRO '93 and gave the invited one-  
 hour tutorial entitled, "Computational testing of  
 maXlmum flow algorithms", R.K. Ahuja. (IME)
53. Visited San Miniato. Italy, from Oct. 3, 1993 to Oct.  
 7, 1993 to attend "Netflow 93 An International  
 Symposium", and gave the invited seminar, entitled,  
 "New primal simplex algorithms for network flow  
 problems", R.K. Ahuja.  
 (IME)
54. Delivered F.W. Taylor Memorial Lecture,  
 Flexibility and Automated Manufacturing Systems,

Institution of Engineers, Allahabad. July 16-17, 1993,  
Kripa Shanker.  
(IME)

5. Delivered a keynote lecture on "Total Quality Management and Automation" in the Workshop on ISO 9000 A key to Global Market, organized by IT, BHU and IE(I), Varanasi Local Centre. Dec. 17-18, 1993, Kripa Shanker.  
(IME)

6. Visited Asian Institute of Technology, Bangkok, Thailand, to give lectures in an International Workshop on Computer & Management. Nov. 8-12. 1993, S. Sadagopan.  
(IME)

Visited Birla White Cement, July 1993. K.N. Rai.  
(MSP)

Fraunhofer Institute for NDT. Germany. March 93-Nov 93,  
P. Munshi.  
(NET)

London Hospital Medical College, U.K. P. Nov. 93-  
Jan. 94, Munshi.  
(NET)

BARC Bombay, 28-31 Jan 94, To discuss research on  
amorphous silicon, S. Qureshi.  
(NET)

AERB, Bombay, 28 May 93, 5 Nov. 94. 93. and 25 Feb.  
To attend ACNS meetings and discuss project  
research details, M.S. Kalra. (NET)

IAEA course for Engineers of Atomic Energy, Iran,  
Nov 29 (NET) Dec 18, 1993, K.S. Ram.

An Instrument for Measuring Wind Velocity, has Application for Patent been filed on March 15, 1994, Kunal Ghosh.  
(Aero. Engg.)

~. Certain cycloalkyl and azacycloalkyl pyrrolopyrimidine; A new class of GABA brain receptor ligands, US Patent No. 5,216,159; 1993, A. Thurkauf, A. Hutchinson and V.K. Singh. (Chemistry)

~. Molded Plastic Casket having a combination sealing bead, U.S. Patent No. 5,228,702, July 20, 1993, B . D. Agarwa l .  
(Mech. Engg.)

:e) Awards and Honours

Individual Excellence award in 6th National Video UGC, Competition 1993, V. Gupta  
(Aero. Engg.)

~. Distinguished Alumnus Award on the occasion of Golden Jubilee Celebrations of the Dept of Aerospace Engg., IISc Bangalore, N.G.R. Iyengar (Aero. Engg.)

3. Elected as Council Member of the Aeronautical Society of India, N.G.R. Iyengar  
(Aero. Engg.)

Elected as Council Member of the IE (I), N.G.R.lyengar  
(Aero. Engg.)

). Appointed Consulting Editor for the Aerospace Divn, Journal of IE(I), N.G.R.lyengar  
(Aero. Engg.)



SGSITS National Award, Indian Society for Technical Education. Dr. Ashutosh Sharma (Chemical)

Ell Research Award, Instituted by India Engineers limited at Dept. of Chemical Kanpur. S. Engg., IIT Narasimhan. (Chemical)

National Mineral Award - received by Dr. R.P. Singh. (Civil Engg.)

Awarded certificate of merit for best research paper, "Two Dimensional Stress Analysis of Selected Concrete Gravity Dams," (published in the Journal of Irrigation and Power of CaIP, Apr. 1992) by CaIP, S. Surya. Rao. B. P. Singh and T . V . Praveen. (Civil Engg.)

First prize for the best paper. "Rapid Technique for Predesign Estimates of Treatment Plants Civil Works Cost" (Journal of Indian Water Works Association, 1993) by Vinod Tare and V.W. Kale. (Civil Engg.)

One recent painting acquired for Co l l e c t i o n National Academy of Art, New Delhi. R.K. Bhatnagar. (HSS)

Was Elected as a Member of the Working Committee of The National Academy of Psychology (India), A.K. Sinha. (HSS)

NEERI Zonal Office Kanpur, May 93. Joint Project on Environmental Studies, S. Chopra. (HSS)

14. Chandrashakaran Award, Indian Association for the Study of Population (IASP), A.K. Sharma.  
(HSS)
15. Young Scientist from Department of Science and Technology. K. Deb.  
(Mech. Engg.)
16. Samsonov Award, International Institute for the Science of Sintering, G.S.Upadhyaya, and S Bhargava.  
(MME)
17. Young Scientist Award 1993. Indian Science National Academy, R. Balasubramaniam. (MME)
18. Maharashtra Govt. National Award, S.P. Mehrotra.  
(MME)
19. Tewksbnry Distinguished Annual Lecturer for 1993, of University Melbourne, Australia, P.C. Kapur.  
(MME)
20. Fellow, Maharashtra Academy of Sciences, Oct. 93, S.D. Joglekar.  
(Physics)
21. Malviya Award of Indian Ceramic Society has been given to Dr. D.C. Agrawal.  
(MSP)

(F) Continuing Education Activities

1. ISTE sponsored summer school on instrumental methods, May 1993, Organiser. V. Chandrasekhar. (Chemistry)

Delivered Lectures on Industrial Solid Waste Managements to MECON Engineers about 20 Nos., Jan. 27-28, 1994, Umesh Dayal.

(Civi 1 En. gg.)

Workshop on Earthquake-Resistant Non-Engineered IITK construction, + Joint Assistance Centre Kanpur, 3-5 Sponsored, IIT Dec., 1993, C.V.R.

Murty.

(Civil Engg.)

UNICEF Sponsored Training on Ferrocement Technology to Rural Sanitation, IERT. Allahabad, Dec. 1993, A. S . R. Sa i .

(Civil Engg.)

Short Course on Seismic Design of Reinforced Self-Concrete Buildings; sponsored, Kanpur, May 3-7, 1993, S. K. Ja in.

(Civil Engg.)

Short course on Seismic Design of Reinforced Concrete Buildings; Self-sponsored, N. Delhi, Oct. 11-15, 1993, S. K. Ja in.

(Civil Engg.)

Advanced Microprocessor Technolgy, alP June 1-24, 1993, Rajat Moona.

(CSE)

Mach Microkernel, Tata Information Systems Limited, Oct. 4-10, . 1993, G. Barua.

(CSE)

Database Implementation Techniques: File Structures, Aug. 1993 IIT Kanpur, T.V. Prabhakar.

(CSE)

Organized a Q.I.P. short-term course on "ANN Applications to Electric Power Systems," June 14

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19, 1993. (30 from academic institutes and two from industries), S.C. Srivastava.  
(Elect. Engg.)

11. Fiber Optics and its Applications, Specific industry, Kanpur, Aug. 30, to Sept. 3, ~1993. 27 persons attended from ONGC, Aloke K. Dutta. (Elect. Engg.)
12. A lecture given in a Short Course on Fibre Optics to and Its Applications given ONGC engineers, IIT, Kanpur, Aug 30 - Sept. 3, 1993, 35 participants from ONGC, Anjan K. Ghosh (Elect. Engg.)
13. Co-cordinator for Workshop on Video Teleconferencing sponsored by IETE, IIT April Kanpur, 1-2, 1994, 30 participants from institutes academic and industry/ others, Anjan K. (Elect. Engg.) Ghosh.
14. He was involved in the teaching and also in the lab sessions on the Short Term Course on Fibre Optics and its Applications, Aug. 30-Sept. 3, 1993 for ONGC engineers, Joseph John.  
(Elect. Eng.)
15. Organized a Three Week ICSSR-Sponsored Course in Research Methodology in Social Sciences, June to July 10, 1993 at IIT Kanpur, Course Director, B.N. Patnaik, Principal Coordinators K.K. Saxena and M.A. Ansari, Co-ordinator B. Rath  
(HSS)
16. Lectured at NLP Intensive Courses (Sponsored by DOE, Govt.of India) held at IIT Kanpur in July 93 and April 94. B.N.Patnaik.  
(HSS)

lectured at UGC Refresher Courses at Kendriya Sanskrit University of Tirupati on Nov. 29 & 30, 1993 and at Uthal University Administrative Staff College in Oct. 93. B.N. Patnaik.

(HSS)

Workshop on Leadership and Communication for Institute Officers of the Level of Superintendents/ARs/DRsl Engineering Officers IIT Kanpur, Aug 20-21, 1993. (with A.K. Sharma, M.A. Ansari, B.N. Patnaik, V. Narasimhan). N.K. Sharma.

(HSS)

Dance and Music 'The Khajuraho Festival'. (Unit in IGNOUS course on Tourism and 93. Travel Management, S. Chopra.

(HSS)

Population and Development; A Gandhian Perspective, Manuscript Prepared with a grant from QIP.

(HSS)

Two Units on Fertility Studies Prepared for the extramural Programme of International Institute of Population Science, Bombay. A.K. Sharma.

(HSS)

- a. Prepared a Course Package, TOM under CEC Programme.
  - b. Prepared Following two Volumes Under QIP.
    1. Determinants of Global Competitiveness.
    2. Management of Technology and Technovations.
- P . N. Ras  
tog i . (HSS)

Refresher Course on Real Analysis and Functional Analysis Dept. of Maths, R.D. Univ., Jabalpur,

March 1-11, 1994, Metric Spaces, Topology and Basics of Functional Analysis (Six lectures) Manjul Gupta.

(Maths)

24. Refresher course on Analysis, Aligarh University Sept. 10-11, 1993 Functional (Four talks). U.B. Tewari. Mus 1 im Analysis (Maths)
25. Refresher course on Analysis, Allahabad Dec. 1993 University, and Jan. 1, 1994. Measure Theory (Four talks) U.B. Tewari. (Maths)
26. He was one of the coordinators for the course entitled "Computer Aided Optimal Design" organized at IIT Kanpur on 21-26 February 1994. It was a self-financed course. There were seven participants from industries, K. Deb. (Mech. Engg.)
27. Delivered a one-hour lecture on "An Introduction to Optimization Algorithms" at a course on Taguchi Methods organized by Dr. T. Bagchi, IME. There were about 30 participants, K. Deb. (Mech. Engg.)
28. Organized the National Seminar on Aero Structures, (NASAS 1993), Dec. 29-30, 1993 at IIT Kanpur, P. Kumar. (Mech. Engg.)
29. Organized a One day Workshop on Polymer Composites, Saturday, June 12, 1993, P. Kumar. (Mech. Engg.)
30. The following two films prepared, by Dr. A.K. Mallik were Televised on National Network in

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U~C Transmission on Oct: by 27, 1993, prepared  
Dr. A.K. Mallik.

(i) Vibrations

( i i) Four-bar Coupler Curves.  
(Mech. Engg. )

1. Modern -Trends in Materials Joining, Self  
Supported, IIT, Kanpur, 26-31 July 1993, Nine  
attended, N.K. Batra  
(MME)

2 Gave three lectures at Gorakhpur University on  
Conceptual development of quantum mechanics,  
mathematical formalism of quantum mechancis and of  
quantization electromagnetic fields. Tulsi  
Dass.  
(Phys i cs)

3. Information Technology Trends, Programme for NT PC  
Executives, Management Development Institute  
(March, 1994), S. Sadagopan.  
(IME)

~ Coordinators, An Intensive Course on "Advances in  
Automated Manufacturing System", for  
Executives/Managers/ Engineers from Industry (February .  
1994), Kr i pa Shanker and A. Ghosh. (IME)

Taguchi Methods: Industry Applications for Process  
Performance, October 9-12, 1993, IIT Kanpur  
Continuing Education Programme.  
(IME)

Workshop on Office Automation, IIT Kanpur, Jan. 31  
- feb. 4, 1994. S. Sadagopan.  
(IME)

37. Short course on "Processing and Characterization of Advanced Ceramics" December 8-18, 1993, Materials Science Programme, IIT, Kanpur - 208016 under QIP programme. 22 persons (12 from Academic and 10 from Industry) participated.

(MSP)

38. Organised one day intensive workshop on 'New and Improved Grades of Cutting Tool Materials by Powder Metallurgy Route', IIT, Kanpur, 18th June 1993, G.S. Upadhyaya.

(MME)

(g) Participation in High Level Industry Academia Interaction Programme during Summer

1. ANURAG, Ministry of Defence, 15 May-20 July 1993  
Hyderabad, K. Murlidhar.  
(Mech. Engg.)