

Publications in 1983-84

AERONAUTICAL ENGINEERING

1. Buckling of composite plates under varying. edge loads (Jr. Inst. Engrs. India, New- Div. p. 12-17, 1983)
S. 'Sharma, P.N. Murthy, N.G.R Iyengar
2. A study of coupling in laminated plates (J. Fiber Sci.Tech. Vol. 18, 1983, p. 287-300)
S. Sharma, .. N.G.R. Iyengar, P.N. Murthy
3. Optimal Design of clamped laminated plates .. (J. Fiber Sc. & Tech., Vol. 19, 1983)
S.P. Joshi, N.G.R Iyengar
4. Optimal Design of laminated composite plates under axial compression (Proc. IXth Canadian Congress of Applied Mech. June, 1983)
S.P. Joshi, N.G.R Iyengar
5. Performance comparison of straight and curved diffusers (Def. Sci. Jr. Vol. 33, NO.3, 1983, pp.' 195-203)
RK. Sullerey, Brajesh Chandra, V. Muralidhar
6. Free stream turbulence effects on compressor cascade- wake (Jr. of Aircraft, Vol. 20, NO.8, Aug. pp. 733-734)
RK. Sullerey, M.A. Sayeed Khan
7. Turbul~p.t..fiow measurements in the jet issuing from vane swirlers (Proc. XIIth National Con!. on Fluid Mech. & Fluid Power, Dec. 8 p. 247-250)
RK. Sullerey, S. Jha

8. Optimum design of induction system in a diesel engine
(VIIIth National Conf. on IC Engine & Combustion, Trivandrum, 1983)
D. Yadav, K.P. Singh
9. United. similitude for wedge & cone with attached shock
(Proc. of the 9th Canadian Congress of Appl.Mech., May 30-June, 1983
Univ. of Saskatoon, Canada,p. 533)
Kunal Ghosh
10. Potential solution for sub-critical compressible flow by a Panel Method
(Proceedings of the 9th Canadian Congo of Appl. Mech. Saskatoon, May 30-
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K.S. Ravichandran, N L. Arora, R. Singh
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(International Jr. of Systems Science Vol. 14, No. 12, 1983, pp. 1305-1409)
S.C. Raisinghani, A.K. Adak
12. A new method for data pre-processing (Jr. of Guidance Control &
Dynamics, March-April, 1984, pp. 255-256)
S.C. Raisinghani, K.D. Bilimoria
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Books :

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Gupta, S.K. Gupta

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1. A Design Approach Based on Phase Plane Analysis: Countercurrent Reactor/ Heat
Exchanger with Parametric Sensitivity (AIChEJ, 29, 87, 1983)
L.M. Akella, H.H. Lee
2. Characterization of Ethylene Oxidation Reactions: Selectivity Based, on
Oxygen Chemisorption (To be published in Chem. Eng. ScL)
L.M. Akella, H.H. Lee
3. An Experimental method. of Determining Catalyst Surface Area by Thermal
Desorption of physisorbed gases (paper No. 27e, AIChE Annual Meeting,
Washington, D.C., 1983)
L.M. Akella, D.J. Miller, H.H. Lee

4. Global rates in Multiple Reaction Networks: An Integral Approach to Numerical Solution of Pellet Diffusion Equations (Submitted to Chern. Eng. Sci.)
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5. Variable Cross Section Tubular Reactors (Submitted to Chern. Eng. Sci.) L.M. Akella, H.H. Lee
6. Reaction Engineering of Step Growth Polymerization (Research monograph) (Plenum, in press, 1983)
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7. Polymer Engineering Science, (in press, 1984) A.
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8. Simulation of Step Growth Polymerization, (Chern. Eng. Commun., 20, 1, 1983) S.K. Gupta, A. Kumar
9. Scale-up of Disc Stack Centrifuges in Encyclopedia of Fluid Mechanics (Vol. 5, N.P. Cheremisinoff, Ed., Gulf, Houston, 1984)
A. Kumar, S.K. Gupta
10. Simulation and Design of Industrial Nylon-6 Reactors, J. Macromolecular Science-Reviews 'in Macromol. Chem. and Physics (In preparation, 1984) A Kinetic Approach (Submitted in Polymer)
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11. Modelling of Cyclization Reaction on the Self Polymerization of RAF A.
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12. Molecular Weight Distribution for Anionic Polymerization in Batch Reactors (submitted in Macromolecules, 1984)
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13. Molecular Weight Distribution for Anionic polymerization in Homogeneous Continuous Flow Stirred Tank Reactors (Submitted in J. Appl. Polym. Sci.)
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14. MWD for Radical Polymerization in Batch Reactors (submitted) A.
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15. MWD for Radical Polymerization in HCSTRs (submitted) A.
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16. Modelling of Irreversible Step Growth Polymerization at high conversions with Diffusion and Reaction in Batch Reactors (submitted in Polymer)
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22. Optimum temperature history in the Polycondensation Step of PET Formation using Second Order Method (Polym. Eng. Sci., submitted)
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24. Forced Oscillations in CSTRs with Nonlinear Step Growth Polymerization (J. Appl. Polym. Sci., submitted)
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26. Studies on the Enhancement of Modified Sludge Sedimentation Rate in Tubular Clarification Unit under Inclined Condition (December 1983 Can. J. of Chem. Engg.)
P.K. Bhattacharya, S. Basu
27. Reeneration of Black Liquor through Batch Electrodialysis (Accepted in Can. J. of Chem. Engg.)
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29. Continuous electrodialysis for the regeneration of alkaline Black liquor Communicated to I & EC (Proc. Des. Dev.)
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30. Studies on the colour removal of Bleach plant Effluent (Communicated to Chem. Tech. & Biotechnology)
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37. Characterization and Catalytic Activity of Nickel Zeolite Catalysts: n-Hexane Isomerization, Zeolites, communicated)
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38. Kinetics of Methylcyclohexane over a Pt-Re-Al₂O₃ Catalyst in Presence of Added Hydrogen, Ind. and Engn. Chem. Fundamentals, communicated)
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40. Liquid Phase Xylene Isomerisation over Nickel Hydrogen Mordenite Catalyst (Under preparation)
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41. Esterification of Benzyl alcohol with acetic acid catalyzed by cation exchange resin - a kinetic study (Under preparation)
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70. Phase Transitions in $\text{MnTiF}_6 \cdot 6\text{H}_2\text{O}$ and $\text{ZnTiF}_6 \cdot 6\text{H}_2\text{O}$ observed by IR spectroscopy (J. Phys. C Sol. Stab. Phys. 16, 1609, 1983) P. Choudhury, B. Ghosh, a.p. Lamba, H.D. Bist
71. Structural Investigations on $\text{Sr}(\text{NO}_2)_2\text{X}_2\text{O}$ (X=H,D); Vibrational Analysis (J. Mol. Struct. 101, 223, 1983)
a.p., Lamba, H.D. Bist, D.P. Khandelwal
72. Vibrational Spectrum and Phase Transitions in $\text{Ni}(\text{CH}_3\text{COO})_2 \cdot 4\text{X}_2\text{O}$ (X=H,D), (J. Mol. Struct. 101, 7, 1983)
G.S. Raghuvanshi, M. Pal, M.B. Patel, H.D. Bist
73. Vibrational Spectra and Phase Transitions in Mercury Perchlorate Hexahydrate (J. Chem. Phys. 79, 4489, 1983)
M.B. Patel, H.D. Bist
74. Normal Modes of $\text{M}(\text{O})_2$ ion in $\text{Tb}_{1/3}\text{Eu}_{2/3}(\text{MoO}_4)_3$ Single Crystal, (J. Sol. State Chem. 48, 77, 1983)
S.S. Saleem, G. Aruldas, H.D. Bist
75. Raman Spectra of $\text{Gd}(\text{MoO}_4)_3$ and $\text{Tb}(\text{MoO}_4)_3$ in the region 20-250 cm^{-1} (Spectrochim. Acta A39, 627, 1983)
S.S. Saleem, G. Aruldas, H.D. Bist
76. Low frequency Vibrational spectra of lithium formate monohydrate and its aqueous solutions (Can. J. Chem. 61, 1983)
A. Agarwal, D.P. Khandelwal, H.D. Bist
77. Raman and infrared spectra of $\text{Gd}(\text{MoO}_4)_3$ single crystal in the region 250-1000 cm^{-1} , (Spectrochim. Acta 39A, 1049, 1983)
S. Saleem, G. Aruldas, H.D. Bist
78. The Raman Spectra, of Magnesium and Zinc fluoro-titanate Hexahydrates systems (J. Raman Spectrosc. 14, 94, 1983)
P. Choudhury, B. Ghosh, G.S. Raghuvanshi, H.D. Bist
79. Single Crystal Raman Spectra of Magnesium and Zinc perchlorate Hexahydrates (J. Raman Spectrosc, 14, 406, 1983)
M.B. Patel, A. Agarwal, H.D. Bist
80. Vibrational Raman studies of normal (do₁₀) and deuterated (do₁₂) tetramethyl ammonium chlorides, (J. Raman Spectrosc (in press), 1984)
M. Pal, A. Agarwal, M.B. Patel, H.D. Bist
81. Vibrational Studies and Phase Transitions in $\text{Co}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$ and $\text{Mn}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$. (Chem. Phys lett **101,93**, 1983)
M.B. Patel, S. Patel, D.P. Khandelwal, H.D. Bist
82. Dynamic Disorder of $(\text{CH}_3)_4\text{N}^+$ in $(\text{CH}_3)_4\text{NX}$ (X=Cl, Br and I) (J. Mol. Struct, in press)
M. Pal, A. Agarwal, D.P. Khandelwal, H.D. Bist

83. Low Temperature Infrared and Raman Spectra of Co (CH₃COO)₂·4H₂O/D₂O, (Appl. Spectrosc in press, 1984)
G.S. Raghuvanshi, D.P. Khandelwal, H.D. Bist
84. Optical Transitions of Eu³⁺ Ions in EuCl₃ solutions
(Pramana, in press)
S. Raman, a.p. Lamba, H.D. Bist
85. Normal Modes of MoO₄ ion in Tb₂UO₇(MoO₄)₂ Single Crystal (J. Sol. State Chem. 48, 77, 1983)
S. Sheik Saleem, G. Aruldas, H.D. Bist
86. Phase Transitions in Co (CH₃COO)₂·4X₂O (X=H,D) from temperature dependent vibrational spectra (Chem. Phys. Lett., 103, 1984)
G.S. Raghuvanshi, H.D. Bist
87. Fermi Resonance in M(CH₃COO)₂·4X₂O (X=H,D M=Co, Ni and Mg)
(Spectrochim. Acta, in press)
G.S. Raghuvanshi, D.P. Khandelwal, H.D. Bist
88. Raman Spectra and Phase Transitions in Single Crystal of (NH₄)₂ZnCl₄
(Commun. Spectrochim. Acta, 1984)
A. Agarwal, M.B. Patel, M. Pal, H.D. Bist
89. Dynamics of order-disorder phase transitions in NH₄SCN probed by Raman Scattering
G.D. Tewari, G.S. Raghuvanshi, V.P. Tayal, H.D. Bist
90. Raman Scattering Study of Phase Transition in NH₄SCN
(National Symp. Mol. Spectrosc. IACS, Calcutta 1984)
G.D. Tewari, G.S. Raghuvanshi, D.P. Khandelwal, H.D. Bist
91. Laser Raman Studies of Incommensurate Phase in (CH₃)₂NH₂ZnCl₄ (Lasers and Appl. (1984) Ed. H.D. Bist and G.S. Goel)
M. Pal, D.P. Khandelwal, V.N. Saran, H.D. Bist
92. Laser Raman Study of Phase Transitions in Single Crystal of Mg(ClO₄)₂·6H₂O (Lasers and Appl. McGraw Hill, 1984)
M.B. Patel, A. Agarwal, V.N. Sarin, H.D. Bist
93. Laser Raman Study of Phase Transition in Single Crystals of Zinc and Manganese fluorotitanate Hexadeuterates
(Lasers and Appl. McGraw Hill, 1984)
P. Choudhury, B. Bosh, M.B. Patel, H.D. Bist
94. Laser Raman Spectra of Rochelle Salt (NaK C₄H₆O₆·AH₂O) (Lasers and Appl. McGraw Hill, 1984)
R. Bhattacharjee, Y.S. Jain, G.S. Raghuvanshi, H.D. Bist

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95. Lattice Instabilities and Mode Softening in $\text{Cs}_2\text{ZnI} \cdot$ Single Crystal
(Laser and Appl. McGraw Hill, 1984)
O.P. Lamba, S. Ram, Prem Chand, H.D. Bist, G.C. Upreti
96. Laser induced Fluorescence of $\text{Eu}^{3+} : \text{Eu}_2(\text{SO}_4)_3 \cdot 2.8\text{H}_2\text{O}$ in
Aqueous, and Non-aqueous Solutions (Lasers and Appl. McGraw Hill, 1984) S.
Ram, D.P. Khandelwal, H.D. Bist
97. Laser induced Fluorescence of Eu^{3+} ion from $\text{Tb}_{1-x}\text{Eu}_x(\text{MoO}_4)_3$, (Appl.
McGraw Hill, 1984)
S.S. Saleem, G. Aruldas, H.D. Bist
98. 'FJ- absorptions of Tb^{3+} and Eu^{3+} and multiphonon modes of MoO_4 ions in $\text{Tb}_{1-x}\text{Eu}_x(\text{MoO}_4)_3$ and $\text{GdTb}(\text{MoO}_4)_3$
(Infrared Phys. 24, 217, 1983)
S.S. Saleem, G. Aruldas, H.D. Bist
99. Electronic Energy levels of Tb^{3+} and Eu^{3+} in $\text{Tb}_{1-x}\text{Eu}_x(\text{MoO}_4)_3$ single crystal
(spectrochim Acta A 40, 149, 1984)
S. S. Saleem, G. Aruldas and H. D. Bist
100. Spin Structures in Nuclear (Pramana, 21, 11,
1983) R Ramachandran

INDUSTRIAL MANAGEMENT ENGINEERING

1. The parametric network feasibility problem (Cashier du Centre D Etudes de Recherche Operationnelle, Vol. 25, No. 1-2, 1983)
RK. Ahuja, J.L. Batra, S.K. Gupta
2. A parametric algorithm for convex cost network flow and related problems
(European Journal of Operational Research, Vol. 16, No. 1, 1984)
RK. Ahuja, J.L. Batra, S.K. Gupta
3. Innovation in Indian firms, myths and reality
(Economic and Political Weekly, Aug. 27, 1983)
A.P. Sinha
4. Minimising unconstrained quadratic bivalent functions
(European Journal of Op. Research, Vol. 15, 1984)
V.P. Gulati, S.K. Gupta, A.K. Mittal
5. Constrained optimum communication trees and sensitivity analysis
(SIAM Journal of Computing, Vol. 13. NO.2, May 1984)
S. Agarwal, A.K. Mittal, P. Sharma

6. Facilities Location with ring radial distances (Trans. of Am. Institute of Industrial Engineering, Under print)
V.K. Nair, A.K. Mittal
7. New approaches to multi-criteria Mathematical Programs (European Journal of Operations Research, Under print)
S. Sadagopan, A. Ravichandran
8. A test of the relationship between manufacturing technology and the scope for innovation (OMEGA, Under print)
A.P. Sinha
9. Multiple performance appraisal of cotton textile mill-a factor analytic approach (Proceedings of the 16th ORSI, Dec. 8-10, IIT Kanpur)
Wasim Abbas, J.L. Batra
10. Ergonomic considerations in the design and development of Management Information Systems (Proceedings of the 16th ORSI, Dec. 8-10, 1984, Kanpur)
S.A.E. Rizvi

MATERIALS SCIENCE PROGRAMME

Books Published

1. Contributed a chapter entitled "Solid Electrolyte Lithium Batteries" in 'Lithium Batteries' edited by J.P. Gabano, Academic Press, 1983

Research Publications

1. Measurements of Zeta-potential and its relevance in Kinetics of electrophratic deposition (Trans. IIM" 36, 1983, 363)
J.Y. Chaudhary, H.S. Ray, K.N. Rai
2. Electron Transport in non-crystalline Garnet films (Bull. Mat. Sci., 6, 1984, 53)
D. Bahadur, D. Roy, B. Singh, D. Sharma
3. Magnetic Properties of Barium borate glasses containing Nickel micro granules (J. Phys. D. Applied Physics, 14, 1984, 163)
S. Dutta, D. Bahadur, D. Chakravorty
4. Crystallisation behaviour and magnetic properties of Al₂O₃-Mn₂O₃-Fe₂O₃-SiO₂ glass (Physica Stat. Solidi, 82(a), 1984, K II)
D. Roy, D. Kumar, D. Bahadur
5. Electrical, optical and structural properties of semi-transparent metallic layers (J. Vac. Sci., Technology, A1(3), 1983, 1420)
. S. Kar, R. Varghese, S. Bhattacharya

-
6. Determination of semiconductor quasi-fermi level separation under illumination (J. Appl. Phys., 54(4), 1983, 1988)
S. Kar, S. Verma
 7. Short range order in **eu-Al** alloys containing > 16 at % Al . (J. Matl. Sc. Lett., 3(2), 1984, 100)
K.P. Gupta, T.R. Ramachandran, K.R. Rajendran, S. Das
 8. The ordered State of Ni₃Cr alloy (Trans. 11M, 36, 1983, 163) K.R. Subramanian, K.P. Gupta
 9. Thermochromism in Borate glasses containing Bi-oxide (J. Matl. Sc. Lett., 2, 1983, 677)
A.N. Sen, J. Kumar, D. Chakravorty
 10. Mossbauer Spectroscopy of Titanium Substituted Iron Garnets (Bull. Mater. Sci. 6, 3q, 1984)
C.M. Srivastava, S.N. Shringi, B.U.M. Rao, D. Bahadur, Om Prakash

Research Publications

1. Electrical Characteristics of Silicon-Tin Oxide Heterojunction prepared by chemical vapour Deposition (J. Appl. Phys., 55, X, 1984)
S. Verma; K.V. Rao, S. Kar

NUCLEAR ENGINEERING & TECHNOLOGY

1. Rational Function Approximation singular Eigen Function in Monoenergetic Neutron Transport Equation (J. Approximation Theory, communicated)
A. Sengupta
2. Laser Induced Cooling in low pressure Gases (The Journal of Thermal Engineering) (to be published)
D.K. Jain, M.S. Kalra, J.S. Goela
3. A Simplified 2-fluid model of steam-generator for Digital simulation of operational Transients (to be published in annals of Nuclear Energy, 1984)
R. Bhatnagar, P. Munshi, K. Sri Ram

Summer Schools, Short/Intensive Courses, Conferences

AERONAUTICAL ENGINEERING

Conferences attended by the faculty

1. 12th National Conference on Fluid Mechanics & Fluid Power, Dec. '83 R.K.
Sullerey
2. 9th Canadian Congress of Applied Mechanics, Canada, May 3D-June 3, 1983 KULLal
Ghosh
3. 9th Canadian Congress of Applied Mechanics, Canada, May 3D-June 3, 1983 N.L.
Arora
4. Annual Conference of Aeronautical Society of India, Nov. 1933 N.G.R.
Iyengar
5. Streamline Method for unified understanding of classical now problems, N.A.L.
Bangalore, March 27, 1984
C.S. Moorthy

Continuing Education Program

1. Participated as an Instructor in the courses for Air Force Officers being sent. to France
for training in maintenance and repairs of French Mirages
Krishna Kumar

CHEMICAL ENGINEERING

a. Organized

1. Heat Exchanger Design and Vibration Analysis 1983-84 J.P.
Gupta
2. Workshop on teaching of Thermodynamics to Engineering Students Nov. 11-12, 1983
M.S. Rao, Y.V.C. Rao
3. Micromixing and Selectivity of Chemical Reactors, March 31-April 2, 1983 RN.
Sharma, J.R Bourne, RA. Mashelkar
4. Invited Lecture on State of Art in Polymerization Reaction Engineering. At Workshop on Polymers-materials 2000 A.D. DMSRDE, Kanpur, Mar 28-29, 1984
Anil Kumar
5. Invited Seminar at IPCL Research Centre, Baroda S.K.
Gupta
6. Lecture on Rate Processes in Extractive Metallurgy, Dec. 1983 Dept. of Met Eng.
D. Kunzru
7. Seminar on Three-Phase Flow through Porous Media at Institute of Reservoir Studies, O.N.G.C. Ahmedabad Oct. 1983, RRL. Hyderabad Oct. 1983, Indian School of Mines, Dhanbad, Feb. 1984
D.N. Saraf
8. Presented paper at International Chemical Reaction Engg. Conference, Pune Jan 8-10, 1984
D.N. Sarar
9. Seminar on Role of Wet-end-additives in Process and Quality Control in Paper Mills IPPTA, Delhi, March 8-9, 1984
J.K. Gehlawat
10. Seminar on Direct hydrolysis of wet-milled tapioca roots to Fermentation sugars. Seminar on Sago and Starch, Salem, March 25, 1984
J.K. Gehlawat
11. Seminar delivered at Universidad Nacional del Sur, Bahria Blauca, Argentina, - INTEC, Santa Fe, Argentina
J.P. Gupta
12. Organised Course and Laboratory in Argentina Sept-Nov. 1983 J.P.
Gupta

b. Attended by Faculty Elsewhere

1. International Chemical Reaction Engineering Conf. Jan 84 V.
Ravichandran, D. Kunzru, S.K. Gupta, K.S. Gandhi

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2. DST-UNDP sponsored seminar on Matrix Resins for Composites, IIT Delhi,
:March 1984
S.K. Gupta
 - a. Computer based numerical techniques in Engineering IISc Bangalore,
(April 25-May 9, 84
A: Khanna:
 4. Rapporteur, for Solar water heating & solar cooling session. National Solar Energy_
Convention, Jyoti Ltd. Vadodara, 1983
D.P. Rao
 5. Discussions on 2 type National Solar Pond Project Jyoti Ltd. Vadodara Dec. 1983 D.P.
Rao
 6. 14th International Symposium on Shock tubes and waves Sydney University, Ang.
15-18, 1983
Y.V.C. Rao
 7. International Seminar on Development of Petro-Chemical Industries,
New Delhi, Sept. 29-30, 1983
Raj -Sharma

Prizes, Medals, Membership etc.

1. NOCIL Award for 1983 for Excellence in Design & Development of
Process Plant & Equipment
J.K. Gehlawat
2. Member, Editorial Board, Liquid Atomization and Spray systems. Applied
Science Publisher U.K.
J.P. Gupta
3. Associate Member: Institution of Chemical Engineers (India) K.A.
Narayan
4. Member, Faculty of Engineering, Aligarh Muslim University, Aligarh D.N.
Saraf
5. Member, Industry Research Education Coordination Committee and Research &
Development Committee, Indian Institute of Chemical Engineers
D.N. Saraf

CHEMISTRY

Invited talks and seminars

1. Invited lectures at the University of Kashmir, Srinagar, June 1983
U.C; Agarwala
2. National symposium on reagents, reactions and rearrangements,
University of Madras, Jan. 20-23, 1984
S. Chandrasekaran
3. School of Chemistry, University of Hyderabad, October, 1983 S.
Chandrasekaran
4. Studies in Overhauser Effect, Dept. of Chemistry, Drexel University,
Philadelphia, U.S.A. Aug. 18, 1983
P.T. Narasimhan
5. Recent work in NQR Spectroscopy at I.I.T. Kanpur, Department of Chemistry,
CUNY, New York, Sept. 13, 1983
P.T. Narasimhan
6. Fascinating Applications of NMR, Department of Chemistry, St.
Stephen's College, Delhi, Jan. 20, 1984
P.T. Narasimhan
7. Recent Trends in Magnetic Resonance, Dept. of Physics, Karnatak University,
Dharwar, UGC Extension Lecture, Feb. 25, 1984
P.T. Narasimhan
8. Studies in Electron-Nuclear" Overhauser Effect, Dept. of Physics, Karnatak
University, Dharwar, UGC Extension Lecture, Feb. 25, 1984
P.T. Narasimhan
9. Biomedical Applications of NMR, J.I.P.M.E.R., Pondicherry, March 1, 1984 P. T.
Narasimhan
10. Biomedical Applications of Magnetic Resonance, Univ. of Hyderabad,
Hyderabad, March 6, 1984
11. Applications of NMR to Problems in Biology,
Hindustan Level Research Centre, Bombay, April 14, 1984
P.T. Narasimhan
12. Studies in Nuclear Quadrupole Resonance Spectroscopy (2 lectures), .. Solid
State Structural Chemistry Unit, Indian Institute of Science,
Bangalore, April 21, 1984
P.T. Narasimhan
13. Applications of NMR to Biology, Defence' Food Research Laboratory,
Mysore, April 25, 1984
P.T. Narasimhan

14. Unusual Applications of Magnetic Resonance, Central Food Technological Research Laboratory Mysore, May 2, 1984
P.T. Narasimhan
15. Fascinating Applications of Magnetic Resonance, IDL-Nobel Basic Research Institute, Bangalore, May 4, 1984
P.T. Narasimhan
16. Nuclear Hexadecapole Couplings in NKR, Dept. of Physics, Indian Institute of Science, Bangalore, June 5, 1984
P.T. Narasimhan
17. Fascinating and Unusual Applications of Magnetic Resonance, Feb. 27, 1984 P.T. Narasimhan
18. Investigations in NQR Spectroscopy-I, March 16, 1984 P.T. Narasimhan
19. Investigations in NQR Spectroscopy-II, March 19, 1984 P.T. Narasimhan
20. Biomedical Applications of NMR, March 29, 1984
(under the joint auspices of Indian Medical Association, Mysore chapter)
P.T. Narasimhan
21. Studies in Overhauser Effect, April 3, 1984 P.T. Narasimhan
22. Biochemical and Biomedical Applications of NMR, April 24, 1984 P.T. Narasimhan
23. Series of sixteen lectures on Symmetry and Molecular Structure, Mysore University, Feb.-May, 1984
P.T. Narasimhan
24. UGC sponsored workshop on spectroscopy, Ravishankar University, Raipur, Jan. 23, 1984
P.C. Nigam
25. The Nitro Group: Novel facets related to synthesis and reaction mechanisms, 7th National Symposium in Organic Chemistry, Calcutta, 1983
S. Ranganathan
26. The evolution of the genetic code: Studies on the genesis of coded α -amino acids. A centrally controlled approach to their synthesis and side chain metamorphosis in intact peptides, National Symposium on New Reagents, Reactions and Re-arrangements, Madras, 1984
S. Ranganathan
27. Chemical Studies of Molecular Interactions Related to Self-organizing systems, Platinum Jubilee Symposium, IISC., Bangalore, 1984
S. Ranganathan

28. Recalcitrant Reactions and Resourceful Strategies, work-shop,
Organic Chemistry Up-date, Bangalore, 1984
S. Ranganathan
29. Annual Convention of Chemists, Ravenshaw College, Cuttack, Dec. 26, 1983 N.
Sathyamurthy
30. Chemistry Department, Oklahoma State University,
Stillwater OK 74074 USA, June 22, 1984
N. Sathyamurthy
31. Organized ρ Winter School on Molecular Reaction Dynamics, I.I.T.
Kanpur, Jan. 1-14, 1984
N. Sathyamurthy
32. Delivered Presidential address on Organic Electron Transfer Reactions at the
Organic Chemistry Section of the 3rd Annual conference of the Indian Council
of Chemists, October 1983
P.R. Singh
33. Delivered an invited lecture on New Reactions and New Mechanisms in Organic
Chemistry at the Central Salt & Marine Chemicals Research Institute,
Bhavnagar, July 1983
P.R. Singh
34. Invited lecture at IIT Delhi on Novel Free Radical Reactions in Organic
Chemistry, October 1983
P.R. Singh
35. Invited lecture at IIT Bombay on Whether Free Hydride Participates in Reactions,
November 1983
P.R. Singh
36. Invited lecture entitled Zeolitic Molecular Sieves as Free Radical Traps in EPR
Spectroscopy, Department of Chemistry, University of Alberta, Edmonton, Canada,
October, 1983
P. Raghunathan
37. Invited lecture entitled Molecular Sieves as Free Radical Traps Alberta
Research Council, Edmonton, Canada, November 1983
P. Raghunathan
38. Invited lecture entitled Some Recent Multiple Quantum Deuterium NMR
Spectroscopy, Department of Chemistry, University of British Columbia,
Vancouver, B.C. Canada, June 1984
P. Raghunathan
39. National Symposium on reagents, reactions and rearrangements,
University of Madras, Jan. 20-23, 1984
Y.D. Vankar

Conferences/Symposia attended and papers presented

1. International seaweed symposium, Qingdo, Peoples' Republic of China; June 19-25, 1983
D.N. Dhar
2. Annual Conventions of Chemists, Ravenshaw College, Cuttack, Dec. 26-30, 1983 S.K.
Dikshit
3. Third Annual Conference of Indian Council of Chemists, Dharwad, October 28-30, 1983
S.K. Dogra
4. Symposium on Molecular Spectroscopy, Indian Association for the Cultivation of Science, Jadavpur, Calcutta, February, 1984
S.K. Dogra
- o. Annual Meeting of Association of Magnetic Resonance Spectroscopists (AMRS), held at Indian Institute of Science, Bangalore (1983) (Presided over the sessions as President of AMRS)
P.T. Narashimhan
6. Seventh International Symposium on Nuclear Quadrupole Resonance Spectroscopy held at Kingston, Canada (July 1983). Presented a paper and chaired technical session. Was elected as a Member of the International Committee for NQR Symposia
P.T. Narasimhan
7. Eighth Meeting of the International Society for Magnetic Resonance (ISMAR) held at Chicago, U.S.A., Aug. 1983-Presented an Invited Paper on NQR Spectroscopy and contributed a paper on Overhauser Effect and also chaired a technical session. Was elected to the International Council of ISMAR
P.T. Narasimhan
8. National Symposium on Science and Technology Policy of Government of India, held by the National Academy of Sciences, India at Delhi, Dec. 1983
P.T. Narasimhan
9. Annual Meeting of the Association of Magnetic Resonance Spectroscopists (ARMS), held at Regional Research Laboratory, Hyderabad, March 11-18, 1984 Presided over the sessions as President of ARMS
P.T. Narasimhan
10. Platinum Jubilee Symposium on Recent Trends in Organic Chemistry, held at Indian Institute of Science, Bangalore, July 1984. Presented an invited talk on Dynamic Nuclear Polarisation and Free radical-solvent interaction
P.T. Narasimhan

11. First International symposium on Kinetic Methods of Analysis, University of Cardoba, Spain, July 27-31, 1983
P.C. Nigam
12. Annual Convention of Chemists, Ravenshaw College, Cuttack, Dec. 26-30, 1983
P.C. Nigam
13. Third Annual Conference of Indian Council of Chemists, Dharwad, October 28-30, 1983
14. Third symposium on laser spectroscopy and applications, IIT Kanpur, December 16-20, 1983
S. Sarkar
15. Fifth American Conference on Theoretical Chemistry, Jackson, Wyoming, USA, June 15-20, 1984
N. Sathyamurthy
16. Third Annual conference of Indian Council of Chemists, Dharwar, October 28-30, 1983
P. R. Singh

CIVIL ENGINEERING

1. Work-Shop on Curriculum Development in Engineering Geology, I. I. T. Delhi, Feb. 29, 1984
B.C. Raymahashay
2. Keynote address on Perspectives of Environmental Geology, National Conference on Pollutional Stress in Major Indian River Basins, Aligarh Muslim University, March 19-21, 1984
B.C. Raymahashay
3. International Conference in Soil Structure Interaction, Nov. 29- Dec. 3, 1983, Roorkee
M.R. Madhav, Panchist
4. Indian Geotechnical Conference, Dec. 21-24, 1983, Madras
M.R. Madhav (Co-Chairman)
5. Pile Foundation Engineering Staff College Krishnarajasagar, Mysore, Sept. 1983
M.R. Madhav
6. Seminar on Ground Improvement Techniques, Indian Geotechnical Society and Institution of Engineers (I), Visakhapatnam, Dec. 1983
M.R. Madhav

7. Seminar on Transportation in Developing Countries, Organised by PTRC at Warwick, U.K., July 4-7, 1983
B.R. Marwah
8. Computer Simulation Conference, Organised by Society for Computer Simulation 'at Vancouver, Canada,' July 11-13, 1983
B.R. M'arwah
9. Annual Convention of Operations Research Society of India at I.I.T. Kanpur, Dec. 8-10, 1983
B;R. Marwah
10. International Conference on Heavy Metals in the Environment, Heidelberg (FRG), Sept. 1983
C. Venkobachar
11. Workshop Attended to Evolve Syllabi of B.Tech./B.E. Courses in the Area '01 Environmental Engineering, Organised by Curriculam Development Cell, Dept. of Civil Engg., LLT. Delhi, March 2-3, 1984
C. Venkobachar
12. Engineering Behaviour of Rocks I, Proc., Short Course on Recent Developments in Lab. and Field Tests. and Analysis of Geotechnical Problems, AIT, Bangkok, Dec. 12-16, 1983
Yudhbir
13. Engineering Behaviour of Soils and Rocks II, Proc. Short Course on Recent Development in Lab. and Field Tests and Analysis of Geotechnical Problems, AIT Bangkok, Dec. 12-16, 1983
Yudhbir
14. Geotechnical Aspects of Communal Irrigation Systems, AIT Bangkok, Bangkok, NIA Philippines, Sponsored Seminars, Manila, June 1983 and Davao City, Oct. 1983
Yudhbir
15. Chairman of a Techsical Session at the National Symposium on Strategies for Irrigation Development held at Bihar College of Engg. Patna, Feb. 23-25, 1984
V. Lakshminarayana
16. Chairman of a Working Group at the Workshop to Promote the Use of National Standards in Technical Education, Organised by ISI and IIT Kanpur, Nov. 7, 1983 and Feb. 6, 1984
V. Lakshminarayana
17. Delivered lectures on Planning and Development of Water Resources by Systems Approach, at the Special Course on Reservoir Operation, Flood Control and Hydrologic Data, Organised by the Water Resources Development Training Centre, Roorkee, Oct. 24- Nov. 19, 1983
V. Lakshminarayana

18. General Reporter for a Technical Session at the National Symposium on Strategies for Irrigation' Development held at Bihar College of Engineering, Patna, Feb. 23-25, 1984
K. Subramanya
19. Twenty-enth Congress of Indian Society for Theoretical and Applied Mechanics, Andhra University, Waltair, December 26-28, 1983
A.S.R. Sai
20. Chairman of a Technical Session at the Seminar on Modern Trends in Structural Analysis and Design, Banaras Hindu University, Varanasi, Feb. 25-26, 1983
A.S.R. Sai
21. Invited Lectures: Department of Civil Engineering, Andhra University, Waltair, December 27, 1983
 - i) Skirt Foundations
 - ii) Natural Polymers in concrete construction iii) Utilization of Rice husk-ash
 A.S.R. Sai
22. Workshop to Promote the Use of National Standards in Technical Education, IIT Kanpur, November 1983, February 1984
A.S.R. Sai
23. Chairman of the Technical Session on Transportation Problems, Annual Convention of Operational Research Society of India, IIT Kanpur
S.P. Palaniswamy
24. Indian Roads Congress-44th Annual Conference, Nagpur, January 1984
 - a) Invited speaker on Road Research in India-A panel discussion
 - b) Invited address on Traffic Simulation Modelling and other achievements of Indo-Swedish Traffic Simulation Research Projects to the Annual Meeting of the Chief Engineers (as a part of IRC)
 S.P. Palaniswamy

AWARDS

1. K.V.G.K. Gokhale was awarded the Coggen Brown' Memorial Gold Medal for 1983 in Geological Sciences by the Mining, Geological and Metallurgical Institute of India
2. Dr. S.R. Singamsetti was awarded by the Institution of Engineers (India) 'The Institution Prize for 1982-83' for his joint paper entitled 'Downpull/Uplift on Vertical Lift and Tainter Gates in Closed Conduits' by S.R. Singamsetti and R.L. Sharma, Vol. 63, CI 3, Nov. 1982

COMPUTER SCIENCE & ENGINEERING

Conferences

Attended by Faculty elsewhere

1. Computer Society of India Annual Conference, Hyderabad, 1983 G.
Barua, H.V. Sahasrabudhe
2. International Conference on Systems, Man & Cybernetics, 1983, New Delhi
H.V. Sahasrabudhe
3. Third Conference on Foundations of Software Technology & Theoretical
Computer Science, 1983, Bangalore
H.V. Sahasrabudhe, S. Biswas

ELECTRICAL ENGINEERING

Invited Lectures

1. Workshop on Physics of Communication at ICTP, Trieste, Italy
during Nov.-Dec. 1983
T. Das
2. Keynote address on Communications in the Seminar on Calcutta 2000 A.D. held in
Feb. 84, at the Bose Institute, Calcutta
J. Das

Intensive Courses, Summer & Winter Schools, etc.

1. Special Course for Air Force Officers, 27 July 83 to 24 Nov. 83 2.,
Special Course for Air Force Officers, 26 Dec. 83 to 12 April 83
3. Summer School under QIP on "Advanced Power System Analysis and
Dynamics", May 83. (two weeks)
4. Five courses in Microprocessor Systems, three of 5 weeks duration and two of 10
weeks duration with participants from Engineering College Teachers, DRDO and
Indian Army, Feb.-March 83, Jan.-April 84 and May-July 84

HUMANITIES AND SOCIAL SCIENCES

Departmental Seminars

The following speakers presented seminars in the Department during 1983-84: Dr. P.N. Rastogi, Dr. P.P. Sharma, Dr. T.V.S.R. Rao, Dr. R. Prasad, Dr. L. Krishnan, Dr. B.N. Patriaik, Dr. V.K. Jairath, Dr. Om Prakash Dr. Binayak Rath, Ms. Leena Chatterjee
(Department of Humanities & Social Sciences, I.I.T. Kanpur)

Dr. B.V. Ranga Rao (Dept. of Science Policy) JNU, Delhi Dr.
 S.P. Rhela, Jamia Millia University, Delhi
 Dr. Anima Sen (Psychology) Delhi University, Delhi Dr.
 P.C. Saxena (Sociology) IIPS, Bombay
 Dr. U.R. Anantha Murthy, Dept. of Eng., Mysore University
 Dr. J.B.P. Sinha (Psychology), ANS. Institute of Social Science, Patna Ms.
 Jean M. Aitchison (Linguistics), London School of Economics, U.K. Dr. N.N.
 Srivasta", (Economics) Lucknow Cnin~ .•. -Sitr, Lucknow
 Dr. X..S. Dr. "Jr.:op"~ ~:u. '-=~:~r. S~

Conference Seminars

(A) Attended by Faculty outside India.

1. Regional conference of IACCP in Kualalumpur presented "Managers Presentation of Self in Selection Interview: A comparative study of hired and nonhired managers"
 Usha Kumar, Abha Verma, S. Singh, Leena Chatterjee
2. Accepted invitation of British Psychological Society, Occupational SeCtion to give talks in U.K. (London), University of Warwick) December, 1983
 Usha Kumar
3. Gave a invited lecture at Rene' Descartes University, Paris, Dec. 1983 .
 Usha Kumar
4. Social Integration of East Indians in Trinidad (WI) at the International Anthropological . and Ethnological Sciences, Vancouver, Canada, August 1983
 K.N. Sharma

I,B) Attended by Faculty elsewhere in India

I<~nglish

1. Delivered lectures on "Indian literature in Eighties" at Gurukul Kangri University, Hardwar, April, 1983
 P.P. Sharma
2. Chaired a session at All India English Teachers' Comerence at Trivpndrum, December, 1983
 P.P. Sharma
3. Chaired a session at the 18th Annual Conference of Indian Association for American Studies at Gurukul Kangri University, Hardwar, April, 1934
 • P.P. 'Sharma
4. National Seminar on Protest Literature, Mysore, July, 1983 S.K.
 Aithal

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5. Annual Conference of Indian Association for American Studies, Hardwar, March-April, 1984
S.K. Aithal
 6. Organised the Seminar-The Impact of Buddha on World Literature, IIT Kanpur, October, 1983 and also presented the paper, "The Impact of Buddha on World Literature"
S.K. Aithal
 7. All India Symposium on "The Role and Significance of literature in Foreign Language Teaching". Marathwada University, Dec., 1983, paper presented "The Place of Literature in Foreign Language Teaching"
B.N. Patnaik
 8. National Seminar-cum-Workshop on code choice and code switching in a multi-lingual situation", Central Institute of Indian Language, Mysore, 1984. Paper presented: Code Switching and Language Change: Are they Related?
B.N. Patnaik
 9. 13th All India Conference of Dravidian Linguistics, Tamil University, Nov. 1983, paper presented: "The link language Question Again: Search for an Alternative in language planning and language Education in India"
B.N. Patnaik
 10. "The Buddha and Oriya Literature". Paper presented at the National Seminar on the Impact of Buddha on World Literature, IIT-K, Oct. 1983
B.N. Patnaik

Economics

1. U.G.C. Summer School in Applied Econometrics at Osmania University, Hyderabad, May 1983
T.V.S.R Rao
2. U.G.C. workshop for re-drafting of M.A. Syllabus at Osmania University, Hyderabad, Feb. 1984
T.V.S.R. Rao
3. 67th All India Economic Conference of the Indian Economic Association, Bangalore, Dec. 1983
R.R. Barthwal
4. 8th Indian Social Science Congress, Hyderabad, July 1983. Paper presented, Strategies of Economic Development: The Lop-Sided Rural Development Policy in India
B. Rath
5. Attended the ISTE Winter School on Integrated Rural Development, Mysore University, NOV.-Dec. 1983
B. Rath

6. Presented a paper at National Seminar on Rural Development Strategies and Production Opportunities for Weaker Sections, Bhubaneswar, Dec .. 1983.
"Development programmes for the Upliftment of the weaker sections:
Case Studies of three villages in U.P."
B. Rath
7. 66th All India Economic Conference Bangalore, Dec. 1983, paper presented
"Motivations and Attitudes Towards Savings in Rural Households of Eastern U.P."
B. Rath

Philosophy

1. Delivered 15 lectures on "Philosophy and Language at Magadh University, Bodh-Gaya, as D.G.C. Visiting fellow, March 1984
R. Prasad

Psychology

1. Seminar on the "Management of R&D: A Practical Approach", Indian Institution of Production Engineers (Western Region) Bombay, April 1983. Paper Presented:
"Human factors related to technology transfer Problems and situations"
N.K. Sharma
2. National Seminar on PSYCHOlinguistics (D.G.C.) Dept. of Linguistics; University of Delhi, March, 1984, paper presented: Language Organization and bilingualism"
N.K. Sharma
3. Gave a seminar in the Dept. of Physics, IIT-Kanpur on "Spatial Models, Psychophysics and Internal Representation", Sept. 1983
N.K. Sharma

Sociology

1. 6th U.P. Sociological Conference, Garhwal University, Dehradun, Oct. 1983
R. Pandey
2. Seminar on National Integration, Kumaon University, Nainital, Oct. 1983 R.
Pandey
3. Seminar on Marx,. Asia and Sociology,. Dept. of Sociology, Banaras Hindu University, 1983
R. Pandey

4. Unesco sponsored National Seminar on SO,cial Relations of Scientific and Technical Change at Administrative Staff College of India, Hyderabad, April 1983
Vinod K. Jairath
5. IX Indian Social Science Congress: at Aligarh Muslim University, April 1984
Vinod K. Jairath'
6. Seminar on the Role of Humanities and Social Sciences in IITs, organized by IIT, Madras, January 1984. Presented a paper: Society, Technology and Technological Institutions in India-Some observations
E. Haribabu
7. VII Indian Social Science Congress held at the University of Hyderabad, July 1984. Paper Presented, "Integration of Human Settlements in IndiaTowards a Contextual Model"
E. Haribabu
8. Paper communicated to an International Seminar on Family in the Eighties , organised by the University of Pertanian, Malaysia, Feb. 1984. Paper Presented 'Duality on Urban, Industrial Economy and patterns of Family' in India" ,
E. Haribabu
9. National Seminar on Ten Years of Family Planning Evaluation Studies in India, IIPs, Bombay, March 1984. Paper presented, "Family Planning , Evaluation: Role of Organization Model"
A.K. Sharma

Fine Art

1. ,Painting "Abstraction-B" selected for display at the 27th National Exhibition of April, 1984
RK. Bhatnagar
2. Invited to participate in the Painters' Orchestra Exhibition. Organized at the Academy of Fine Art, Calcutta, May 1983.
Amit Ray

M4 THEMATICS

Organised at the Institute

- 1 UGC Tnstructionai Conference on Differential Analysis,
April 9 - April 28, 1984
• U.B. Tewari

2. UGC Summer School on Biomathematics, May 1-26, 1984
J.N. Kapur
3. NCERT Science Talent Scholars Summer School in Mathematics, June 4-30, 1984
R.S.L. Srivastava
4. Sixteenth Annual Convention of Operations Research Society of India, Dec. 8-10, 1983
S.K. Gupta, A.K. Mittal

B. Faculty invited/Participated elsewhere

1. International Union of Theoretical and Applied Mechanics (IUTAM) Symposium Delft Univ. of Tech., 1983
Dispersion of heavy gases and small particles in the atmosphere
J.B. Shukla
 2. International Conference on Near-rings and Near-Fields
James Madison Univ. Harrisonburg, Virginia, July 31 to Aug. 6, 1983
On radicals in lattice ordered near rings
M.C. Bhandari
 3. XIII International Congress of Mathematicians
Warsaw, Poland, Aug. 1983
 - a. Triangle contractive maps in normed linear spaces D.P.
Kapoor, S.B. Mathur
 - b. Bi-locally convex spaces
M. Gupta
 - c. Generalized sequence space and matrix transformations M.
Gupta
 4. 37th Conference of Indian Society of Agricultural Statistics, Simla, 1983
Experimental designs for correlated observations
G.K. Shukla, P.S. Gill
- ii. Varahamir Memorial National Seminar on Functional Analysis
Vikram Univ., Ujjain, 25th Sept. 1983
- a. The behaviour of Schauder bases and applications P.K.
Kamthan
 - b. Compactness and almost periodicity of multipliers $V; 3$
M. Gupta
 - c. Vector valued sequence spaces
M. Gupta

6. International Symposium on Physiological Fluid Dynamic~. IIT, Madras, Sept. 5-7, 1983
 - a. Lubrication of porous rollers w,ith power law fluid usi.?~ slip ~nd~t~on with reference to synovial joints
P. Sinha, P. Chandra, A. Raj
 - b. Peristalsis in biosystems
J.B. Shukla
 - c. Viscous fl.ow through a permeable tube of varying cross-section with reference to proximal renal tubule
P. Chandra, G. Radhakrishnamachary
 - d. Effects of peripheral consistency of blood flow in ~rteries w~th non-uniform cross section and multiple stenosis
P. Chanqra, J.B. Shukla, S. Mukherjee, R. Sharma, G. Radhakrishnamachary
7. 53rd Annual Session of National Academy of Sciences, India National Institute' of Oceanography, bauna Paula, Goa, Oct. 27-29, 1983 Discrete invariant imbedding for the numerical solution of boundary value problems over infinite intervals
M.K Kadalbaju, KS. Raman
8. International Symposium on Modern Analysis and its Applications, IIT Delhi, New Delhi, Dec. 1983
 - a. On nuclear operators and sequence spaces P.K Kamthan
 - b. A α summability of conjugate Fourier series R.S.L. Srivastava
 - c. y convergence and Schauder decomposition M. Gupta
9. Regional Conference on Statistics and Probability, I.S.1. New Delhi, Dec. 12-14, 1983
Bounds for the mean of second largest order statistics in large samples P.C. Joshi
10. 29th Annual Meeting, Indian Society of Theoretical and Applied Mechanics, Andhra University, Waltair, Dec. 26-29, 1983
 - a. Flexible manufacturing systems (Taylor Memorial Lecture) J.N. Kapur
 - b. Peristaltic transport in a duct with non-uniform cross section and multiple stenoses
J.B. Shukla, G. Radhakrishnamacharya, P. Chandra, S. Mukherjee, R. Sharma
 - c. Numerical solution of singular boundary value problems by invariant imbedding
M.K Kadalbajoo, K.S. Raman

11. 49th Annual Meeting, Indian Mathematical Society, IIT Madras and University of Madras, Dec. 27-29, 1983
 - a. Some challenging applications of mathematics J.N. Kapur
 - b. On the number of simple pairs of bipartite score lists M.R; Sridharan, Meerajuddin
 - c. Symmetric bases and applications P.K. Kamthan
 - d. Eventual properties of solutions of Volterra Integro-Differential Equations Ni.:R.M. Rao, P. Srinivas
 - e) Egg-eating Age-structured predators in interaction with Age-structure);rey M. Saleem
 - f) Unconditional bases and the ordering .M. Gupta
12. Fifth. IACS (International Association for Mathematics and Computers in Simulation) Lehigh Univ., Bethlehem, U.S.A., June 19-22, 1984
 - a) International Symposium on "Computer Methods for Partial Differential Equations"

Invariant imbedding method for the solution of elliptic equations with boundary singularities
M.K. Kadalbajjo
 - b) International Symposium on "Computer Methods for Cauchy Singular Integral Equations"

Numerical solution of Cauchy singular integral equations via initial value methods
M.K. Kadalbaju
13. National Conference on Industrial Tribology Bharat Heavy Elec., Hyd., 19-20, July 1984
 - a) Centrifugal: inertia' effects on radical face seals P. Sinha, T.S. Naiwal
 - b) Effects of consistency variation of power law h,11;>ricants in roller bearing under lightly and heavily loaded conditions
J.B. Shukla, P. Chandra, K.R. Prasad
14. S.B.:P.C. (International: Symposiuin), 'Brazil'

On the convergence of the travel time series representation for a vertically in homogeneous medium
Prem Singh, Martin Tygel

MECHANICAL ENGINEERING

Workshop/Conference/Seminars

1. National workshop on computer aided design (2-12 Dec. 1983) A. Ghosh, S.G. Dhande
2. Third Symposium on Laser and Applications, Dec. 1983 J.S. Goela

3. Winter 'school on Lasers and Computer systems,' Dec. 2-15, 1983 J.S.
Goela
4. An intensive course on Fibre composites: Design, Manufacture and Performance, Dec. 2-15, 1983
Prashant Kumar

Conference/attended

1. Computer-aided Design of Mechanisms, week course, Dec. 1983
S.G. Dhande
2. Wi pro Information Technology Ltd., Bangalore, Nov. 1983 S.G.
Dhande
3. Ninth ASME Design Automation Conference, Dearborn, MI, U.S.A.
Sept. 1983
S.G. Dhande
4. Sixth JFTOMM World Congress on theory of machines and mechanisms, New
Delhi, India, Dec. 1983
S.G. Dhande
5. ASME Fluids Engg. Conf., Houston, Texas, June 1983 V.K.
Garg
6. XIIth National Conference on FMFP, LLT., Delhi, Dec. 1983 V.K.
Garg
7. Course on Finite Element Method, RDSO, Lucknow, May-June 1983 B.P.
Singh
8. Course on Finite Element method, TELCO, Pune, Oct. 1983 B.P.
Singh
9. Chassis, Vibrations, TELCO, Pune; Dec. 1983 V.
Sundararajan
10. XVI International Congress of Refrigeration, (PARIS), Aug.-Sept. 1983
Ma~ohar., Pras(1.d"

METALLURGICAL ENGINEERING

Conferences attended by faculty elsewhere

1. Analytical Electron Microscopy, Defence Metallurgical Research Laboratory,
'Hyderabad, May 30-31 and June 2, 1983
• T,R. Ramachandran

2. "Electron Diffraction" Patterns, Indian Institute of Science, Bangalore, June 8-9, 1983
T.R. Ramachandran
3. Precipitation in 3008 Aluminium Alloy, Indian Institute of Science, Bangalore, June 1-11, 1983 and Banaras Hindu University, July 20, 1983
T.R. Ramachandran
4. Microstructural Aspects of Heat Treatment of Aluminium Alloys, Regional Research Laboratory, Bhopal, Feb. 28, 1984
T.R. Ramachandran
5. Electron Optical Studies on High Strength Aluminium Alloys and Zirconium in Aluminium Alloys by T.R. Ramachandran and C. Suryanarayana in the conference 'on High Strength Aluminium Alloys for Defence and Industry, Research and Development Establishment (Engre), Pune, Feb. 24-25, 1984
6. Electron Optical Studies on Rapidly Solidified 3008 Al and 3008 Al in the third National Workshop on Metallic Glasses held in Indian Institute of Science, Bangalore, March 16-17, 1984
T.R. Ramachandran
7. Transformation Behaviour of Rapidly Quenched 3008 Alloy by S. Das, T.R. Ramachandran and C. Suryanarayana, presented in the XVI Annual Conference of the Electron Microscope Society of India in Nov. 1983
8. Crystallisation of Fe-B Metallic Glasses by Satybrata Das, T.R. Ramachandran, E.C. Subbarao and R. Hasegawa has been presented in the Annual Technical Meeting of the Indian Institute of Metals held in Nov. 1983
9. Chemical Analysis in the Electron Microscope and Defect Studies in the Electron Microscope in the short term course (under QIP) on Application of Electron Microscopes in the University of Roorkee on June 26-27, 1983 T.R. Ramachandran
10. Imaging Structural Defects in Electron Microscopy in the Workshop on Electron Microscopy, Organised by the Department of Metallurgical Engineering, Jadavpur University, Dec. 27, 1983
T.R. Ramachandran
11. Silicon Reduction Mechanism in BF₃ by N.K. Batra in the National Seminar on Extraction of Iron, Bhilai Steel Plant, Feb. 28-29, 1984
12. Teaching of Thermodynamics to Metallurgical Engineers by A.K. Jena, Workshop on teaching of thermodynamics to Engg. students, I.I.T. Kanpur, Nov. 12, 1984
13. On the Stability of Precipitating Phase in Ni-base Super Alloy, by A.K. Jena, Phase stability and phase transformation, BARC, Feb. 6-8, 1984
14. Directionally Solidified Al-Ni and Al-Ni-Cu Alloys, by M.N. Shetty, presented in the conference on high strength Al-Alloys for defence and industry, Research and Development Establishment (Engr.), Pune, Feb. 1984

15. Analysis of Thermally Activated Deformation in a HSLA Steel, presented by M.N. Shetty in International Conference on HSLA Steel, Australia, 1984
16. Modern Concept in Crystal Growth, by MN. Shetty in the Summer Institute; H.G.C., Anna University, Madras, Jan. 1984
17. Design of Ni-base Super Alloy, by A.K. Jena, BHEL and MIDHANI, Hyderabad, June 1983
18. Precipitation in Al-Mn Alloys, by A.K. Jena, DMRL, Hyderabad, June 1983
19. Properties of Al-Ni Composites Powders, by Rajnarayan and R Arghode, Paper Presented at the 3rd International School on Sintered Materials, New Delhi, Dec. 6, 1983
20. Development of Al-Cu-Al₂O₃ particulate, composites, by, A. Bharti, Raj Narayan and M.L. Vaidya, Paper presented at the first National Symposium on Recent Trends in the Development of composite Materials, Pune, Dec. 10-11, 1983
22. Maraging Steels and Dual Phase Steels, by RK. Ray in the ISTE Short Course, B.E. College, Howrah, Dec. 1983
23. Image Contrast in Electron Microscopy, by RK. Ray in U.G.C. Course held in Jadavpur University, Calcutta, Dec. 1983
24. Phase Stability and Phase Transformation, Conference BARK, Bombay, Feb. 6-8, 1984
S.P. Gupta
25. Morphology of Discontinuously Coarsened Cellular Phase in Fe-Zn Alloys 1984
G.T. Parthiban, S.P. Gupta
26. International conference on sintering of materials held at New Delhi in Dec. 1983
RK. Ray, G.S. Upadhyaya
27. International conference (13th Biennial Congress of the IADR), in Melbourne, Feb. 1984
RK. Ray
28. 3rd National Workshop on "Metallic Glasses" held at Bangalore in March 1984
RK. Ray
29. International Conference on Sintered Metal-Ceramic Composites held at New Delhi, Dec. 1983
G.S. Murthy
30. Seminar on "Phase Stability and Phase Transformations" held at BARC, Bombay, on 6-8 February, 1984
A.K. Jena, K.P. Gupta

31. Workshop on "Role of Reducant in sponge iron manufacture; organised by R&D centre, SAIL, Ranchi, Oct. 1983
A. Ghosh
32. 37th Annual Technical Meeting of the IIM, Varnasi, Nov. 1983 A.
Ghosh
33. 3rd National Workshop on "Metallic Glasses" held at Bangalore in March 1984
T.R Ramachandran
34. Conference on High Strength Aluminium Alloys for Defence and Industry, Pune, Feb. 1984
M.N. Shetty, T.R. Ramachandran
35. International Winter School in Sintering of Material, New Delhi, Dec. 1983 K.N. Rai
36. IIM-Annual Meeting, B.H.U. Varanasi, Nov. 15-20, 1983 S.P. Gupta, G.S. Upadhyaya

Summer and Winter School organised at the Institute

1. Intensive Winter School on "Rate Phenomena in Extractive Metallurgy, Sponsored by ISTE, I.I.T. Kanpur, Dec. 5-17, 1983
A. Ghosh

Summer and Winter School attended by faculty elsewhere

1. Invited to give four lectures on "Maraging steels" and "Dual Phase steel" in the ISTE short course on Design and Development of Alloy Steels held at B.E. College, Howrah in Dec. 1983
RK. Ray
2. Invited to give two lectures on "Image Contrast in Electron Microscopy" in a U.G.C. short course on Electron microscopy held at the Jadhavpur University in Calcutta during Dec. 1983
RK. Ray
3. Participated in the short term course titled Rate Phenomena in the Extractive Metallurgy, Dec. 1983, I.I.T. Kanpur
S.P. Mehrotra

Awards, Visits etc .

1. Awarded the: Mont Medal by the Univ. of Calcutta for outstanding thesis on "Structure and properties of a few Fe-Mn-Si base alloys"
R.K. Ray

2. N.R.D.C. Republic day award for rice husk ash based cements (~1983) P.C.

Kapur

IAEC Golden Jubilee Awards for the year 1981 Raj

Narayan

4. IAEC Golden Jubilee Awards for the year 1983.

RK. Dube

PHYSICS

Winter School on Lasers and Laser Systems

The 'Winter School on Lasers and Laser Systems' was organized from Dec 2-10, 1983 by RK. Theraja and Dr. J.S. Goela. The financial assistance was provided by Quality Improvement Programme, Ministry of Education Govt. of India. The participants were, from faculty of Engineering College, Universities, defence organizations, and from Industries. The basic aim of the course was to give insight to the working of various laser systems, technical aspects, and uses of laser systems. There were fifteen speakers, two of them, from outside IIT/K and seven from the Physics Department IIT/K who gave lectures in the school. Visits to various research laboratories and demonstration of various lasers developed at IIT-K were appreciated by the participants.

2. Indo-US Workshop on 'Lasers and Applications' was inaugurated by Prof. S. Varadarajan, Chairman, DST, GOI, New Delhi on December 16, 1984, with a view to consolidate the bilateral ongoing research programmes and find areas for new collaboration in the field:

About 28 invited papers in various fields of laser and its application and 91 contributed papers were presented in the symposium. There were, 12 US Scientists, 6 French Scientists and 4 Scientists from FRG and 6 from India gave the invited talks. About 250 participants took active part in the symposium. Six presentations were made by the instrument dealers. An exhibition of instruments and other related materials was also organised. The proceedings of the symposium have been published in the form of a book 'Lasers and Applications' Edited by Dr. H.D. Bist and Dr. J.S. Goela.

3. Symposium on 'Lasers and Application' (Dec. 16-21, 1983) was inaugurated by Prof. N.G.K. Menon, Member Planning Commission, GOI, New Delhi.

4. International Workshop on Hyperfine Interactions. Jan 16-25, 1984

H.E. Harry G. Barnes Jr., US Ambassador to India inaugurated the Workshop and H.E. Prof. A.R. Kidwai, Governor of Bihar presided over the function. About 50 well known scientists (18 from USA, 15 from West Germany, 4 from France and remaining from other countries such as Belgium, Holland, UK, Poland, Czechoslovakia and Latin American Countries) and about 150 scientists from our country

participated in the 10-day workshop. Conference proceedings will be published by Hyperfine Interactions Journal both as a Journal edition and also as a separate Book.

Workshops, Summer and Winter Schools, Conferences attended by Faculty Members

1. Dr. A.K. Majumdar participated in Indo-Soviet Conference on Low Temperature Physics, Bangalore, January 1984.
2. Dr. A. Mookerjee participated in the workshop on condensed Matter physics, ICTP Trieste, Italy June-July 1984, and gave two lectures: (a) Augmented space method in disordered systems (b) spin glass transition as a glass transition.
3. Dr. D.C. Khan participated in the 29th Annual Magnetism and Magnetic Materials Conference (8-11 Nov. 1983), Pittsburgh, U.S.A
4. Dr. M. Yussouff participated in the Conference on 'Computer Simulation' of Quantum Systems' (ICTP, Trieste-Italy) July 1983.
5. Dr. Vijay Singh participated in the Workshop 'Non Perturbative Approach Workshop organised by TIFR, May 1983.
6. Dr. Gyan Mohan participated in 'Indo-US Cooperative studies on Monsoon', Sept 23-25, 1983 Washington D.C., U.S.A.
7. Dr. R. Ramachandran participated in the Summer Research Workshop of ICTP, Trieste, Italy and gave seminar talks on Spin Structure in QCD. (June 10-July 19, 1983).
8. Dr. R. Ramachandran was an invited participant in the Int'l Europhysics Conference on High Energy Physics at Brighton, UK (July 20-27, 1983).
9. Dr. Y.R. Waghmare and Dr. S.K. Sharma participated in the 'Winter College on Fundamental Physics'(Jan 22-March 31, 1984) ICTP, Italy.
10. Prof. H.D. Bist got the travel award from National Science Foundation, USA in connection with his collaborative research on "High Resolution Infrared and Laser Raman Spectra and Conformational Studies with Prof. J.R. Durig at Univ. of South Carolina, Columbia, USA. He participated in the Molecular Structure Symposium, at Columbia Ohio. He presented a paper and chaired a session in that symposium. He also gave seminar talks on Raman spectroscopy. Phase transitions; Commensurate-Incommensurate Phase transitions; and Laser applications at; Physics Dept. Univ. of Michigan, East Lansing; Chemistry Dept. USC, Columbia; Chemistry Dept. UCLA, Los Angeles; and Mech. Engg. Brown Univ. Rhode Island" respectively. He also had discussions on Lasers and applications at MIT in Physics, Chemistry and Electrical Engineering Departments. Prof. Bist also gave a seminar talk in Chemistry Dept. UT/Kanpur on Raman Spectroscopy and Phase Transitions.

'INDUSTRIAL AND MANAGEMENT ENGINEERING PROGRAMME

(a) Organised at the Institute:

1. Sixteenth Annual Convention of Operational Research Society of India, Dec. 8-10, 1983,

J.L. Batra, A.K. Mittal, S. Sadagopan, A.P. Sinha, R.K. Ahuja

(b) Attended by the Faculty elsewhere:

1. Computer Society of India, March 1984, Hyderabad S.

Sadagopan'

2. Railway Staff College, Feb. 1984, Invited lecture on Railway Engineering S.

Sad,agopan

,Summer and Winter Schools organised or participated

1. Visiting Scientist, Department of Materials Science & Engg., Cornell University, Ithaca, N.Y., USA

,D.C. Agrawal

2. 3rd International School on Sintered Materials, New Delhi, 6-9 Dec., 1983 D.C.

Agrawal

3. Delivered a series of three lectures on "Solid Electrolytes and High Energy Density, heavy duty Batteries" in a Summer School on "Ceramic Materials for Energy Conversion" organised by IIT Kharagpur, June 2-16, 1984

J. Kumar

4. Lectures at Winter School on "Lasers and Application", IIT/K, Dec. 1983 K.V.

Rao

5. Participated in Workshop on "Hyperfine interactions," Jan. 16-23, 1984, IIT Kanpur

K.V. Rao, S. Gupta, K.P. Gupta, D. Bahadur

Conference attended in India & abroad

1. Attended the National Seminar on Phase Stability and Phase Transformations at RARC, Bombay, Feb. 6-8, 1984

K.P. Gupta

2. Attended Symposium on Amorphous Materials at DAE, Oct. 1983 D.C.

Agrawal

3. Attended Workshop on Lasers and Applications at IIT Kanpur' from Dec. 16-21, 1983 •

K.V. Rao

Papers presented in National and International Conferences

1. Stress' "Relaxation' of Ifon-'Boron-SiliCon metallic Glasses,
DAE Symposium on Amorphous Materials, Oct. 5-7, 1983
R. Sridhar, D.C. Agrawal
2. Effect of Ti~ and CaO addition on Sintering behaviour and Microstructure of .
Zirconia
R. Gopalkrishnan, D.C. Agrawal, D. Chakravorty
3. Electrooptic behaviour of Rochelle Salt, Laser Symposium in Dec. 16-21, 1985 K.
Veerbhadrarao'
4. Modified Microcalorimetric method for attenuation measurement in optical fibres,
Symposium of Optical Society. of India, Feb. 1-4, 1984, Bangalore P.S. Chauhan, K.
Veerabhadrarao, K.S. Gandhi
5. Control System for Optical Fibre Drawing,
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A.C. Joshi, Sanjay Gupta, K.S. Gandhi

Papeprs presented

1. A perspective of the Choices Available for Photo-electric Power System Sixth
IASTED International SYMposium : Energy 1983, San Fransisco, 1983 S. Kar
2. Photovoltaic Cells for Terrestrial Application, Fourth National Conference on
Power Sources, New Delhi, 1983
3. Investigation of Silicon-Oxide Interface using Transparent Gates, Second
International Workshop on the Physics of Semiconductor Devices,
New Delhi, 1983
S. Kar, D. Shankar, S. Verma, K.V. Rao, K.S. Gandhi
4. Electrical Characteristics of Silicon-Tin Oxide and Silicon/Indium Oxide
Heterojunction, Third National Conference on the Physics of Semiconductors and
Devices, Bangalore, 1984
S. Kar, S. Verma, K.V. Rao

Seminars by Visitor's from abroad

1. "Some Recent Results in the Field of High Resolution Electron Microscopy of
Materials"
Prof. S. Amelinckx, Dept. of Physics, University of Antwerp, Mol,
Belgium
2. "Silicon Nitride Ceramics"
Prof. T.Y. Tien, Materials and Metallurgical Engg. Dept.,
University of Michigan, Ann Arbor, Michigan

NUCLEAR ENGINEERING & TECHNOLOGY,

A Method to solve the Monoenergetic Radiative transport equation (Paper presented at V National Symposium on Radiation Physics, Calcutta, 1984)

A. Sengupta

- CAT-Scanning using C¹³ (V National Symposium on Radiation Physics, Calcutta, 1983)

P. Munshi

Plasma Physics Symposium, IISc, Bangalore, Aug. 1983, attended by .

M.S. Kalra

Workshop on Plasma Experiments PPP/PRL, Ahmedabad, December 1983, attended by

M.S. Kalra.

IXth National IARP Conference, Defence Laboratory, Jodhpur, 1984, attended by P. Munshi