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PUBLICATIONS IN 1974-75

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Title	Author	Journal
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Cambered Joukowski airfoil in a nonuniform weak shear flow	A. K. Gupta S. L. Sharma	J. of Aircraft Oct. 1974, 653
Effect of Free Stream Turbulence and Artificial Tripping Devices on Boundary Layer Transition	A. K. Gupta	National Aero. Lab. AE-TM-16-74

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Experimental Studies on interfacial shear Strength in glass fibre reinforced plastics systems	S. Bandyopadhyay P. N. Murthy	Materials Science Engg. Elsevier Publications (To be published)
Optimization of multicell wings for strength and natural frequency requirements	R. Katarya P. N. Murthy	Computers and Structures (To be published)
"On the optimized control of space Vehicles Using Solar Radiation Pressure"	K. Kumar	Presented in VIth International Federation of Astronautical Congress Symposium on Control in Space, Aug., 74
Dynamic Characteristics of Stiffened Rings	V. R. Murthy N. C. Nigam	J. of sound and Vibration, March 1975
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Institutions Networks and Social Change '	K. N. Sharma	Indian Institute' of Advanced Study, Simla, 1975
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The Pragmatic of Kumaunibal A Recurrent	P. P. Sah	Indian Linguistics 35, 4, Dec. 1974
Second Language Teaching in India Stylistics and Literary Evaluation	P. P. Sah	QUEST,. 92, Dec., 1974 Punjab University Research Bulletin, V, 1, 1974
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Reinforcement and attraction: Specifying The Effects of Affective States	R. Singh	Journal of Research in Personality, 1974
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Resource Networks and Change in Indian Social Structure	K. N. Sharma	
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A persuasion Theory of Moral Language	R. Prasad	A chapter in Contemporary Indian Philosophy 2nd Series (p. 155-176 (George Allen & Unwin)
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Title	Author	Journal
Contemporary Political Ideologies and State Policy	S. N. Mahajan	Symposium paper read at the <b>All-India Philosophical Congress</b> held at Allahabad in Dec. 1974 (Also submitted for publication)
Place of Ethics in Philosophy of Sri Aurobindo	S. N. Mahajan	Proceedings of the <b>All-India Conference on Sri Aurobindo</b> at Calcutta, in Dec. 1974
On Violence	R. S. Mishra	<b>Ethics and Social Philosophy, Sectional - Presidential address, All-India Philosophical Congress Allahabad, Dec. 1974</b>
The pragmatics of Kumani bal	P. P. Sah	Proceedings of <b>Indian Science Congress Association</b> , New Delhi, Jan., 1975
Effects of Leadership Style, Personality Characteristics and Method of Leader Selection on Members' and Leader's Behaviour	J. Pandey	<b>Proceedings of Indian Science Congress Association</b> , New Delhi, Jan., 1975
Auditory Information Processing Scheme and O. P. Tayal Class Character of Vowel Sounds		<b>Vth All-India Conference of Linguistics</b> Dec., 1974, New Delhi

Title	Author	Journal
Indian Research in American Literature	R. K. Gupta	USEFI-ASRC Conference on American Literature held in Hyderabad, June, 1975
Determinants of Employment Potential of Selected Manufacturing Industries in Uttar Pradesh	T. V. S. Rao	Read at the Indian Econometric Conference, New Delhi, Jan., 1975
Conducted an experimental group development programme "Personal and Managerial Feedback group" for senior Executives at the Administrative Staff College, Hyderabad	Usha Kumar	A group Development Programme at A.S.C. Hyderabad
Seminar on "Personal and Organizational Communication" given to the participants in the Senior Officers Development, Course at the Institute of Defence Management, Secunderabad	Usha Kumar	Senior officers Development Course at Institute of Defence Management, Secunderabad
Participated in conducting Development of Human Resources Course for managers in tea, oil and ONGC organizations	Usha Kumar	Under the auspices of Assam Productivity Council in Digboi, Assam
Stimulus heterogeneity and interpersonal judgements. Test of an averaging model Social Agents in Children's happiness	R. Singh (with Kanfer) R. Singh	Indian Science Congress Association, 1975, Delhi International Council of Applied Psychologists, 1975, Delhi Sociology Department, University of Udaipur, 1974
Seminar on Non-Group Phenomenon and the Social Structure	K. N. Sharma	Sociology Department, University of Udaipur, 1974

Title	Author	Journal
Seminar on Elite Education and the goal of Equality	K. N. Sharma	At Indian Institute of Advance Study, Simla, in June 1974
Policy and Programmes of Social Science Teaching in Engg. Institutions	K. N. Sharma	Paper presented in ICSSR National Seminar, 1974
Participated in the ICSSR seminar on Urban Development	K. N. Sharma	ICSSR seminar held at Bombay between April 7 and 10, 1975
Sociology of knowledge as the Cybernetic Technique of Conflict Resolution	P. N. Rastogi	Proceedings International Sociological Conference, Toronto, August 1974
Social & Management Cybernetics as the Intellectual Technology of Development	P. N. Rastogi	International Conference on Higher Education & Development, New Delhi, March, 1975
Cybernetic Analysis of the Behaviour of Urban System	P. N. Rastogi	Conference on the Problems of Urban Systems at HM Caucutta, Sept., 1974
Seminar on The Nature & Dynamics of Societal Systems	P. N. Rastogi	Seminar at HAS, Simla Oct., 1974
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The Determinants of Profitability in Indian Textile Industry	R. R. Barthwal	The Indian Econometric Conference, New Delhi, Jan., 1975
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### (i) Research Publications

On Transition from Deterministic to stochastic J. N. Kapur models

Journal of Mathematical Sciences, 6, 55-66 (1971) (Published 1974).

Mathematical models in Biology and Medicine J. N. Kapur

Mathematics Student, 41, 225-242 (1974).

Entire Functions of Systematic Growth

R. S. L. Srivastava

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Some distortion: problems for Univalent spiral functions

R. S. L. Srivastava  
S. K. Bajpai

J our. Math. Sciences (R. S. Verma Memorial Volume), 7, 1-8, 1972 (Published 1974).

<b>Title</b>	<b>Author</b>	<b>Journal</b>
The asymptotic values of an entire function represented by Dirichlet series	R. S. L. Srivastava S. K. Bajpai	Riv. Mat. Univ. (Parma) (2), 12, 137-144, 1971 (Published 1974).
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A mathematical criterion for a stable ~ Government	R. S. L. Srivastava M. B. Banerji	Rivista di Mathematica Univ. Di Parma (Italy) (3), 1, 113117, 1972 (Published 1974). Math. Japonica, Vol. 18, No.3, 265-272, 1973 (Published 1974). Collect Math. 25, No.3, 275-295, 1974.
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Deficient values of meromorphic functions and their derivatives	P. K. Kamthan	

<b>Title</b>	<b>Author</b>	<b>Journal</b>
Injective Near Ring Modules	K. Tewari Vibha Seth	Canad. Math. Bulletin, NO.1, Vol. 17, 137-141, 1974.
Universal stability in Hydromagnetics	R. K. Jain S. V. Sachidananda	J. Phys. Math. Sci. 8, NO.4, 355, Aug. 1974.
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The radius of starlikeness of certain Analytic functions	Prem Singh P. L. Bajpai	Proc. Amer. Math. Soc., 44 (II), 395-402, 1974.
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**(ii) Technical and other Department Reports  
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<b>Title</b>	<b>Author</b>	<b>Journal</b>
Adjacent vertices on a permutohedron	P. Sharma S. K. Gupta	IIT/K Math. Department Technical Report No. 31.
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**(iii) BOOKS**

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Nature of Mathematical Thinking	J. N. Kapur	Frank Brothers Delhi, March 1975.
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J. L. Batra  
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An Introduction to Energy Conversion, Vol. II, Energy Conversion Cycles.	M. Prasad	Wiley Eastern Private Limited, New Delhi.
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<b>Experiencias de Ciencia Dos Materiais</b>	E. C. Subbarao D. Chakravorty M. F. Merriam V. Raghavan L. K. Singhal	Jose Roberts Concalves de Silva, Edgard Blucher Ltd., Sao Paulo, Brazil (in Portugese) 236 pp. (1973).

Title	Author	Journal
Mossbauer Studies in the glass system $N a_2O \cdot B_2O_3 \cdot F e_2O_3$	T. Raman V. K. Nagesh D. Chakravorty G. N. Rao	Journal of Applied Physics, February 1975.
Microstructural Studies of Glass-Metal Composites produced by Ion-exchange and hydrogen treatments	D. Chakravorty A. Shuttleworth P. H. Gaskell	Journal of Materials Science, April, 1975.
Memory Switching in Ion-exchanged Oxide Glasses	D. Chakravorty	Appl. Phys. Lett. (1974), 24, 62
Electrically Conducting Glasses Produced by Ion-exchange and hydrogen treatments	D. Chakravorty	J. Non-Cryst. Solids ~ 1974), 15, 191
Memory Switching in films of Oxide Glasses, containing Bismuth	D. Chakravorty C. S. Murthy	J. Phys. D: Appl. Phys., (1975) 8, 1162
Symposium. on Fluorosis, Hyderabad. Switching Properties of Fluorinated Serpentine	B. K. D. P. Rao D. Chakravorty	
A simple mill matrix for grinding mills	P. C. Kapur V. K. Gupta	Chen. Eng. Sci. 29, 1974, 634.
Estimation of the flotation rate distribution by numerical inversion of the Laplace transform	S. P. Mehrotra P. C. Kapur	Chen. Eng. Sci. 29, 1974, 411.
The effects of aeration rate, particle size and pulp density on the flotation rate distribution	S. P. Mehrotra P. C. Kapur	J. Powder Tech. 9, 1974, 213.

<b>Title</b>	<b>Author</b>	<b>Journal</b>
Optimal design and sythesis of flotation circuits	S. P. Mehrotra P. C. Kapur	Seperation Sci. 9, 1974, 167.
Empirical correlations for the effects of ball size and feed charge weight on the rate of grinding	V. K. Gupta P. C. Kapur	J. Powder Tech. 10, 1974, 217.
The effects of particle size and slurry flow rate on the flotation rate distribution in continuous flotation cell	S. P. Mehrotra P. C. Kapur	IntI. J. Mat. Proc. 2, 1975, 15.
Presented paper on Mathematical Model on L.D. Converter	K. P. Singh P. C. Kapur R. P. Goel	13 Annual Conf. of Canadian Institute of Mining and Metallurgy, held at Toronto Aug. 25-29, 1974.
Mineralogical Studies on Mussoorie phosphorites	A. K. Biswas K. V. G. K. Gokhale T. C. Rao	Himalayan Geology, Vol. IV, pp. 240-246, 1974.
Disodium dodecyl phosphate as a Collector in the calcite-apatite mineral system	D. M. Rao A. K. Biswas S. C. D. Arora V. Seth R. Kumar	Transactions Institute Mining & Metallurgy (U.K.) 84, 820, pp. C56-C58, March 1975.

## PHYSICS

<b>Title</b>	<b>Author</b>	<b>Journal</b>
The decay of $^{147}\text{Nd}$	G. K. Mehta S. N. Chaturvedi N. Nath C. Rangacharyulu	Aust. J. of Phys. 27 869, 1974
An interface for digital recording on incremental magnetic tape	G. K. Mehta B. D. Chaudhary H. N. Mahabala K. M. L. Jha	J.I.T.E. 21 45, 1975
Study of SCISSION point distributions in LRA fission	B. Krishnarajulu G. K. Mehta	Pramana 4 74 1975
Gamma decay of analogue states in $^{52}\text{Cr}$ International Conf. Gamma Transitions	H.R. Prabhakara G. K. Mehta	Nov. 74, Delhi
On the anticorrelation in LRA fission	B. Krishnarajulu G. K. Mehta	Nucl. Phys. and Solid State Phys. Symp. (India) 18B, 1975
Gamma decay in proton capture reactions in $^{48}\text{Ti}$	H.R. Prabhakara G. K. Mehta	Ibid 18B 1975
Elimination of frequency dependence in generating voltmeter	G. K. Mehta	Ibid 18B 1975
Oriented Growth of $\text{BaCl}_2$ phases in single crystals of $\text{NaCl}$ -1 % $\text{BaCl}_2$	A. S. Parasnis K. N. Swamy Rao	International Crystallography Conference, Melbourne, Australia, August 1974

<b>Title</b>	<b>Author</b>	<b>Journal</b>
Relative surface free energies from measurements on thermal etch pits on crystals	A. S. Parasnis	Trans. Ind. Inst. Metals, 27 307 1974
Lecture Demonstrations	A. S. Parasnis	Science Resource Letter, Nov. 1974
Reflection, excitation and fluorescence spectra of thallium-activated CsCl	N. L. Pathak S. C. Sen	Nucl. Phys. and Solid State Phys. Symp. (India) 1974
Absorption and emission spectra of thallium-activated NaCl-B ₂ O ₃ and K ₂ O-KCl-B ₂ O ₃ glasses	N. L. Pathak A. Paul S. C. Sen	J. Materials Sci. 9 1493 1974
Absorption, excitation and fluorescence spectra of lead-activated rubidium chloride single crystals	N. L. Pathak S. C. Sen	Phys. Stat Sol(a) 26 721 1974
Luminescence of thallium-activated caesium chloride	N. L. Pathak S. C. Sen	Indian J. Phys. 13 288 1975
Magnetic susceptibility	A. K. Rastogi R. K. Ray	Nucl. Phys. and Solid State Phys. (India) Symp., Bombay, Dec. 1974

Title	Author	Journal	~ o
Spin relaxation in liquids for dynamically coherent reorientation	B. D. Nageswara Hao P. K. Mishra	Chern. Phys. Letters 27 4 1974	
An NMR study of molecular motions	P. K. Mishra B. D. Nageswara Rao	Nucl. Phys. and Solid State Phys Symp., Bombay, Dec. 1974	
An investigation into the molecular motions in liquid benzene, methoxy benzene by NMR relaxation time (Td and self-diffusion coefficient (D) measurements)	P. K. Mishra B. D. Nageswara Rao	Annual (7th) Meeting of Assn. of MR Spectroscopists, Delhi, Jan 1975	
Effect of neutral currents in $t \sim \sim + e+ + c-$	H. S. Mani Sharat Chandra	Phys. Rev. D10 2849 1974	
A unified model of weak interactions III Su(3)X _u (1)	H. S. Mani V. Gupta	Phys. Rev. D10 1310 1974	
Density matrix approach to Knight shift-use of pseudopotential	A. K. Das M. M. Pant M. M. Pant	J. Phys. Soc. Japan 37 1259 1974 Phys. Stat Sol(6) 67 K131 1975	
Coherent potential and pseudoatoms in a model alloy	M. M. Pant M. P. Das	Phys. Stat Sol(b) 67 K73 1975	
Charge transfer effects III alkali-noble metal alloys			

<b>Title</b>	<b>Author</b>	<b>Journal</b>
High field magnetoresistance of impure semi-metals	M. Yussouff	Z. Physik 267 41 1974
Electronic structures of beryllium and titanium by Green's function method	M. Yussouff	Nuovo Ciments 19B 149 1974
<b>Technical Reports</b>		
Three dimensional data acquisition system	G. K. Mehta A. B. Bagwan B. Krishnarajulu	Tech. Report VDG/11/75
Modifications in the voltage measurement system of the van de Graff accelerator	C. K. Mehta D.R. Prabhakara A. B. Bagwan	Tech. Report VDG/12/75
Luminescence studies of some alkali and ammonium chlorides and glasses activated by TP+ or Pb ^H	N. L. Pathak S. C. Sen	Tech. Report Phys. 1/75

## SUM'MER SCHOOLS, SHORT/INTENSIVE COURSES, CONFERENCES

Symposia,- Seminars and Colloqu'ia

The following sequential summer school, advanced/intensive courses, seminars and conferences were conducted during the period involving a sizeable number' of participants from a cross section of industries, educational institutions and other organizations in India and abroad:

### AERONAUTICAL ENGINEERING

Flight Laboratory Course for students of IIT Madras, Bombay, Kharagpur, Punjab Engg. College, Chandigarh.

C. V. R. Murthy'

### CHEMICAL ENGINEERING

#### Conferences

2nd All-India Instrument Manufacturers Conference, Hyderabad, January 1975

J. P: Gupta'

Attended a 5-day course on "E"xposure to Industrial Design" held at IITBombay from 9th to 13th June, 1975

J. K. Gehlawat

Environmental Pollution due to Mining, Metallurgical and Chemical Industries December 21-22, 1974 at Dhanbad	A. B. L. Agrawal
26th International Congress of Physiological Sciences, New Delhi, October, 1974	J. P. Gupta
Spent 4 months at the National Autonomous University of Mexico, Mexico City in evaluating a project for the recovery of food flavouring nucleotides from distillary yeast	J. P. Gupta
Meeting of the International CODATA Conference In U.S.S.R. June 1974	A. P. Kudchadker

### **Consultancy**

Larsen and Toubro Ltd., Bombay "Design Properties of Process Liquors"	H. Veeramani
Larsen and Toubro Ltd., Bombay "Computer-aided Design of Multiple Effect Evaporators"	H. Veeramani
D. D. Shah & Co., Bombay	
"Worked on an assignment for Process Design and Expansion Programme for their existing plant for the manufacture of Acetophenone, Phenyl acetamide and Phenyl Acetic Acid	J. K. Gehlawat
Indian Petrochemicals Corp. Ltd., Baroda (High Level Summer Employment)	M. S. Rao

### **National & International Committees**

Member, National Committee for Data on ..science and Technology (CODATA)	A. P. Kudchadker
Member, International Advisory Board of Encyclopedia of Chemical Processing and Design, U.S.A.	A. P. Kudchadker

Any other

Shalimar Gold Medal for the best  
Paper "Design Properties of Black Liquors and  
Simulation of Long Tube Vertical Evaporators"  
at the Annual Conference of Indian Pulp and  
Paper Technical Association in December,  
1974 at New Delhi

H. Veeramani

Associate Editor: Medical & Life Sciences J. P. Gupta Engineering

## CIVIL ENGINEERING

### Seminars

1. Seminar on Curriculum Development  
Mechanics of Solids Y. C. Das
2. Seminar on Curriculum Development Earth  
Sciences B. C. Ramahashay
3. Design and Production of industrial  
Structures, ISTE M. P. Kapoor
4. Summer School, M. N. R. Engg. College,  
Allahabad V. Lukshminarayana  
(Coordinator)
5. Selected Topics in Water Resources Systems  
Design, Q.I.P Course K. Subramanya  
V. Lukshminarayana
6. Exploration and Development of Ground  
Water Resources, Q.I.P. Course K. V. G. K. Gokhale V.  
Lukshminarayana
7. Modern trends in Hydrologic analysis and  
Design, Q.I.P. Course V. Lukshminarayana S.  
Ramaseshan
8. Optimization Methods in Sanitary and  
Environmental Engineering, ISTE-Winter  
School S. D. Bokil  
A. V. S. P. Rao
- 9 Modern foundation methods, Q.I.P.  
Course M. R. Madhav
10. Remote sensing for Natural resources and  
Environmental studies, Q.I.P. Course B. C. Ramahashay  
Yudhbir
11. Hydraulic Transients, Q.I.P. Course S. Surya Rao
12. Seminar on Transportation Problems on  
Indian Railways S. P. Palaniswamy  
(Coordinator)

## CHEMISTRY

- C. N. R. Rao  
Commonwealth Visiting Professor,  
University of Oxford and Fellow, St.  
Catherine's College, Oxford.  
National Lecture in Chemistry, Lectured at  
various Indian Universities.  
Chemical Congress, U.K.  
ICSU (UNESCO) committee on Teaching, Paris.
- P. T. Narasimhan  
Third International Symposium on Nuclear  
Quadrupole Resonance Spectroscopy, Florida,  
U.S.A Participated as Member of the  
International Organizing Committee of NQR  
Symposia.  
Participated in the special seminar on "Recent  
Developments' in NQR Research" at Department  
of Chemistry, McGill University, Canada.  
Presidential address to Chemistry Section, 62nd  
Session of Indian Science Congress Association.  
Visiting Professor, Institute for Organise Chemie  
Universitat Munchen, W. Germany.  
Special lecture at the University of  
Munchen, W. Germany.
- M. V. George  
Invited talk at Workshop on "Approaches and  
Methods in Groundwater Hydrology" held at  
National Geophysical Research Institute,  
Hyderabad.
- P. S. Goel  
Convener, Symposium on "Structure and  
Reactivity in Inorganic Chemistry,"  
62nd Indian Science Congress, Delhi.
- A Chakravorty  
Lectured, LAC.S. Calcutta; 62nd Indian Science  
Congress; BARC (singlet oxygen symposium).
- S. Ranganathan

- J. C. Ahluwalia      Attended, Calorimetry Conference, Seattle, Washington, U.S.A.
- Symposium on "Chemistry and Physics of Aqueous Gas Solutions," Toronto, Canada.
- D. Balasubramanian Visiting Fellow (DAAD),  
                             Max-Planck Institute fur Biochemie,  
                             Martimried and the Max-Planck Institut fur  
                             Biophysikalische Chemie, Gottingen, West  
                             Germany.
- Invited talks at the International Physiology  
                             Congress Sabellite Symposium, New Delhi and  
                             Second Indian Photobidogy Symposium,  
                             Nainital.
- Convener, Symposium on "Theoretical and  
                             Experimental Approaches to Biomolecular  
                             Structure and Function," 62nd Indian Science  
                             Congress, New Delhi.
- P. R. Singh            Attended International Symposium on  
                             Nucleophilic Substitution, Pocono, Manor,  
                             Pennsylvania, U.S.A.
- Coordinator, Regional Summer Schools  
                             in Chemistry for Central School Teachers,  
                             Central School, IIT-Kanpur.
- Attended and chaired a session 62nd Indian  
                             Science Congress. Also elected member of  
                             Chemistry Sectional Committee.
- G. Mehta              Attended 9th IUPAC Symposium on the  
                             Chemistry of Natural products, Ottawa,  
                             Canada.
- P. Gupta Bhaya      Invited talk at Symposium on "Approaches  
                                     to Biomolecular Structure and Function," 62nd  
                                     Indian Science Congress, New Delhi.
- V. B. S. Chauhan    Lectured at Regional Summer Schools in  
                             Chemistry for Central School Teachers, Central  
                             School, IIT/Kanpur.

**Co.nferences**

Computer Aided Characterization of PInnar Diode using Fabrication Data, IEEE India Annual Convention, Bangalore, Feb. '75

M. M. Hasan  
S. Venkateswaran

Sy .. tem Design of TDMA Satellite Ccnmunication Systems, National Be:lgalore, Feb. '75

S. M. Shakil  
V. Sinha

Or.. Synchronizing Time-division Multiple access satellite signals, International Symposium on Digital Comm., Allahabad

V. Sinha  
S. M. Shakil

Small Ground terminals in Communication satellite systems, 8th Tech. Convention of the Institution of Electronics and Telecommunication Engineers, India, 19~5

S. M. Shakil V. Sinha

**Seminars/Courses**

Semiconductor Device Technology Intensive course given jointly under E.E. Deptt. & ACES, IIT-Kanpur, December 1974

Semiconductor Device Technology Intensive course given jointly under E.E. Deptt. & ACES, IIT1-Kanpur, December 1974

M. M. Hasan  
(Coordinator)

"Determination of Silicon-Metal Work Function Differences by NOS Capacitance Technique"  
E. E. Deptt., IIT-Kanpur: 13 December 1974

S. Venkateswaran

"Electrical Properties of MOS Devices with Steam Grown Oxides"  
Materials Science, IIT-Kanpur: 21 Feb. 1975

S. Kar

An explanation of certain computations in  
vedic mathematics

Group Rings (3 lectures)

Elements of Basic theory in topological  
vector spaces

Representation of Lie Groups

Orthogonality relations for the end  
problem for transversely isotropic  
cylinders

Sheaf cohomology and the cohomological  
dimension of a space

A Restrictive stability property of linear  
systems

Multipliers and Norm convergence of  
Fourier series

Biomechanics of joints

- Jacobi's classical identity and its  
generalization

Proximities, contiguities

S. P. Mohanty

I. Sinha  
Michigan State Univ.  
USA

P. K. Kamthan

K. C. Gupta  
Univ. of Washington,  
Seattle, USA

R. R. Archer  
Univ. of Massachu-  
setts, USA

S. D. Tripathi  
Allahabad Univ.

M. Ramamohana Rao

U. B. Tewari

J. B. Shukla  
Dayanand Verma  
TIFR, Bombay

W. J. Thron Visiting  
Prof., Punjab Univ.,  
Chandigarh

### **Mathematical Sciences Programme**

Mathematical Bio Economics (6 lectures)

Lubrication of human joints (6 lectures)

Abstract ideas and mathematical models

Circle theorem in stability theory

Aspects of blood flow

Branching effects in arterial -flow (3  
lectures)

J. N. Kapur

J. B. Shukla  
Arvind Bannerji  
Delhi Univ.

M. Bannerji  
Himanchal Pradesh  
Univ., Simla

J. B. Shukla

B. R. P. Rao

Graph'theory and its applications (6 lectures)	S. P. Mohanty
Combinatorial mathematics	R. C. Srivastava

Papers presented and Lectures given at various Scientific -Conferences

Seminar on Hindu Mathematics, Indian National Science Conferences Academy 18.8.74.	J. N. Kapur
National Seminar on Education and the the people, IIT/Kanpur 14.9.75.	J. N. Kapur
U.L P. Mathematics Teachers Conference, University of Meerut 10.11.74.	J. N. Kapur
Re~earch in Undergraduate Mathematics Operations Research Society of India, Seventh Annual Convention, IIT Kanpur 12.12.74.	J. N. Kapur
Moderator at Symposium on "Relevance of Operation Research to India" Conference on Computer Assisted Instructions, Computer Centre, IIT Kanpur 7.10.74.	J. N. Kapur
Programmed learning and computer assisted education with special reference to mathematics education in India	
Convention on Applied Mathematics, Calcutta University, 1.2.75.	J. N. Kapur
Eastern Region Conference on Mathematics Education, Jadavpur 3.2.75.	J. N. Kapur
Seminar in Problems of Higher Education, Indian Institute of Management, Calcutta on 21.3.75 and 22.3.75.	J. N. Kapur
Paper in Problems in Higher Education	
Seminar on Higher Education and Deve!opment, Association of Indian Universi ties 2:3.3.75, 24.3.75.	J. N. Kapur
Paper on Higher Education and National Development	

International Congress of Mathematicians, Vancouver, Canada Aug.21-29th, 1974.	P. K. Kamthan Manjul Gupta S. K. Ray
Schauder decomposition in dual and bidual spaces	
Indian Mathematical Society Annual Conference IIT, Bombay (Dec. 27-29, 1974)	M. Rama Mohana Rao
(i) Functional Differential equations of Volterra type	V. Sree Hari Rao
(ii) On the representation of an odd number as the sum of three primes	M. C. Bhandari
(iii) On lattice ordered near	M. C. Bhandari A. Radhakrishna
(iv) A note on locally nilpotent near ring	M. C. Bhandari P. K. Saxena
(v) On univalent and $\alpha$ spiral functions	T. J. S. Mehrotra T. J. S. Mehrotra S. K. Bajpai
(vi) On radius of $p$ -valent starlike and $p$ -valent convexity	
Orissa Mathematical Society Annual Conference Cuttack (22nd to 24 Dec. 1974).	
(i) Multipliers and norm convergence of Fourier Series	U. B. Tewari
(ii) On a theorem of Detannay and related results	S. P. Mohanty
Seminar, on Transportation problems in Indian Railways, IIT, Kanpur (April 19, 1975).	
Operations Research in Railway Transportation	J. N. Kapur
Workshops on School Mathematics, St. Patrika School, Lucknow and St. Aloysious School, Kanpur.	J. N. Kapur B. L. Bhatia
First National Conference in Industrial Tribology, IIT, Madras (Dec. 18-21, 1974).	
Generalised Reynold equation in the slip conditions	J. B. Shukla S. Kumar P. Chandra

Central Region Conference on Mathematics  
Education and Research Sponsored by U.G.C. IIT,  
Kanpur (March 6-8, 1975).

Nine different working groups gave recommendations on Undergraduate Curriculum Postgraduate Curriculum, Post M.Sc. Course Curriculum, Research in Mathematics and Centres of Mathematics, Mathematics for users, Applications of Mathematics and Centres for Mathematics, Examination and Evaluation, Teacher Training, Academic Restructuring.

#### Summer Schools

O.R. in Engg. Design, IIT, Kanpur  
(March 26 to April 10, 1975).

- |                                               |                    |
|-----------------------------------------------|--------------------|
| (i) Optimisation (10 lectures)                | S. K. Gupta (Mrs.) |
| (ii) Mathematical Programming<br>(4 lectures) | P. Sharma          |

Planning and Control of Production  
Systems, IIT, Kanpur (April 26 to May 20,  
1975).

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|-----------------------------------------------------------------------------------------|---------------------------------|
| (i) Queuing, Inventory (10 lectures): (ii)<br>Mathematical Programming<br>(10 lectures) | S. K. Gupta (Mrs.)<br>P. Sharma |
| (iii) Decision Theory (3 lectures)                                                      | J. D. Borwankar                 |

Environmental Engg., IIT Kanpur (May  
1975)

- |                                        |                                 |
|----------------------------------------|---------------------------------|
| Mathematical Programming (5 lectures)  |                                 |
| Mathematical Bioeconomics (3 lectures) | (Mrs.) P. Sharma J.<br>N. Kapur |

#### MECHANICAL ENGINEERING

Summer course for Teachers under Q.I.P. B. D. Agarwal on composite  
materials, 30th June to  
12th July 1975.

Orientation course on Project Planning. and Control for senior officers of D.P. Govt., March 20-22, 1975.	J. L. Batra
-----------------------------------------------------------------------------------------------------------------	-------------

Advanced Summer School on Planning and Control of Production Systems, April 26--May 20, 1975.	J. L. Batra
-----------------------------------------------------------------------------------------------------	-------------

Participated in the Asian Prod"uctivity Organisations Programme on Low Cost Automation held at Philippines and Japan from 9th June to 18th July, 1975.	J. L. Batra
On deputation to attend the 5th National Conference on Fluid Mechanics and Fluid Power held at V JTI, Bombay in Dec. 1974.	V. K. Garg
Q.I.P. Advanced Winter School of "Special topics in Manufacturing" for Engineering College teachers, Dec. 16-28, 1974.	G. K. Lal
Low cycle fatigue of GFRP materials and determination of stress concentration factors in composite materials presented at the Structural Mechanics Symposium at BARC, Bombay in March 1975.	R. Prabhakaran
Some design considerations for fatigue of GFRP materials in Engineering Design Symposium at GSIT, Indore.	R. Prabhakaran
Two new model materials for Photoelasticity and the interpretation of isoclinics in photo-orthotropic-elasticity presented at the Society for Experimental Stress Analysis, spring meeting in Chicago, in May 1975.	R. Prabhakaran
Mechanical error analysis of spherical function generating mechanisms-A probabilistic approach presented in ASME Mechanisms Conference, paper No. 74DET-15, Oct. 1974.	S. S. Rao
A finite element approach to the aeroelastic analysis of lifting surfacetype structures, presented in the International Conference on Discrete methods in Engineering, Proceedings Vol. p. 512-525, Milan, Italy, Sept. 1974.	S. S. Rao
Advanced LS.T.E. Winter School on Reliability considerations of Engineering Systems, Dec. 1974.	S. S. Rao
<b>108</b>	T.Chakraborty

Short term Q.I.P. course on Finite Element Methods, March 1975. S. S. Rae

Management Seminar on effective maintenance at Tata Management and Training Centre at Poona, Nov. 1974. B. Sahay

## **METALLURGICAL ENGINEERING**

### **Short Intensive Courses**

Short course on Processing of Ceramic Materials 30.9-5.10'74 P. C. Kapur

Intensive course on "Composite Materials" M. N. Shetty December 74, Organized by IIT Kanpur- Delivered 15 Lectures

### **Conferences Seminars**

On "Materials for Nuclear Power Stations"- Hyderabad Organized by International Nickel (India) and B.H.E.L. M. N. Shetty

A paper presented on -Feed Forward Control Model of L.D. Converters at 13th Annual Conference at Canadian Metallurgist/Canadian Inst. of Mining and Metallurgy held at Toronto between Aug. 25-29, 1974. K. P. Singh P. C. Kapur

Participated at the 10th Commonwealth Congress on Mining & Metallurgy held at Ottawa & other important Canadian Industrial Cities between Sept. 2-28, 1974 K. P. Singh

Gave Seminar on Strain Energy Model on Solid-Solubility limit of Hydrogen in Zirconium, Hydrogen and Zirconium-Niobium-Hydrogen System at the following Universities in the U.S.A. and Canada K. P. Singh

1. Deptt. of Metallurgy, Univ. of Windsor, Windsor, Canada
2. Deptt. of Materials Engineering, University of California, Berkeley, California

3. University *of* Michigan, AnnArbot,  
Mich.
4. Steven Institute of Technology,  
Hoboken, New Jersey

## PHYSICS

National Science Talent Scholars Summer K. K. Sharma School  
(UG and PG), May-June 1975.