

II. PUBLICATIONS TN 1979-80

The following publications were done by different departments in the Institute during the year 1979-80.

AERONAUTICAL ENGINEERING

TITLE

AUTHOR

JOURNAL

Axisymmetric Subcritical Flow Past Slender Bodies by an Integral Equation Method.

N. L. Arora
J.F. Agarwal

Proceedings of the Seventh Canadian Congress of Applied Mechanics, May, 1979.

Axisymmetric Transonic Flow Past Slender Bodies by an integral Equation Method

N. L. Arora
J.P. Agarwal

Practical Journal of Science and Technology, 1980, pp. 606-608 -

Boundary Layer Transition in the Wake of a 3-D Roughness Element

J. K. Gupta

Proceedings of the Seventh Canadian Congress of Applied Mechanics, May-June, 1979, p. 625-6,

Flow Characteristics of a Reverse Flow Sensing Probe

J. K. Gupta
P. S. Ravi Varma

Journal of Physics E: Scientific Instrumentation, 1979.

Some Observations in the Wake of a Small Vertical Cylinder Attached to a Flat Plate

P. S. Ravi Varma, G. Lakshminarayana

The Journal of Fluids, Jan. 1980

Heat Transfer and Homogeneous Vector Field Injection Cooling of a Turbine Vane

D.N. Gupta
C.M. Rodkiewicz

Transactions of the Canadian Society of Mechanical Engineers, 5, 1979, pp. 1-10

Properties of a Turbine Vane Coated with Electrochromic Coating

R.N. Gupta,
C.M. Rodkiewicz

Proceedings of the Seventh Canadian Congress of Applied Mechanics, May-June 1979, pp. 583-4.

- Theoretical approach for selection of load factors based on reliability P. Dayaratnam S. Sengupta Journal of Bridge and Structural Engg., 9, Sept. 1979.
- Optimization of prestressed concrete beams with reliability constraints P.ChandraSekhar P.Dayaratnam Journ. of Structural Engg. 7,1, 1979.
- Civil Engineering Practices in 18th and 19th centuries in India P.Dayaratnam Seminar on 18th and 19th Century Science and Technology, New Delhi.
- Analytical method of predicting ground excitation from known response of structures. M.P. Kapoor Journal of Structural Engg. India, 6,4, Jan. 1979, 186-199
- Optimal design of a tee beam floor a limit state approach A.S.R. Sai A.V. Subramanya Proc. 24th Ind. Soc. Theoretical and Applied Mechanics Rourkela, 1980.
- Ashment Cement A.S.R. Sai F.C. Kapur Special Report IIT Kanpur, 1979.
- Study of short oblique jets K. Subramanya canadian Conf. Appl. Mechanics Quebec, Ma., -June 1979.
- Water abstracts (vol.II) (a volume containing thesis abstracts in the area of water resources) K.Subramanya (Editor) Indian National Committee for IHP (CSIR) New Delhi.
- Hydraulic design of ogee spillways and chute spillways S.R.Singamsetti Water World, Vol.II, 2, Oct-Dec. '79, 37-39.
- Design considerations for a differential surge tank S.R.Singamsetti P.N. Singh (1) Water Power and Dam Construction, Dec. 1979,48-50 (2) Water Power and Dam Construction Jan.1980,44-48

Prediction of path dependent deformation of clays	Yudhbir K.K. Jain	Proc. 6th S.E. Asian Soil Engg. Conf., Taipei Taiwan, May 80.
Development of electrical penetrometer for site investigations	U. Dayal A. Suppiak	Proc. International Symp. on Insitu Testing of soils and Rocks and Performance of Structures, Roorkee, Dec. 1979.
Techniques for offshore insitu geotechnical tests	U. Dayal	Indian Geotechnical Journal, 9,4,1979.
Free fall penetrometer: A performance evaluation	U. Dayal	Journal of Applied Ocean Research, 2,1, 1980.
Discussion on uplift testing of model drilled shaft	U. Dayal	Journ. Geotech. Divn. ASCE, 106, GT5, 1980.
Terrain evaluation and geotechnical studies for 800 mile-long transmission line route	U. Dayal	Proc. 6th S.E. Asian Conf. on Soil Engg. Taipei, Taiwan.
Uniqueness of plane strain deformation of rigid plastic solids under lateral pressure	Ashwini Kumar	Journ. Applied Mechanics, Dec. 1979.
Symmetric and asymmetric bifurcations in thick-walled elastic cylinders	Ashwini Kumar	Proc. National Symp. on Large Deformations, IIT Delhi, Dec. 1979.
Uniqueness and stability of thin-walled cylinders under internal pressure, tension and torque	Ashwini Kumar	Proc. Conference on Pressure Vessels Technology, Pune, Feb. 1980.
Analysis of free standing T.V. Tower	P. Dayaratnam	International Conf. on Computer Application in Civil Engg. Roorkee, Oct. 1979

- Probabilistic analysis of stability of rock slopes
M.R. Madhav
K.S. Ramakrishna
International Symposium on Landslides, New Delhi, April 1980.
- Design parameters for shallow foundations
Yudhbir
N.K. Srivastava
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Yudhbir
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- Geological and geophysical investigations in soils for engineering projects
Yudhbir
International Symposium on Insitu Testing of Soils and Rocks and Performance of structures, Roorkee 79.
- Geotechnical Aspects of land reclamation for agriculture in areas of Kerala
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- Interpretation of Sediment dispersion along Arabian Sea coast from landsat imageries
B.C. Raymahashay
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Proc. International Symp. on Resources Engg. and Tech. IIT Bombay 1979.
- Landslides in the Himalayas
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- Compaction characteristics of clay mineral mixtures
Yudhbir
B.C. Raymahashay
B.K. Sahu
International Conf. on Compaction, Paris, April 1980, 22-24.

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Dynamic response of strip footings on elastic half space	S.P. Dasgupta N.S.V.K. Rao	International Journal of Numerical Methods in Engg., 14, 11, 1978, 1597-1612.
Beam foundation interaction due to impact load	B.B.S. Prasad N.S.V.K. Rao	Indian Geotechnical Journal, 9,3, July-Sept 1979, 237-278.
Response of beams on elastic foundations to dynamic loading	B.B.S. Prasad N.S.V.K. Rao	Journal of E.M. Div., Proc. A.S. C.E., 106, 1, Feb. 1980, 179-185.
Dynamic analysis of foundation on weak soils for heavy duty diesel engine installations	N.S.V.K. Rao	Tech. Report 1-80, Dept. of Civil Engg. IIT Kanpur, Feb. 1980.
Analytical solution to the problem of transient drainage through trapezoidal embankments with Darcy and near Darcy flow	M.R. Madhav P. Basak	Journal of Hydrology, 9, 1979, 134-153.
Non-linear programming in saturated slope stability analysis	P.K. Basudhar M.R. Madhav A.J. Valsangkar	Indian Geotechnical Journal, 9, 1979, 212-219.
Optimal lower bounds of passive earth pressure using finite elements and nonlinear programming	P.K. Basudhar M.R. Madhav A.J. Valsangkar	International Journal of numerical and analytical methods in Geomechanics, 3, 1979, 367-381.
The square tube sampler a versatile tool	M.R. Madhav K.S. Ramakrishna	International symposium on In situ Testing of Soils and Rocks, Roorkee Dec. 1979.
Probabilistic analysis of settlement of foundations on rock	M.R. Madhav K.S. Ramakrishna	Conference on structural Foundations on Rock, Sydney, May 1980.

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High Nitrogenous waste treatment by algal-bacterial process	K.R. Nambiar S.D. Bokil	Jour. Publ. Health Divn. Inst. Engineers, (India), Aug. 1980.
Anomalous flux behaviour in initial time stirred protein ultrafiltration through artificially permeable membranes	T. Swaminathan M. Chaudhuri K.K. Dirkar	Journ. Applied Polymer Science, 24, 1979, 1581.
Simulation of water quality in rivers	D.K. Ghosh V. Lakshminarayana D. Ruchandani	Proc. 6th National Convention on Environmental Engg. Calcutta, March, 1980.
Effects of air pollution on human health with particular reference to respiratory diseases	D.K. Ghosh G.D. Agarwal	Proc. 5th International Clean Air Congress, IV/PPA.
Effect of overturning on windrow composting	P.A. Saini C. Venkobachar AVSP Rao	Solid Waste Conf. I.I.T. Kanpur Sept. 1979.

METALLURGICAL ENGINEERING

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A thermodynamic analysis of cobalt-sulfur system	R.C. Sharma Y.A. Chang	Zeit. Metallkunde Vol. 70, 1979, pp. 104-105
Effect of Nickel additions on aging characteristics of Zr- 2.5 pct. Nb alloys	R.C. Sharma and K.P. Singh	Trans. IIM Vol. 32, No. 2 1979, p. 172.
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- Bound pion absorption followed by emission of two nucleons: R.S. Bhalerao and Y.R. Waghmare: Nuclear Phys. A2900, 1367 (1978).
- Magnetization Studies of Fe-Ni-Te Alloys, D.C. Khan and A.K. Majumdar, Physica B, 95, 211 (1978)
- Ferromagnetic Anisotropy of Resistivity in Metaglas, A.K. Nigam and A.K. Majumdar, Physics B, 45 385 (1978)
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- Radiative Transition Rates of Nd^{3+} in LaF_3 : Jagannath and D. Ramachandra Rao, Ind. J. Phys. 52B, 34 (1978).
- Laser Excited Fluorescence and Lifetime Studies in Dy^{3+} LaF_3 A. Sivaram, H. Jagannath, D. Ramachandra Rao and P. Venkateswarlu.

PHYSICS

First order phase transition in Fe-Ni-Te Ternary alloy system; A. Quadeer, D.C. Khan and N. Ram. Ind. J. Pure & App. Phy. 16 76-78. (1978)

Magnetization Studies of Fe-Ni-Te alloys. D.C. Khan and A.K. Majumdar Physics 95/2 211-214 (1978).

Comparative Study of Magnetic Form factor of transition metal ions : S. Kirtane and D.C. Khan, J. App. April (1979).

Electronic Dielectric Constant of II-V Semiconductors : J.K. Sharma and D.C. Khan, Sol. St. Comm. May 1979.

Review of the Book "Liquid Metals" by M. Shimogi (Academic Press, London, New York 1977), D.C. Khan, Tran. Ind. Inst. Metals. 31 4, (1978)

Effect of Anharmonicity of Anderson Grunaisan Parameter, S.P. Srivastava, R.C. Srivastava and S.D. Pandey, J. Phys. and Chem. of Solids (1978)

Localization on a Cayley Tree; A. Mookerjee, Vipin Srivastava, D. Weiere and S.K. Joshi, J. of Quantum Chemistry (1978).

A mean field, effective medium theory of random alloys: I: The Random Ising Model: A. Mookerjee, Pramana 11, 223 (1978).

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Electrical Conductivity of Spin Glass Alloys, A. Mookerjee: Pramana (1979).

Structure and energy platelet-matrix interfaces in NaCl - 1% BaCl₂: A.S. Parasnis, K.N. Swamy Rao, Phil. Mag. 37, 769-776 (1978)

Study of Isobaric Analogue States in ⁵²Cr: H.R. Prabhakara S.N. Chaturvedi and G.K. Mehta, Journal of Phys. G. 4, 1101 (1978).

TITLE	AUTHOR	JOURNAL
The role of Uranus, Neptune and Pluto	R.S.L. Srivastava	Astrological Magazine May-June, Dec. 1979.
The House of diplomacy	R.S.L. Srivastava	Astrological Magazine Jan. 1980.
Books Published		
Ordinary Differential	M. Ramamohan Rao	Equations Theory & Applications (266 pages) (Eastwest Press, N. Delhi).
Engineering Mathematics	R.S.L. Srivastava	Vol. I (Tata McGraw Hill)
Engineering Mathematics	R.S.L. Srivastava	Vol. II (Tata McGraw Hill)

TITLE	AUTHOR	JOURNAL
Numerical solution of a quasilinear parabolic problem	M.K. Kabalbajoo	Proc. Ind. Acad. Sci. (Math. Sci.) Vol. 89, No.1, 67-73, 1980.
General Articles Published		
Optimization in mathematics statistics, economics, operations research science and technology	J.N. Kapur	Ind. Jour. of Math Edu. Sci. Tech., Vol. 10, 441-453, 1979.
Some needs of Indian Education today	J.N. Kapur	Indian Education Vol. 9, No. 12, 16-18, 1980.
An operations research approach to educational planning	J.N. Kapur	Indian Education, Vol. 10, No. 1, 1980.
Attitudes to learning and Research	J.N. Kapur	Kanohaclal Girls College, Meerut, X anni. Vol., Eng. Sec., p. 5-11, 1979.
Mathematical modelling, its philosophy, powers and limitations	J.N. Kapur	Bull. Math. Asso. of India, Vol. 11, p. 69-112, No. 3 & 4, 1979.
D.R. Kaprekar-A life long devotee of Mathematics	S.P. Mohanty	Bull Math. Asso. of India Vol. VIII, No. 1 to 4, 61-73, 1978 (pub. Nav. 1979)
The number of primes is infinite	S.P. Mohanty	Bull. Math. Assoc. of Indian, Vol. XI, No. 1 and 2, 62-68, 1979.
Planets and cataclysm	R.S.L.Srivastva	Astrological Magazine Aug. 1979.

TITLE	AUTHOR	JOURNAL
On convergence of derivatives of Post-widder operators	R.K.S. Rathore O.P. Singh	Ind. Jour. Pure Appl. Math. Vol. 11 (5), 547-561, 1980.
The unsettled problem of M.G. Kein on nonnegative polynomials in J.Systems	R.K.S. Rathore P.N. Agarwal	SIAM Jour. Math. Anal., Vol. 10, No. 5, 1092-1094, 1979.
On the coefficients of functions analytic in the unit disc having fast rates of growth.	G.P. Kapoor K. Gopal	Annali di Matematica (IV), Vol., 121 337-349, 1979.
Decomposition theorems for analytic functions having slow rates of growth in a finite disc.	G.P. Kapoor K. Gopal	Jour. Math. Anal., Appl., Vol. 74, 446-455, 1980.
Tensor Puities, Cyclic, Quasi-projectives and cocyclic copurity	K. Tewari D.P. Choudhary	Communications in Algebra, Vol. 7(15), 1559-1574, 1979.
Right Noetherian rings over their centres	K. Tewari C.L. Wangneo	Communications in Algebra Vol. 7(15), 1573-1598, 1979.
Invariant embedding method for the solution of coupled Burger's equations	M.K. Kadalbajoo	Jour. Math. Anal. & Appl. Vol. 72, No. 1, 1-16, 1979.
Iterative Techniques for nonlinear boundary control problems	M.K. Kabalbajoo	Proc. Inter. Conf. on Optimizing methods in statistics 289-300, Academic Press.
A numerical technique for solving nonlinear elliptic problems	M.K. Kadalbajoo	Ind. Jour. Pure Appl. Math. Vol. 11, No. 1, 20-32, 1980.

TITLE	AUTHOR	JOURNAL
On the Diophantine equation $x^3 + y + 1 - XYZ = 0$	S.P. Mohanty	Math. Stud., Vol. 45, 1979.
Characterization and Enumeration of Hypotraceable graphs	S.P. Mohanty Daljit Rao	Bull. Aust. Math. Soc., Vol. 20, 437-445, 1979.
Shortest strings containing all permutations discrete mathematics	S.P. Mohanty	Discrete Math., Vol. 31, 91-95, 1980.
A class of Diophantine equations A collection of manuscripts related to the Fibonacci sequence	S.P. Mohanty	The Fibonacci Assoc. 18th Anniv. Vol., U.S.A., 186-189, 1980.
Non-Equilibrium theory of atmospheric transport over area and source	Punyatma Singh K.K.Srivastava	Ind. Jour. Eng. Sci. Vol. 17, p.919, 1979.
Exact solution of transient heat transfer between fluid and a porous plate	Punyatma Singh	Pure. Appl. Math. Sci., Vol. 10, p.135, 1979.
Variational solution of heat transfer near a stagnation point flow	Punyatma Singh	Ind. Jour. Pure. Appl. Math., Vol. 10, p. 1092, 1979.
Free convection fluctuating flow on a horizontal magnetized plate	Punyatma Singh R.L. Verma	Acta Phys. Hung., Vol. 46, p. 72, 1979.
Effect of plate temperature oscillations on free convection boundary layer along a vertical plate	Punyatma Singh	Ind. Jour. Eng. Sci., Vol. 18, p. 463, 1980.
Formulation of Gyasmati's principle to heat conduction equation	Punyatma Singh	Thermo Fluid Dynamics, Vol. 13, p. 39, 1980.

TITLE	AUTHOR	JOURNAL
A close of univalent functions	O.P. Juneja M.L. Mogra	Bull. Des. Sci. Math. Vo. 3, p. 435-447, 1979.
Interpolation and approximation of Entire functions	O.P. Juneja S.R.H. Rizvi	Proc. Roy. Irish Acad., Vol. 79A, No. 5, 37-47, 1979.
On certain Schlicht mappings	Prem Singh Rattan Chand	Ind. Jour. Pure & App. Math. Vol. 10(9), 1167-1174, 1979.
Quasi regular orthogonal systems of subspaces	M. Gupta P.K. Kamthan	Proc. Roy. Irish Aca., Vol. 80A, No. 1, 79-84, 1980.
Several notions of absolute bases	P.K. Kamthan M. Gupta	Jour. fur die reine and angew and the Math., Band 307/308, 160-165, 1979.
Uniform asymptotic stability of impulsively perturbed nonlinear differential equations	M. Ramamohan Rao V.S. Harirao	Nonlinear Analysis The., Meth. & Appl., Vol.4, No. 3, 594-606, 1980.
On the moments of gamma order statistics	P.C. Joshi	Nav. Res. Logistics Quar., Vol. 26, No. 4, 675-679, 1979.
A note on the moments of order statistics from doubly truncated exponential distribution	P.C. Joshi	Annals of the Inst. of Stat. Math., Vol. 31, No. 2A, 321-324, 1979.
Powers of sums of digits	S.P. Mohanty Hemant Kumar	Math. Mag. Vol. 52, No. 5, 310-313, 1979.

TITLE	AUTHOR	JOURNAL
Stability for a continuous time discrete age scale population model	J.N. Kapur	Nat. Acad. Sci. Letters, Vol. 2, No. 5, 185-189, 1979.
Predator-prey models with discrete time lags	J.N. Kapur	Proc. Nat. Acad. Sci. Letters, Vol. 2, No. 7, 235-275, 1979.
Kinematics of population growth	J.N. Kapur	Proc. Ind. Soc. Th. Appl. Mech., Vol. 23, 1979.
Generalized Reynolds equation with slip at bearing surfaces: Multilayer lubrication theory	J.B. Shukla S. Kumar P. Chandra	WEAR, Vol. 60, No.2, 253-268, 1980.
Effects of peripheral layer viscosity and peristaltic transport of biofluid	J.B. Shukla R.S. Parihar B.R.P. Rao S.P. Gupta	J. Fluid Mech. Vol. 97, Pt 2, 225-237, 1980.
Dispersion in Non-Newtonian fluids Effects for Chemical reaction	J.B. Shukla R.S. Parihar B.R.P. Rao	Rheological Acta, Vol. 18, 740-748 1979.
On the mean values of an entire function and its derivatives represented by Dirichlet Series I	R.S.L. Srivastava R.P. Dohrey	Proc. Nat. Acad. Ser. A, Vol. 49, Pt II, 1979.
Proximate order of an entire function with index pair (p,q)	R.S.L. Srivastava R.P. Dohrey Krishna Nandan	Ind. Jour. Pure & App. Math. Vol. 11(1), 33-39, 1980.
Lower and upper formation radical of near rings	M.C. Bhandari P.K. Saxena	Kyungpook Math. Jour., Vol. 19, No. 2, 205-211, 1979.

DEPARTMENT OF MATHEMATICS

TITLE	AUTHOR	JOURNAL
Optimal exploitation of multispecies fisheries	J.N. Kapur M. Saleem	Sen Memorial Volume on Mech. of Continua p-87-95, Jadavpur Math. Assn., Cal. 1979.
A mathematical model for optimal exploitation of mines	J.N. Kapur M. Saleem	Jour. Math. Phy. Sci. Vol. 13, No.4, P.367-379, 1979.
Optimal Harvesting of animal populations	J.N. Kapur	Ind. Jour. Pure App. Math., Vol. 10, No.7, 890-909, 1979.
Steady state birth-death-immigration-emigration processes	J.N. Kapur S. Kapur	Proc. Nat. Aca. Sci., Vol.48, No. 3, 127-135, 1979.
A class of birth-death-emigration processes	J.N. Kapur M. Saleem	Nat. Acad. Sci. Letters, Vol. 2, No. 1, 31-33, 1979.
On the stability of the Reproductive structure of a population	J.N. Kapur	Ind. Jour. Pur App. Math. Vol. 10, No. 10, 1266-1276, 1979.
A continuous time age structured population growth model	J.N. Kapur	Applied Mathematical Modelling Vol. 3, No. 6, 455-458, 1979.
An age and density dependent population model	J.N. Kapur	Jour. Math. Phy. Sci., Vo. 13, 169-177, 1979.
A two sex model for population growth	J.N. Kapur	Acta cincia Indica Vol. 5, No.4, 171-176, 1979.

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| Indian Verse in English | P.P. Sharma | Commonwealth Quarterly, 4, No.1 1979. |
| The Beats' Quairrel with America. | P.P. Sharma | Punjab University Research Bulletin 7, No.2, 1976. |
|tell it slant; Emily Dickinson's Mode of Poetic Utterance | P.P. Sharma | The Visvabharati Quarterly, 44, No.s 1&2, 1978. |
| Kalidasa's Shakuntala: Some Sidelights | P.P. Sharma | Indian Literature 23, No.3, 1979 |
| The Unsure Ones | P.P. Sharma | Triveni, 48, No. 4, 1980. |
| Quest for Wholeness: A Central Preoccupation of Raja Rao's Fiction | P.P. Sharma | Perspectives on Raja Rao, 1980. |
| Faulkner's South and the other South | P.P. Sharma | Faulkner: The Unappeaser Imagination, Ed. Glenn O' Carey (Whitson Publishing Co., New York) 1980 |
| Introduction to the Sound and the Fury | P.P. Sharma | Oxford University Press, 1980. |
| Kerouac's Dharma Bums: Heroes of America's Counter-culture | P.P. Sharma | In Twentieth Century American Novel; Critical Essays by Indian and American Scholars, (ed) B.M. Bhalla (Kalyan Publishers, Ludhina) |
| Ananthmurthy's Samskara: An Existentialist Reading | P.P. Sharma | New Quest, 1980. |
| From Sterotype to Authentic Self-hood: Changing Images of Women | P.P. Sharma | pajab University Research Bulletin 1980 |
| The Forest Flame | P.P. Sharma | Indian Writing in English, 1980. |

COMPUTER SCIENCE PROGRAMME

Sl. No.	Title	Author	Journal
1.	Analytic Models for pluri bus and Time-shored Bus Multi-processor systems	N. De A.S.Sethi	Technical report CS-79-057 Computer Science dept., Washington State University
2.	IIT Kanpur Computer network An introductory description	A.S. Sethi D. Das C.V. Krishna N.S. Narayanan	Networks-80
3.	A.partial implementation of a relational data base management system as an extension to Fortron	R.K. Bagga V. Rajaraman	Information Management Vol.22, No.65 pp.249-260, Dec.1979
4.	On the normalization of relational database	B. Srinivasan V. Rajaram	IPC, Vol.9, No.2, pp 89-92, August 1979
5.	Control flow complexity and structuredness of programmes	B.Srinivasan V.Gopala Krishna	ACM-SIGPLAN, Nov. 1979
6.	A file format for structured programmes with application to data flow analysis	H.V. Sahasrabudde B.H. Jajoo	Technical report Computer Centre IIT/K, May'79
7.	Microprocessor in Navigation	T. Ramanigam H.V. Sahasrabudde R.M.K. Sinha	Proceedings of CSI-1980
8.	Factors of Programme complexity based on a model of programme understanding	B.D. Choudhory H.V. Sahasrabudde	Proceeding of CSI-80
9.	Computer Science Education in India	V. Rajaraman	CSI Communications, March 1980
10.	Tree Adjunct Languages as Integer set Recognizer	S. Biswas and V.K. Vaishnavi	Int. Jl. of Comp. Maths. 1979

METALLURGICAL ENGINEERING

Conferences, Continuing Education Programmes and Seminars
(Participation)

Sl. No.	Title & Place	Date	Sponsor	Nature of your participation	Name
1. Elsewhere	National conference on Industrial Tribology New Delhi	10-12 Oct. 1979	I.I.P. Dehra-Dun	Attended	V. Bansal
2. Attended	Mechanical working Technology Today and Tomorrow Ranchi	12-13 April 1980	I.I.M. Chapter Ranchi	-	R.K. Dube
3. "	I.I.M. Annual Technical Meeting Hyderabad	14-16 Nov. 1979	I.I.M.	Presented a paper	R.K. Dube
4. Organised at IIT/K	National Seminar on X-ray techniques in Materials Research I.I.T., Kanpur	Feb. 1980		Chairman	A. Ghosh
5. Attended	XI Electron Society Annual Meeting S. R.O. in Cu-15 Al Alloy Chandigarh	Dec. 1979	Microscopy	Presented a paper	K.P. Gupta
6. Attended	Phase Equilibria in RE-Co system	March 1980	Joint Indo-U.S. Conference on Rare-Earth Research	Presented on invited paper	K.P. Gupta

Honours and Awards

1. Dr. Y. Jaluria was selected for the Young Scientist award.
2. Dr. J.S. Goela was featured in an article entitled, "In Search of a Much Higher Source of Energy", by Tim Clark in "Yankee" magazine, March 1979.
3. Dr. J.S. Goela is listed in "American Men and Women of Science".

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| 14. | Case Studies in Quality Control Using Orthogonal Array Techniques, Hyderabad, January 1980. | K. Sri Ram |
| 15. | Workshop on Heat Transfer and Fluid Flow, March 1980, BARD Bombay. | K. Sri Ram |
| 16. | IFAC Symposium on Power Systems and Controls, New Delhi August 1979 | B. Sahay |
| 17. | Winter Meeting of American Nuclear Society, San Fransisco, U.S.A., November 11-14, 1979. | A. Sengupta |
| 18. | National Conference on Fluid Mechanics, and Fluid Power at Surat, Dec. 17-18, 1979. | M. Prasad |
| 19. | National Conference organized at IIT Delhi (ISME), Feb. 21-23, 1980. | M. Prasad |

Conferences Organized

Sl.No. Conference

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| 1. | Nuclear Engineering & Technology Education in India at IIT Kanpur, March, 1980. | K. Sri Ram |
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Summer/Winter School (Attended)

NIL

Summer/Winter School (Organized)

1. A Refresher Course on Special Topics in Mechanical Engineering for supervisory staff of IEL was organized at IIT Kanpur in June 1980. Dr. G.S. Kainth was the Coordinator, and Drs. B.P. Singh, G.S. Kainth, V.K. Garg, S.N. Bandyopadhyay, and J.L. Batra were the lecturers.
2. Drs. S.G. Dhande and V.K. Garg Lectured in a QIP Summer School on Advanced Machine Design Organized by Dr. S.S. Rao at IIT Kanpur, May 1979.
3. Professor M. Prasad gave twelve lectures and two seminars at the Advanced Summer School arranged on the occasion of Silver Jubilee of Hathras Polytechnic. He was the Chief Guest at the closing ceremony of this school held in June-July, 1980.

MECHANICAL ENGINEERING

Conferences Attended

Sl. No.	Conferences	Faculty
1.	Workshop on Thermal Deformation Annapolis, MD, USA, June 1979.	B.N. Banerjee
2.	National Seminar on Bicycles and Pedal Driven Machines, January 13-15, 1980, HBTI, Kanpur	P. Kumar, S.G. Dhande, B.L. Dhoopar
3.	24th Congress of ISTAM, at Rourkela, February 1980.	B.L. Dhoopar
4.	III ISME Conference, New Delhi, February 1980.	B.L. Dhoopar G.S. Kainth
5.	2nd International Conference on Computational Methods in Nonlinear Mechanics, Austin, Texas, USA, March 26-29, 1979.	V.K. Garg
6.	Second Symposium on Lasers, March 20-23, 1979, at IIT Kanpur	J.S. Goela
7.	Int. Conf. on Numerical Methods in Thermal Problems, U.K., July 1979.	Y. Jaluria
8.	National Heat Transfer Conf., U.S.A. Aug. 1979.	Y. Jaluria
9.	National Heat Transfer Conf., Hyderabad, Feb. 1980.	Y. Jaluria
10.	International Colloquium on the Cutting of Metals, St. Elienne, France, November 21-23, 1979	G.S. Kainth
11.	National Symposium on Large Deformations, IIT Delhi, December 17-19, 1979.	G.S. Kainth
12.	International Seminar on Metal Working Technology, Today and Tomorrow.	G.S. Kainth
13.	Annual Symposium of Aeronautical Research and Development Board, NAL, Bangalore, March, 1980.	P. Kumar B.D. Agarwal

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|---|------------|--|--------------|
| 6. A.C. Traction Using
Current and Voltage
Source Inverters -
A Comparison | - | Gould Inc., Corporate
R&D Center,
Rolling Meadows,
Ill., U.S.A. | A. Joshi |
| 7. A.C. Traction Drives
Using C.S. Inverters. | Sept. 1979 | IIT-Kanpur | A. Joshi |
| 8. Reconstruction from
Projection Computer
Aided Tomography. | - | IIT-Kanpur | S.K. Mullick |
| 9. Feasibility of Multiphase
Systems. | Sept. 1979 | REC Rourkela
(Under UGC) | L.P. Singh |

Summer & Winter School Organised at the Institute

1. "Thyristor Power Controllers & Drives"-G.K. Dubey & S.R. Doradla
December 10-23, 1979.
2. QIP Summer School on Selected Topics in Power System"-L.P. Singh
May 5-17, 1980.
3. "Recent Trends in Solid State Electronic Devices", M.S. Tyagi
May 14 to June 2, 1979.
4. "Computers in Power System Monitoring and Controls",
December 10-23, 1979.

ELECTRICAL ENGINEERING

Conferences:

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|--|---------------------|-----------------|---------------------------------------|
| 1. 156th Electrochemical Society Meeting | October 14-15, 1979 | Los Angeles | S. Kar |
| 2. IEEE International Electron Devices Meeting. | December 3-5, 1979 | Washington D.C. | S. Kar |
| 3. 23rd IETE Technical Convention | January 13, 1980 | New Delhi | S. Venkateswaran,
Y. Venkataramani |
| 4. IETE Symposium on "Circuits | March 29 1980 | Madras | S. Venkateswaran. |
| 5. IFAC Symposium on Computer Applications in Large Scale Power Systems. | August, 1979 | New Delhi | L.P. Singh |
| 6. Conf. on Power System Protection. | April 1980 | Madras | L.P. Singh |

Invited Lectures:

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| 1. Characterization & Properties of Ultrathin Metal Films | September 20, 1979 | The Pennsylvania State University USA. | S. Kar |
| 2. Surface Barrier Solar Cells. | October 15, 1979 | Univ. of Southern California, U.S.A. | S. Kar |
| 3. Solar & Electrochemical Cells for Energy Conversion. | October 31, 1979 | Lehigh Univ., U.S.A. | S. Kar |
| 4. Recent Progress in Photovoltaic Energy Conversion. | November 16, 1979 | Columbia Univ., U.S.A. | S. Kar |
| 5. Recent Advances in Solar Cells. | February 21, 1980 | IIT-Kanpur | S. Kar |

- Symposium on Offshore (was Chairman of Structures, IIT, Delhi, one session) Oct. 1979. P. Dayaratnam
- International conference on Computer applications in Civil Engg, Univ. of Roorkee, Roorkee, Oct. 1979
- 24th Conf. of ISTAM, Rourkela, 1980 A.S.R. Sai
- 6th National convention on Environmental Engineering, Calcutta, March 1980. D.K. Ghosh
- Modern Civil Engineering (was a chairman Curriculum, IIT, Delhi, of one subgroup) May 1980 B.R. Marwah
- Urban Bus Transit Workshop, Univ. of Roorkee, Feb. 1980. (was a Guest speaker)
- International conf. on Computer Applications in Civil Engg., Roorkee, October 1979. K.K. Rampal
- National Conference on "Municipal Solid Waste Management", September 13-14, 1979 A.V.S.P. Rao
C. Venkobachar
(Convenors)

CIVIL ENGINEERING

Conferences (Participated elsewhere)

- a. Seminar CEDEEP - as invited panelist
Oct. 1979 M.R. Madhav
- b. International conf. on (was General
computer methods in reporter)
civil engineering
October 1979, Roorkee.
- c. International symposium on
Landslides,
April '80, New Delhi
- a. 6th Asian Regional- (was a panelist for Yudhbir
conf. on Soil Mech. and one session)
Foundation Engg. at
Singapore,
July 1979
- b. International symposium (was a general
on Landslides, reporter)
April 1980, New Delhi.
- International Symposium on
Insitu Testing of Soils and
Rocks and performance of
structures Dec. 1979,
Roorkee Umesh Dayal
- a. National symposium on
Large Deformations (in
memory of Prof. B. Karunes),
IIT, Delhi, Dec. 1979. Ashwini Kumar
- b. National conference on
Pressure Vessel Technology,
R and D Est. (Engrs.), Pune,
Feb. 1980.
- c. Structures panel symposium
on ARDB sponsored projects,
Bangalore, April 1980.

AERONAUTICAL ENGINEERING

Conferences, Continuing Education Programmes and Seminars

a. Organised at the Institute

b. Attended by Faculty Elsewhere.

1. Seventh Canadian Congress of Applied Mechanics, Sherbrooke, Canada. May 27-June 1, 1979. N.L. Arora
2. All India Symposium on Management of Science & Self Reliance. AIIMS, New Delhi. Feb. 6-10, 1980. K. Ghosh
3. Advance Course on Random Process Data Analysis. NAL Bangalore. June 25-July 6, 1979. S. Narayanan
4. Seminar on Industrial Aerodynamics, Institution of Engineers, Bangalore. Feb. 7-8, 1980. N.C. Nigam (Co-Organizer)
5. Sixth International Symposium on Combustion Processes. Karpacz, Poland. Aug. 26-30, 1979. O.P. Sharma

NUCLEAR ENGINEERING AND TECHNOLOGY PROGRAMME

Title	Author	Journal
1. A. Transport Thoretic P_N approx..	K.Ganguly A. Sengupta	Published in Nucl. Sci.Enggn.April 1980
2. Interface and source problems by a Transport Thoretic P_N approximation	K. Ganguly A. Sengupta	Accepted in Nucl. Sci. Engg.
3. Inverse Eigenvalue Problem for a finite multiplying slab.	A. Sengupta K. Ganguly	Published in J.Phys. A. July 1980
4. Energy dependent Neutron Transport by seperation of variable approximate solution	A. Sengupta	Submitted to Nucl. Sci.Engn.
5. On delta function scattering anisotropy	A. Sengupta	Submitted to J. Math. Phys.

15. "Materials Technology for Silicon Solar Cells",
S. Kar & E.C. Subbarao,
International Materials Congress, Reston, Virginia, 1979.
16. "Mechanism of Degradation in MOS Solar Cells", S.Kar, R. Verghese
Extended Abstracts of the 156th Electrochemical Society
Meeting, Los Angeles, Vol. 79-2, pp. 754-755, 1979.
17. "Interface Characteristics of Oxide Semiconductor on
Silicon Hetero Junction",
S. Kar, L. Gobis & J. DuBow
Extended Abstracts of the 156th Electrochemical Society
Meeting, Los Angeles, Vol. 79-2 pp. 1456-1457, 1979.
18. "Structural Optical and Electrical Properties Ultrathin
Metal Layers",
R. Verghese, S. Kar & T.R. Ramachandran,
Extended Abstracts of the 156th Electrochemical Society
Meeting, Vol. 79-2, pp. 1492-1493, 1979.
19. "Formation of Ultrathin Semiconducting Layers of SnO_2 on Si"
S. Verma, U. Mishra & S. Kar,
Extended Abstracts of the 156th Electrochemical Society
Meeting, Los Angeles, vol. 79-2 pp. 1498- 1499, 1979.
20. "Evidence of Tunnel-Assisted Transport in Non-Degenerate
MOS and SOS Diodes at Room Temperature"
S. Kar, S. Ashok & J. Fonash,
J. Appl. Physics, June 1980.

8. "Synthesis and Hydrogen Sorption of FeTi and Fe-Ti-Mn Alloys",
K.N. Rai and P. Mukhopadhyay,
Presented in the Technical Meeting of Indian Institute of Metals held at Hyderabad, Nov. 1979.
9. "Stability of Fe-Ti-Mn Intermetallic Hydrides",
K.N. Rai
Presented at the Interdisciplinary meeting on
"Hydrogen in Metals" held at BARC, Bombay March 1980.
10. "Structural Transformation in Amorphous Garnets",
D. Bahadur & K.N. Rai,
Presented at the Indo-U.S. Conference on Rare Earth Metals at Cochin March 1980.
11. "On the Design and Operation of Electrochemical Solar Cells",
S. Kar, K. Rajeshwar, P. Singh and J. Du Bow,
Solar Energy 22, 1979.
12. "MOS Solar Cells on Polycrystalline Silicon"
S. Bhattacharya, D. Shanker, S. Verma & S. Kar,
Digest of the 11th International Conference on Solid State Devices, Tokyo, pp 219-20, 1979.
13. "Effects of Barrier Metal, Optical Concentration and Grain Boundary on Polysilicon MOS Solar Cells",
S. Bhattacharya, S. Verma & S. Kar,
Proc. of the International Electron Devices Meeting,
Washington D.C. pp. 430-434 (1979).
14. "Majority Carrier Conduction Effects in ITO/SIS Solar Cells",
J. DuBow, L. Gobis & S. Kar,
Proc. of the 14th IEEE Photovoltaic Specialist Conference,
San Diego, California, 1980.

MATERIAL SCIENCE PROGRAMME

Publications:

1. "Glass Fibres Containing Metallic Granules"
D. Chakravorty, B.N. Keshavram and A. Venkateswaran.
J. Materials Science 14 (1979) 2991.
2. "Electrical Properties of Silicate Glasses containing Antimony Oxide"
D. Chakravorty, D. Kumar and G.V.S. Sastry, J. Physics D: Applied Physics 12 (1979) 2209.
3. "Electrical Characterization of Borate Glasses containing Metallic Granules",
D. Chakravorty and S. Chakravarti,
Proc. XII International Glass Congress, New Mexico, USA, July, 1980.
4. "Electrical Properties of Silicate Glasses containing Arsenic Oxide",
Devendra Kumar and D. Chakravorty
J. Physics D: Appl. Phys. June 1980 (in press).
5. "Structural and Catalytic Activity of Supported $V_2O_5-K_2SO_4$ Catalysts"
R.K. Sharma, K.N. Rai & R.D. Srivastava
J. Catalysis (1980).
6. "Observation of Magnetic Bubbles and Structural Transformation in Amorphous Garnets",
D. Bahadur and K.N. Rai,
Materials Research Bulletin (1980).
7. "Thermal Decomposition of 1:1 Bismuth Molybdate and its Implication for Catalytic Oxidation",
Jitendra Kumar and Eli Ruckenstein,
Journal of Solid State Chemistry, 31 (1980) 41.

INDUSTRIAL & MANAGEMENT ENGINEERING

1. "Application of Operations Research Techniques in Transport Phenomenon", Presented at Conference on Transport Phenomenon, Mech. Engg., Institute of Technology, Banaras Hindu University, Feb. 24-26, 1980; Kripa Shanker.
2. "An Integrated Approach for Facility Location and Handling System Selection with Investment Constraint", Proceedings of the National Seminar on Materials Handling, Lucknow, Jan. 13, 1980; pp. A 9-24; J.L. Batra.
3. "Problems of Small Scale Industries in U.P. with Special Reference to Kanpur Region", Proceedings of the Seminar on Strategies for Industrial Development of Kanpur Region, December 8-9, 1979, The Institution of Engineers (India), Kanpur Sub Centre.
4. "Parametric Analysis of Some Network Problems", Communicated to INFOR; R.K. Ahuja, J.L. Batra, and S.K. Gupta.
5. "Parametric Analysis of Maximum Flow Problem", Communicated to Operations Research; R.K. Ahuja, J.L. Batra and S.K. Gupta.
6. "Parametric Flows in Networks", Communicated to Management Science; R.K. Ahuja, J.L. Batra and S.K. Gupta.
7. "Maximal Arc-Disjoint and Node-Disjoint Flows in Two Commodity Networks", Communicated to OPSEARCH; R.K. Ahuja and A.K. Mittal.

7. Organised at IIT/K	Heat Treatment (Mechanical Properties of Thermally cycled Alloys) IIT/K	Dec. 1979	Q.I.P. Lecture	S.P. Gupta
8. Attended	ESCAP/RCTT Workshop on Rice Husk Ash based cementation Materials Alor Sector Malaysia	Dec. 1979	Inventor	P.C. Kapur
9. Attended Elsewhere	Annual convention Tech. Meeting HINDHANI Hyderabad	1979	Indian Institute of metals	Contributed paper K.N. Rai
10. "	Interdisciplinary meeting on Hydrogen in Metals Bombay	1980	BARC	- do - K.N. Rai
11. Attended at IIT/K	National Seminar on X-ray Techniques in Materials Research Kanpur	Feb. 1980	IIT/K	Attended Raj Naray.
12. Attended Elsewhere	Second National Conference on Corrosion and its control Calcutta	Dec. 1979	SAEST Institution of Engineers	Presented a paper Karikudi "
13. Attended Elsewhere	International Seminar on Metal Working Technology: Today's and Tomorrow Ranchi	April 1980	Indian Institute of Metals Ranchi Chapter	Attended "
14. Organised at IIT/K	National Seminar on 'X-ray Techniques in Materials Research' IIT/K	11-13 Feb. 1980	IIT/K I.I.M. and D.S.T.	Organising Secretary R.K. Ray

Topics	Faculty	Forum
2. A DELPHI Study on Problems of Small Scale Industries	J.L.Batra	The Institution of Engineers, Kanpur Sub Centre
3. Management Information Systems	J.L.Batra	J.K.Synthetics Kanpur

INDUSTRIAL AND MANAGEMENT ENGINEERING PROGRAMME

Conferences, Continuing Education Programmes and Seminars:

Conferences

(i) Organised at the Institute : Nil

(ii) Attended by Faculty Elsewhere:

1. Regional Seminar on Materials Handling, Lucknow, January 13, 1980; J.L. Batra.
2. Conference on Transport Phenomenon, B.H.U., Varanasi, Feb. 24-26, 1980; Kripa Shanker.

Summer and Winter Schools:

(i) Organised at the Institute:

Title	Dates	Coordinator
A. Q.I.P. Summer School on Management of Production Systems	May 5-17, 1980	J.L. Batra

(ii) Attended by Faculty elsewhere: Nil

Intensive/Short Courses:

Title	Dates	Coordinator
Project Formulation and Implementation	Feb.18- March 9, 1980	J.L. Batra

Seminars:

Topics	Faculty	Forum
1. Case Studies on Design of Experiments Using Orthogonal Array Technique	Kripa Shanker	BHEL, Hyderabad

COMPUTER SCIENCE PROGRAMME

etc.

Conferences/attended by Faculty

Title	Dates	Faculty
1. Networks-80: International Symposium on Data Communication and Computer Networks, Bombay	Feb. 1980	A.S. Sethi
2. Workshop on Curriculum in the area of computer science and engineering	April 1980	V. Rajaraman K.V. Nori H.V. Sahasrabudhe
3. IFTE Annual Convention	Dec. 1979	V. Rajaraman

- | | |
|---|---|
| 13. Asymptotic Design and estimation using linear splines | Dr. G.S. Agarwal, ISI, Calcutta. |
| 14. Summability Theory | Prof. T. Pati, Allahabad University, Allahabad. |
| 15. Approximate solution of Quasi linear Elliptic equations | Dr. S. Shirali, Punjab Univ., Chandigarh. |
| 16. Convexity of Chebysev sets and the best approximation operator (6 lectures) | Dr. B.B. Panda, Sambalpur University. |

Lectures delivered by Mathematics Department Faculty members outside IIT/K.

Graph Theory (15 lectures)

S.P. Mohanty, Berhampur University.

DEPARTMENT OF MATHEMATICS

Lectures delivered by persons from outside the Institute

- | | |
|---|---|
| 1. Nuclear spaces, operators, Schauder bases (5 lectures) | Prof. N. De Grande-De Kimpe, Vrije Universiteit Brussel, Belgium. |
| 2. Introduction to Catastrophe Theory (2 lectures) | Prof. E.C. Zeeman, FRS, Math. Centre, Univ. of Warwick, UK |
| 3. Applications of Catastrophe Theory to physical Sciences. | " " " " |
| 4. Topology determined by paths | Prof. S.P. Franklin, Memphis State Univ., U.S.A. |
| 5. Rediscovered Theorems in Geometry | Prof. D. Pedoe |
| 6. Topological Factors of Hilbert Spaces and Hilbert cubes (2 lectures) | Prof. C. Bessaga, Warsaw University, Poland |
| 7. Functional Analysis (8 lectures) | " " " " |
| 8. Motion on particles in viscoelastic fluids. | Prof. H. Giesekeus, Univ. of Dortmund. |
| 9. Two Norm spaces (7 lectures) | Prof. P.K. Subramanian, Missouri, U.S.A. |
| 10. Cocycles and flows (2 lectures) | Prof. Henry Helsen, Univ. of California, Berkeley, U.S.A. |
| 11. Differential Topology (5 lectures) | Dr. A. Banerji, TIFR, Bombay. |
| 12. Algebraic Geometry (2 lectures) | Prof. Gopal Prasad, TIFR, Bombay. |

Prof. R.K. Bhatnagar

1. Eighth One-man Show of Paintings - Taj Art Gallery, Bombay (May 1979).
2. Ninth One-man Show of Paintings - Rabindra Bhawan, New Delhi (December 1979).
3. Exhibition of Paintings, Lalit Kala Akademi Stall, India Trade Fair, New Delhi.

13. Second U.P. Sociological Conference, Gorakhpur University, 1979.

R. Parde

ACADEMIC HONOURS

Prof. R.K. Bhatnagar

1. Elected member of the General Council of State Lalit Kala Akademi, U.P., Lucknow.
2. Awarded prize on Paintings at 13th Annual Exhibition (1979) of State Lalit Kala Akademi, U.P., Lucknow.

Dr. T.V.S. Ramamohan Rao

3. Elected member of the Council of the Indian Econometric Society

Dr. P.N. Rastogi

4. Appointed Member, Editorial Board of International Public Policy Research Corporation, McLean, Virginia, U.S.A.

Dr. P.P. Sharma

5. Senior Academic Associate, American Studies Research Centre, Hyderabad, May-June 1979.
6. Elected General Secretary of the Indian Association for American Studies.
7. Coopted contributing editor for ELT Forum Journal of English Studies

Other Activities

P.P. Sharma

1. Roorkee University: Extension Lecture: "Humanities Unprofession but Irreplaceable."
2. Juhari Devi Degree College, Kanpur: Invited Lecture on "Hardy the novelist with special reference to The Mayor of Casterbridge."

Prof. Amit Ray

1. One painting exhibited in the Lalit Kala Akademi, Delhi (National Exhibition) 1979.
2. Two paintings exhibited in Chicago Summer show 1979.

HUMANITIES AND SOCIAL SCIENCES

CONFERENCES

1. Indian Economic Association, 62nd Annual Conference, Surat, Dec. 26-28, 1979-Paper presented: "Economic Development in India and China: A Comparative Study." R.R. Barchwal
2. Indian Economic Association & International Economic Association, Poona, March 1980. Invited Paper: "Employment and Industrialization: The Indian experience". T.V.S. Remamohan Rao
3. American Studies Research Centre, Hyderabad, Seminar on 19th century American Literature Dec. 1979, paper presented: "Melville as Critic of Reason." R.K. Gupta
4. Seminar on Language Learning in Multilingual Indian Context, Delhi, January 1979, Paper presented "Planning the 'Other Tongue' Teaching in India." B.N. Patnaik
5. Commonwealth Literature Seminar, Jaipur, November 1979. Paper presented: "Language in Indo-Anglian Fiction." B.N. Patnaik
6. Second International Conference on South Asian Languages and Linguistics, Hyderabad, January 1980. Paper Presented: (With Ira Pandit). "Englishization of Oriya and Hindi (a comparative study)." B.N. Patnaik
7. All-India English Teachers' Conference, Madras University: Chaired the Drama Section. P.P. Sharma
8. Annual Session of the Indian Association for American Studies, Bangalore: Paper Presented: "Faulkner's Use of the Philoctetes Syndrome." P.P. Sharma
9. American Centre and University of Rajasthan, Jaipur. Seminar on "Recent American Fiction." P.P. Sharma
10. International Meeting of Art Educators, Atlanta, Georgia, U.S.A. March-April 1980. Paper Presented: "Art Education in India Today- a Reportage." R.K. Bhatnagar
11. Indian Psychological Association, Annual Conference, Dharwad, June 1979. Paper Presented: "The Effect of Amount of Help on Recipient Reactions." L. Krishnan
12. ICSSR Workshop on Experimental Social Psychology, Allahabad University, Dec. 1979. Presented invited paper: "Altruism and Helping Behavior - A Review and Critique." L. Krishnan

Conferences attended:Invited talks delivered:Universities of Jaipur, Udaipur, Pune:IIM,Ahmedabad, BARC Bombay;CDRI, Lucknow.

Dr.S.Mukherjee: 8th International Conference on Atomic Collisions in solids at Hamilton Ont., Canada (August 1979).

Dr.N.Sathyamurthy:Annual Convention of Chemists, 1979.
Invited talks delivered: Annual Convention of Chemist, 1979.

Dr.P.Raghunathan: XX International Coordination Chemistry Symposiums Calcutta, India.

Invited talks delivered: i) Magnetic Resonance of Reverse Micellar Systems (VV Kumar)
ii) NMR in Crystalline Hydrates, etc. (KK Muralee Dharan)
iii) Magnetic Resonance Adsorbed Systems (SK Sur)
iv) Dynamics of Molecules in Solids as revealed by Magnetic Resonance, June 2 1979, University of Madras.
v) Matrix Isolation EPR Spectroscopy June 27, 1979, IIT/Madras.
vi) Invited Speaker at the "Solid State Spectroscopy Symposium, IIT/Madras, 1980.
vii) Pulsed NMR Techniques for the Study of solids. University of Madras, 1980.

Dr.D.N.Dhar: 1.I was a member of the Indian Scientific delegation to participate in the Indo-Soviet Symposium on Natural Products, Armenia, USSR, May 1978.

2.Attended the International Symposium on the Marine Algae of the Indian Ocean Region, Bhavnagar-India. January 9-12, 1979.

Invited talks delivered: Delivered two invited lectures entitled Chromatographic Separations in the QIP course on New Separation Processes, offered by the Deptt. of Chem.Engg, IIT/K.

AWARDS & HONOURS: Dr.N.Sathyamurthy: Young Scientist Medel, 1980.

Dr.S.Ramganathan: UGC National Lecturer, 1979-80.
Venkataraman Lecturer, 1979.

Dr.P.Raghunathan: Give-Week High level visiting Professorship (June 1, 1979-July 7, 1979 University of Madras).

Co-guiding (with Professor K.N.S.Rao) of M.Tech. Thesis Project of Mr.M.Thangaraj, Material Science Programme IIT/Kanpur

4.	R.R.L. Trivendrum	Recycle of Mineral/ Metallurgical Wastes	June 1979	P.C. Kapur
5.	P.P.N. Post- Graduate College	Chemical Bond in Molecules	May 1980	K.N. Rai
6.	-do-	Electron Microscopy in Practice (Inagural talk for Physical Society)	May 8 1980	K.N. Rai
7.	Institute due Verre' Paris France	Quantification of Glass melting rates	Oct. 1979	H.S. Ray
8.	Glass Experimental Station, Muramo Venice, Italy	Laboratory Experi- ments for studying (glass melting problems)	Oct. 1979	H.S. Ray
9.	B.E. College Howrah-3	6 lectures on theories of Metals	March 1980	R.K. Ray

Any Other Item

Sl.No.	Name
1.	Editor, Transactions Indian Institute of Metals
2.	Council Member, Indian Institute of Metals
3.	Cochairman at one of the technical session Reporteur at other during International Seminar on Metal Working Technology, Today and Tomorrow.
4.	Awarded Kamani Gold Medal by I.I.M. for the best paper published in Trans. I.I.M. in 1979.
5.	Title: Thermodynamic and Kinetic Studies in the system Zr (Hf) Cl ₄ - alkali chloride
6.	Was member of the Indian delegation to the Indo-US subcommission on Science and Technology and Chairman of its working Group on Modern optics, Materials, Electronics and Metrology Feb. 1980. Was elected President of the Indian Institute of Ceramics for 1980-81.

Name

A. Ghosh

A. Ghosh

Raj Narayan

H.S. Ray

H.S. Ray
B.G. Bhat
G.S. Reddy
and
A.K. Biswas

E.C. Subbarao

High-Level Summer Industrial Training for Participation in Teaching/Research.

Sl. No.	Organisation	Dates	Nature of Assignment	Name
1.	Rourkela Steel Plant, SAIL	May 28- July 17 1979	To help studies being taken to control (Si) in BF metal	N.K. Batra
2.	D.A. Associates Alor Sector Mabysia	May '79 Dec '79	Rice Husk Ash Cement Plant	P.C. Kapur
3.	Univ. of Aston Brimingham	5.5.79 to 21.7.79	Visiting Academic	R.K. Ray

Books

Sl. No.	Title	Authors
1.	'Solid Electrolytes and Their Applications: Plenum Publishing Co., New York 1980, pages 294	Ed. E.C. Subbarao
2.	'Problemas de Thermodyamica y Cinetica en Metalurgia', <u>Genvenio, Buenos Aires, 1979</u> ((Spanish Translation of book published originally by Pergaman Press Oxford)	G.S. Upadhyaya Co-author R.K. Dube

Invited Lectures (Other than Conferences, Short Course)

Sl. No.	Host Organisation	Lecture Title	Dates	Names
1.	R.S.P., SAIL	Advances in BF Technology	June 79 (8 lectures)	N.K. Batra
2.	All India Radio Lucknow	Impact of Metals on Human Life	12.4.80 (Broad-casted)	R.K. Dube
3.	I.I.M. Kanpur Chapter	A New Route for Steel strip production	5.4.80 (Broad-casted)	R.K. Dube

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|------------------------|--|----------------------|--|--|----------------------------|
| 15. Organised at IIT/K | Modern Trends in Heat Treatment Technology IIT/Kanpur | 10-12 to 22-12 | I.S.T.E. | Delivered Lectures | R.K.Raj |
| 16. Organised at IIT/K | Modern Trends in Heat Treatment Technology IIT/Kanpur | 10-12 Dec. to 22-12 | Indian Society for Technical Educations | Two invited lectures | R.C. Sharma |
| 17. Attended Elsewhere | 2nd International Conference on Corrosion and Protection Calcutta | Dec. 19-21 1979 | Society of Advancement of Electrochemical Science and Technology | Organization of Delivered Planery Lectures on some significant aspects of Metallurgical Factor in study of corrosion | K.P. Singh |
| 18. Attended Elsewhere | Indo-US conference on science and Technology of Rare Earth Materials Cochin, India | March 3-8, 1980 | DST | Chairman Organizing committee invited speaker | E.C. Subbar |
| 19. Organised at IIT/K | Modern Trends in Heat Treatment Technology IIT/Kanpur | 10.12.79 to 22.12.79 | ISTE | Delivered eight lectures on Failure Analysis | M.L. Vaidya |
| 20. Organized at IIT/K | QIP Winter School on Modern Trends in Heat Treatment Technology | 10.12.79 to 22.12.79 | ISTE | Coordinators | G.S. Upadhyaya & A.K. Jena |

ATERIAL SCIENCE PROGRAMME

onferences, Continuing Education Programme and Seminars

a) Organised at the Institute:

- (1) "Symposium on Non-Crystalline Solids" February 4-5, 1980. Dr. S.C. Agarwal
 - (2) "National Seminar on X-ray Techniques in Materials Research". *Dr. D. Chakravorty
Dr. K.N. Rai
Dr. D.C. Agrawal
*Dr. J. Kumar
Dr. K.N. Swamyrao
- (*Member, Organizing Committee)

Seminars

- (1) "Communication Fibres"
Dr. B.K. Tariyal, Scientist, Bell Telephone Lab. USA
- (2) "Beginning of Iron Age in Eastern Mediterranean",
Dr. Robert Maddin, Univ. Prof. of Metallurgy,
University of Pennsylvania, Philadelphia 19104, USA
- (3) "Materials Policies",
Dr. Frank Huddle, Senior Specialist, Science & Technology,
Congressional Research Service Library of Congress, Washington
D.C., USA
- (4) "Laser and Electron Beam Processing, A New Frontier in
Materials Science",
Dr. J. Naryan, Oak Ridge National Laboratory,
Solid State Division, Oak Ridge, Tennessee 37830, USA
- (5) "Point Defects in Alpha Quartz"
Dr. Himanshu Jain, Argonne National Lab., USA
- (6) "Development of Metallurgy, Metallurgical Education in Bulgaria"
Prof. I.M. Kutshoukov, High Institute of Chemistry,
& Technology, Sofia, Bulgaria.
- (7) "Metallic Glasses"
Dr. T.R. Anantharaman, Dept. of Metallurgical Engg.,
Institute of Technology, Banaras Hindu University,
Varanasi-221005.

(b) Attended by Faculty elsewhere

- (1) Technical Meeting of Indian Institute of Metals, organized
by Mishra Dhatu Nigam, Hyderabad, Nov., 1979. - Dr. K.N. Rai.