

ANNUAL REPORT 2009-2010

DEPARTMENT OF MATHEMATICS

1. INTRODUCTION:

The Department of Mathematics was established in 1959 along with the Institute. It offers M.Sc. programme in Mathematics, M. Tech. program in Industrial Mathematics and Scientific Computing [IMSC] and Ph.D. programme. In addition, the Department has taken the responsibility of teaching Mathematics courses to B.Tech., M. Tech. (other than IMSC), Dual Degree in ED, M.Sc. and Ph.D students of the Institute. The department has also signed an MoU for an Exchange Programme with TU Kaiserslautern under the DAAD Exchange Programme Network for 5 years beginning from 2009.

The major areas of research of the department are:

1. Algebra and its applications
2. Applied Probability
3. Approximation Theory
4. Computational Fluid Dynamics
5. Continuum Mechanics
6. Coding Theory
7. Complex Analysis
8. Data Networks
9. Differential Equations
10. Inverse and Ill- Posed problems
11. Fluid Mechanics
12. Functional Analysis
13. Fuzzy Sets and Systems
14. Graph Theory and Combinatorics
15. Harmonic Analysis
16. Inventory and Reliability
17. Mathematical logic & Applications
18. Mathematical Modeling
19. Mathematical Physics
20. Nonlinear Analysis
21. Numerical Analysis
22. Operations Research
23. Operator Theory
24. Queuing Theory
25. Statistical Quality Control
26. Stochastic Processes and their applications
27. Theoretical Computer Science
28. Wavelets and their applications
29. Algebraic Geometry
30. Fractal Geometry and its applications
31. Commutative Algebra

2. ACADEMIC PROGRAMMES:

2.1. New Discipline branch Introduced: NIL

2.2. New Courses Introduced:

S.No.	Course No.	Title
1.	MA 6001	Introduction to Coding Theory
2.	MA 6001	Approximation Theory
3.	MA 6003	Wavelets
4.	MA 6004	Fractals
5.	MA 6005	Applied Linear Algebra
6.	MA 6006	Applied Integral Equations
7.	MA 6007	Nonlinear Partial Differential Equations
8.	MA 6008	Operations Research – II
9.	MA 6009	Theory of Bio-Inspired Computing
10.	MA 6011	Mathematical Programming
11.	MA 5430	Algebra II: Ring Theory and Field Theory
12.	MA 5460	Transform Techniques
13.	MA 5140	Introduction to Algebraic Topology

2.3 New lab(s) established:**2.4. Students on Roll:**

Programme	I Year	II Year	III Year	IV Year	V Year & Others	Total
M.Sc.						
M.Tech.						
Ph.D.						
Total						

2.5. Endowment Prize Instituted: (Academic section will furnish)**2.6. Names of Students/Scholars attended Conferences/Seminars and Symposia abroad/India:**

Sl. No.	Name of the Student/Scholar	Roll No.	Name of the Conference/ Seminar/ Symposia	Venue and Date
1.	Mr. K.P. Deepesh	MA06D001	24 th annual Conference of the Ramanujan Mathematical Society	ISI, Bangalore May 10-13,2009
2.	Mr. Venku Naidu	MA04D007	International Conference and Workshop on Analysis and its applications	IISc., Bangalore May 14-27,2009
3.	Mr.G. Satyanarayana	MA06D003	Indo-German Conference on PDE, Scientific Computing and Optimization Application	I.I.T. Kanpur October 7 – 9, 2009
4.	Mr. M.Panchatcharam	MA08D002		
5.	Mr. Tanmay Sarkar	MA09D006		
6.	Mr. T. Karthick	MA05D007	Indo-Taiwan Conference on Discrete Mathematics – 2009	National Taiwan University, Taipei, Taiwan Nov.9 –12,2009
7.	Dr. Saroj Kumar Dash	MA09PD002	Control and Inverse Problems	I.I.Sc. Bangalore Dec.16 –18, 2009
8.	Mr. M.Panchacharam	MA08D002	75 th Annual Conference of Indian Mathematical Society (IMS)	Kalasalingam University, Srivilliputhur Dec.25 –31, 2009
9.	Mr.S.V. Bharanedhar	MA08D009		
10.	Mr. I. Jeyaraman	MA06D005		
11.	Mr. A. Chandrasekharan	MA05D003		
Workshop:				
13.	Mr. K.P. Deepesh Mr. Sankaraju Kosuru Mr. Zeta Paul Mr. Rajesh Kannan Ms. Shani Jose Mr. G. Krishna Kumar	MA06D001 MA07D004 MA08D008 MA08D007 MA08D004 MA07D005	Geometry of Banach Spaces	ISI, Bangalore June 1-13,2009
14.	Mr. Debasisha Mishra	MA07D005	Spectral Theorem	Kerala School of Mathematics June 14-17,2009
15.	Mr. Ramanababu Kaligatla	MA08D012	PDE and related Analysis	I.I.Sc. Bangalore Aug.31 –Sep.18, 2009

16.	Dr. Swadesh Kumar Sahoo	MA08PD001	Domains and Hyperbolic-type Metrics	School of Mathematical Sciences, NISER, Bhubaneswar Nov.17-19, 2009
17.	Mr. Debashisha Mishra	MA07D003	Operator Theory	Institute for Mathematics and its Applications (IMA), Bhubaneswar Dec. 7 -12, 2009
18.	Mr. G. Krishna Kumar	MA07D005		
19.	Mr. Rajesh Kannan	MA08D007		
20.	Ms. Shani Jose	MA08D004		
21.	Mr. G. Krishnakumar	MA07D005	Functional and Harmonic Analysis	Kerala School of Mathematics Kozhikode Feb. 1- 10, 2010
22.	Mr. M. Rajeshkannan	MA08D007		
Discussion meeting:				
1.	Mr. D. Venku Naidu	MA04D007	Discussion meeting in Harmonic Analysis	NISER, Bhubaneswar Dec. 27 – Jan. 10, 2010
Seminar:				
1.	Mr. G. Sankara Raju Kosuru	MA07D004	Seminar Liapounov theorem: Introduction Measure theory and a fixed point theorem	Department of Mathematics Pondicherry University October 27 – 29, 2009
Instructional Conference/Workshop:				
1.	Mr. T. Karthick	MA05D007	Fifth Annual Instructional Conference of ADMA and Graph Theory Day V	Periyar University Salem June 8-10, 2009
2.	Mr. T. Karthick	MA05D007	Instructional Workshop on Graph Colorings 2010	Kalasalingam University Krishnanakoil Mar.10–15, 2010
Training Programme:				
1..	Mr. G. Sankararaju Kosuru	MA07D004	Optimization Theory and Applications	Delhi University Feb.10-14,2010
Instructional School:				
1.	Ms. Saritha Viswanadhan	MA08D001	Advanced Instructional School in Algebraic Geometry	Bhaskaracharya Prathisthan, Pune Nov. 30 – Dec. 19, 2009
Interacted with Faculty Members:				
1.	Dr. Swadesh Kumar Sahoo	MA08PD001	Interacted with Faculty Members	IISER, Pune February 18-19, 2010

2.7 Names of students / scholars who won outside prizes and awards:

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2.8 Names of students / scholars who won Institute Convocation / Institute Day Prize:

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3. FACULTY AND THEIR ACTIVITIES:**Faculty:**

Name	Qualifications	Major area of specialization (only 3 areas)
Professors:		
P.V. Subrahmanyam[Head]	Ph.D. (IIT Madras)	Non-linear Analysis, Fuzzy sets, Functional Equations, Summability Theory
S.A. Choudum	Ph.D. (IIT Madras)	Graph Theory
S. Kalpakam	Ph.D. (IIT Madras)	Applied Probability and Stochastic Processes, Operations Research
S. H. Kulkarni	Ph.D. (IIT Bombay)	Functional Analysis and Numerical Analysis
P. R. Parthasarathy	Ph.D. (Annamalai)	Applied Probability and Stochastic Models, Mathematical Ecology, Operations Research
M. Thamban Nair	Ph.D. (IIT Bombay)	Applicable Functional Analysis –Spectral Approximation, Operator Equations, Inverse and Ill-posed Equations
R. Usha	Ph.D. (IIT Madras)	Fluid Dynamics
P. Veeramani	Ph.D. (IIT Bombay)	Fixed Point Theorems and their Applications to Problems in Optimization and Best Approximation, Fuzzy Set Theory
Arindama Singh	Ph.D. (IIT Kanpur)	Logic, Numerical Analysis
S. G. Kamath	Ph.D. (IIT Delhi)	Mathematical Physics
S. Ponnusamy	Ph.D. (IIT Kanpur)	Complex Analysis, Function Spaces, Special functions and Conformal Geometry
R. Rama	Ph.D. (Anna University)	Formal Language & Automata Theory / Molecular computing.
Satyajit Roy	Ph.D. (IISc. Bangalore)	Convective Heat and Mass Transfer, Computational Fluid Dynamics
S. Sundar	Ph.D. (IIT Madras)	Computational Fluid Dynamics, Numerical Analysis for Partial Differential Equations, Mathematical Modeling
V. Vetrivel	Ph.D. (IIT Madras)	Non-Smooth Optimization, Fixed Point Theory, Complementarity problems
Associate Professors:		
Y.V.S.S. Sanyasiraju	Ph.D. (IIT Madras)	Computational Fluid Dynamics
K. Swaminathan	Ph.D. (Agra University,	Fluid Dynamics, Ship Hydrodynamics, Mathematical Problems related to Naval Architecture and Ocean Engineering
R. Radha	Ph.D.(IMSC.Chennai)	Harmonic Analysis, Wavelets, Sampling Theory
K.C. Sivakumar	Ph.D. (IIT Madras)	Functional Analysis and Mathematical Programming

Assistant Professors:		
A.K. B. Chand	Ph.D. (IIT Kanpur)	Fractals, Approximation Theory and Wave Lets
A.V. Jayanthan	Ph.D.(IIT Bombay)	Commutative Algebra and Algebraic Combinatorics
Ch. Srinivasa Rao	Ph.D(IISc.Bangalore)	Non-linear Differential Equations
W.B. Vasantha	Ph.D.(RIASM,Chennai)	Group Theory, Application of Algebra, Fuzzy Algebra and Linear Algebra
Sounaka Mishra	I.S.I. Kolkota	Approximation Algorithm / Combinatorial optimization/ Complexity Theory
V. Uma	Ph. D. (IMSC Chennai)	Topology and Geometry of Toric Varieties and Related Spaces
T.E. Venkata Balaji	Ph. D (CMI, Chennai)	Algebraic Geometry and Commutative Algebra
S R Manam	Ph.D. (IISc. Bangalore)	Applied Mathematics
A.J. Shaiju	Ph.D (IISc. Bangalore)	Game Theory, Systems and Control Theory
Kalpana Mahalingam (On Contract)	Ph.D (Univ. of South Florida, Tampa)	Theory of codes, DNA Computing, Combinatorics of words
Balasubramaniam Jayaram(Visiting)	Ph.D. (Sri Sathya Sai Univ.)	Fuzzy logic connectives, Functional Equations, Approximate Reasoning

3.2. Short-term Courses / Workshops / Seminars / Symposia/ Conferences organised by faculty members:

Sl. No.	Co-ordinator(s)	Title	Period
Conference			
1.	A.V. Jayanthan & T.E. Venkata Balaji	National Conference Series on Commutative Algebra & Algebraic Geometry, Department of Mathematics, IIT Madras funded by NBHM	July 6 – 10, 2009
2.	S. Ponnusamy	Intl. Workshop on Harmonic Mappings and Hyperbolic Metrics IIT Madras	Dec. 10 – 19, 2009
3.	S. Sundar	Intl. Workshop on PDE: Models and Numerics, IIT Madras	Dec. 7 – 16, 2009
4.	P.V. Subrahmanyam & S. Sundar	National Symposium on Mathematical Methods and Applications, IIT Madras	Dec. 22, 2009
5.	P.V. Subrahmanyam	Seminar on Writing the Agenda of the Apprentice Scientist from Practising Science to Stimulating Future Scientist Jointly conducted by Department of Mathematics and French Embassy in India	Dec. 4, 2009

3.3. Short-term Courses / Workshops / Seminars / Symposia/ Conferences/Training attended by the faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title of the talk	Name of the workshop	Institution	Period
Symposium:					
1.	S.H. Kulkarni	Wiener's theorem, infinite matrices and Banach algebras	NSMMA 2009	IIT Madras	Dec.22, 2009
2	R. Radha	Lp – multipliers for Hilbert space valued functions on the Heisenberg group		Dept. of Mathematics, Cochin University of Sci. & Tech.	August 12, 2009
3	R, Radha	Fourier multipliers for Sobolev spaces on the Heisenberg group	16 th Ramanujan Symposium on Fourier Analysis and its applications	Ramanujan Institute for Advanced Study in Mathematics Chennai	2009
4	S. Ponnusamy	12 th Romanian-Finnish seminar & International	Complex analysis and related topics	Univ. of Turku Finland	August 18 – 21, 2009
5	R. Usha	Thin film flow down a porous inclined: Dynamics and Stability	Recent Development and New Directions in Thin-Film Flow	Edinburg, U.K.	July 6, 2009 – July 9, 2009
6	P. Veeramani	Fuzzy Metric Spaces and Applications	Applications of Mathematics in Fuzzy Environment	Meenakshi College of Arts & Science for Women. Chennai	August 11, 2009
7	P. Veeramani	Best approximation Theory and Applications	Graph Theory and Analysis	M.D.T. Hindu College, Tirunelveli	August 12, 2009

3.3 Lectures delivered by the faculty at Short-term Courses / Workshops / Seminars / Symposia/ Conferences/Training attended by the faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title of the talk	Name of the workshop	Institution	Period
Short term Programme:					
1.	R. Radha	Fourier Analysis	Seminar for PG Students	Ramanujan Institute for Advanced Studies in Mathematics University of Madras. Chennai	June 16-17, 2009
2.	M. Thamban Nair	Measure Theory & Integration		University of Madras. Chennai	June 19, 2009
3.	M. Thamban Nair	Least-square solutions and regularization of matrix equations	STTP on Recent Trends in Engineering Mathematics	VNIT, Nagpore	July 21-22, 2009
4.	Y.V.S.S.S. Raju	Higher order Compact schemes for Fluid flow problems	STTP on Applied Numerical methods for scientist and engineers (ANMSE-2009)	VNIT, Nagpur	Dec. 21-25, 2009

Sl. No.	Name of Faculty	Title of the talk	Name of the workshop	Institution	Period
International Conference:					
1.	P.V. Subrahmanyam	Some aspects of Newton's method	Interdisciplinary Mathematical & Statistical Techniques (IMST 2009-FIMXVII)	University of West Bohemia Plzen, Czech Republic	May 23 – 26, 2009
2.	S. Sundar	Navier-Stokes-Brinkman System for interaction of viscous waves with a sub-merged porous structure	Recent Advances in Mathematical Sciences and Applications Institute of Advanced Studies	G V P College of Engg. Vizag	Dec. 19 – 22, 2009
3.	M. Thamban Nair	Quadrature based collocation methods for integral equations of the first kind	Computational Methods in Ill-Posed Problems	Sun-Yat Sen University, Guangzhou, China	December 18, 2009
4.	P. Veeramani	Ranking of Fuzzy numbers and Fuzzy Linear Programming	Iranian Operations Research Society	Mazandaran University, Babolsar, Iran	May 20-26, 2009
5.	P. Veeramani		Third Conference on Fixed Point Theory and Applications	Rajabhat University, Loei Thailand	September 4-6, 2009
6.	R. Usha	Wave dynamics on electrified falling films; hydraulic jump behavior to chaotic interfacial oscillations		University of Birmingham, U.K.	June 12, 2009
7.	R. Usha	Thin film down an inclined porous substrate: Dynamics and Stability		University of Loughborough, U.K.	July 2, 2009
8.	Y.V.S.S.Sanyasi Raju		Numerical Analysis and Applied Mathematics (ICNAAM 2009)	Crete Greece	September 17-23, 2009
9.	R. Radha	Non uniform sampling in shift invariant spaces	Analysis & its Applications	I.I.Sc. Bangalore	May 25-27, 2009
10.	A.K.B. Chand		Recent Advances in Mathematical Sciences & Applications	VLIAS-GPV, College of Engg. Visakhapatnam	Dec.19-22, 2009

3.3 Lectures delivered by the faculty at Short-term Courses / Workshops / Seminars / Symposia/ Conferences/Training attended by the faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title of the talk	Name of the workshop	Institution	Period
National Conference:					
1.	Arindama Singh	Resident Expert to teach Linear Algebra/ Foundations of Mathematics	Inter-active Mathematics Training Camps (IMTC)	The Institute of Mathematics and Applications (IMA) Bhubaneswar	September 21-25, 2009
2.	Arindama Singh	Program verification I & II	Applications of Logic	Satyabama Univ.Chennai	Oct. 22-23, 2009
3.	Arindama Singh	Foundation of Mathematics	IMTC	IMA, Bhubaneswar	Oct 3-10, 2009
4.	Arindama Singh	Linear Algebra	MTTS	MTTS, Sambalpur	May 31- June 24, 2009
5.	Arindama Singh	Logic & Applications	LAAL	IIT Kharagpur	Nov. 21-23, 2009
6.	Arindama Singh	Proof in Geometry	IMTC	IMA, Bhubaneswar	Dec.23. 2009
7.	Arindama Singh	Logic in AI	Logic & Appl. To AI	NMIET, Bhubaneswar	Feb.11-13, 2010
8.	S.H. Kulkarni	Approximation numbers of operators on normed linear spaces	75 th Annual Conference of the Indian Mathematical Society	Univ. of Calicut	Dec. 2009
9.	Satyajit Roy	Benjan's Heatline concept titled swaure cavity	Recent Advances in Mathematics and Applications	Burdwan Univ. West Bengal	Jan.13 – 15, 2010
10.	P.V. Subrahmanyam	Newton's Method	Dept. of Mathematics	Pondicherry Univ.Pondichery	August 20,2009
11.	S. Sundar	Optimal die shape for Film Casting	Control and Inverse Problems	I.I.Sc. Bangalore	Dec.17, 2009
12.	S. Sundar	Navier-Stokes-Brinkman System for interaction of viscous waves with a sub-merged porous structure	75 th Annual Conference of the Indian Mathematical Society	Kalasalingam University, Anand Nagar Krishnan Koil Virudunagar	Dec. 27 – 29, 2009
13.	P. Veeramani	Fuzzy Metric Spaces and Applications	Applications of Mathematics in Fuzzy Environment	Meenakshi College of Arts & Science for Women.Chennai	August 11, 2009
14.	P. Veeramani	Best approximation Theory and Applications	Graph Theory and Analysis	M.D.T. Hindu College, Tirunelveli	August 12, 2009
15.	P. Veeramani	On Applications of Best Proximity Pair theorems	Industrial Statistics and Computational Mathematics,	North Maharashtra Univ.Jalgaon, Maharashtra	Jan. 21 – 23, 2010

3.3. Lectures delivered by the faculty at Short-term Courses / Workshops / Seminars / Symposia/ Conferences/Training attended by the faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title of the talk	Name of the workshop	Institution	Period
National Conference:					
16.	Y.V.S.S.S. Raju	Interpolation in multidimensional problems using Radial Basis Functions	Advances in Applied Mathematics	Bharathiar University Coimbatore	March 19, 2010
17.	Y.V.S.S.S. Raju	Gridfree radial basis functions based local scheme for PDE	Dept. of Physics	Pondicherry University	March 26, 2010
18.	R. Radha	Lp – multipliers for Hilbert space valued functions on the Heisenberg group		Dept. of Mathematics, Cochin Univ. of Sci. & Tech.	August 12, 2009
19.	Kalpana Mahalingam	Pseudo Palindrome Closure words	Crptography, Automata and Learning Theory (2009)	MCC, Chennai	April 29, 2009
Summer Training Programme :					
1.	R. Radha	Sequences of functions	Summer Programme I Mathematics	Chennai Mathematical Institute, Taramani	June 18, 2009
2.	T.E. Venkata Balaji	Introduction to Moduli	Summer Training Programme	Ramanujan Institute for Advanced Studies in Mathematics Univ. of Madras.	3 rd week of June, 2009
Pre-Workshop Lectures:					
1.	S. Ponnusamy	Introduction to Harmonic Mappings in Plane	IWHMHM	IIT Madras	Dec. 4 – 7, 2009
Staff Development Programme:					
1.	M. Thamban Nair	On Solving Matrix Equations	Two-week Staff Development Programme “Mathematical application in Engineering”	GVP College of Engineering Vishakhapatnam	June 25-26, 2009
National Meet:					
1.	V. Vetrivel	Research Methodologies	Research Scholars in Mathematical Sciences	IIT Roorkee	Dec. 20 – 23, 2009
Faculty Development Program:					
1.	A.K.B. Chand		Faculty Development program	IIT Madras	Dec.7-9, 2009

3.4. Special Lectures delivered by the faculty in other Institutions:

Workshop/Seminar:					
1.	S.H. Kulkarni	Condition spectrum of an element in a Banach algebra	Functional Analysis	Univ. of Calicut	Feb.27, 2010
2.	S.H. Kulkarni	Approximation numbers of operators on normed linear spaces	75 th Annual Conference of the Indian Mathematical Society		Dec.28, 2009
3.	S.H. Kulkarni	Wiener's theorem, infinite matrices and Banach algebras	Mathematical Methods and Applications NSMMA 2009	IIT Madras	Dec. 22, 2009
4.	S.H. Kulkarni	Banach algebras and approximate solutions of operator equations		IIT Madras	Sep. 2009
5.	P.V. Subrahmanyam	1. Some Existence theorem for PDEs 2. On Iterative Methods for PDEs	PDE: Models and Numerics,	IIT Madras	Dec. 16, 2009
6.	S. Sundar	Vector Integration	Teaching for Engineers	National Institute for Technical Teachers Training and Research, Chennai	August 11-12, 2009
7.	M. Thamban Nair	Ill-Posedness of Compact Operator Equations	Advances in Mathematics Focus on Women Mathematicians	JNU, New Delhi	October 5, 2009
8.	P. Veeramani	Approximation in Normed Linear Spaces	Spl. Semester on Analysis	CMI, Chennai	Jan. 4, 5 & 7, 2010
9.	Y.V.S.S.S. Raju	Finite Volume method and its application to fluid dynamics problems	Advanced Numerical techniques and applications	BHU, Varanasi	June 29 –July 11, 2009
10.	Y.V.S.S.S. Raju	Radial basis function based grid free schemes	Intl. Workshop on PDE: Models and Numerics	Dept. of Mathematics IIT Madras	Dec. 7 – 16, 2009
11.	R. Radha	Fourier Analysis & Applications	Teaching for Engineers	National Institute for Technical Teachers Training and Research, Chennai	August 14-12, 2009
12.	R. Radha	Time frequency analysis	Spl. Semester on Analysis	CMI, Chennai	March 2010
13.	Ch. Srinivasa Rao	Solutions of generalized Burgers Equations	Nonlinear Waves Mathematics Initiative (IMI)	I.I.Sc., Bangalore	April 17, 2009
14.	V. Uma	Equivariant K-theory of group compactifications	Young Researchers	I.I.T. Gandhinagar	Feb.26-28, 2010

3.5. Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Period of Visit	Purpose of Visit
1.	S.G. Kamath	Australia	Nov.21-29, 2009	Paper presentation at FFP10, Perth, University of Western Australia
2.	S.H. Kulkarni	U.S.A.	May 15-June 30, 2009	Private visit
3.	P.R. Parthasarathy	Germany	October 2007 – September 2009	Visiting Professor, Institute for Stochastics, Technical University of Karlsruhe
4.	S. Ponnusamy	Univ. of Turuku Finland	April 16 – July 1, 2009	Private visit Department of Mathematics, University of Turku, Finland
5.	S. Ponnusamy	Univ. of Turuku Finland	August 18 – 21, 2009	12 th Romanian-Finnish seminar & International Conference on Complex analysis and related topics
6.	S. Ponnusamy	Iran	October 4 – 9, 2009	International Symposium and Workshop on Geometric functions theory University of Urmia, Iran
7.	P.V. Subrahmanyam	University of West Bohemia Plzen, Czech Republic West Bohemia	May 23-26, 2009	International Conference on Interdisciplinary Mathematical & Statistical Techniques (IMST 2009 – FIM XVII)
8.	P.V. Subrahmanyam	Germany	May 8-17, 2009	Private visit
9.	P.V. Subrahmanyam	Germany	May 18 – June 18, 2009	Technical University Kaiserslautern
10.	M. Thamban Nair	Guangzhou China	December 18-20, 2009	International Workshop on Computational Methods in Ill-Posed Problems, Sun-Yat Sen University
11.	R. Usha	UK	May 1 – July 31, 2009	Professional Visit Keele University
12.	S. Sundar	Germany	May 4 – June 30, 2009	Professional visit University of Kaiserslautern
13.	K. Swaminathan	Canada	May 29 – July 24, 2009	Private visit
14.	P.Veeramani	Iran	May 20-26, 2009	International Conference of Iranian Operations Research Society, Mazandaran University, Babolsar, Iran
15.	P. Veeramani	Thailand	Sep. 4-6, 2009	Third Conference on Fixed Point Theory and Applications Rajabhat University , Loei,Thailand
16.	Y.V.S.S.Sanyasi Raju	Crete Greece	Sep.17-23,2009	Numerical Analysis and Applied Mathematics (ICNAAM 2009)

3.6. Honours and Awards obtained by faculty:

S.No	Name of faculty	Name of Award	Awarded by	Date of award
1.	P.R. Parthasarathy	Distinguished Professor	DAAD	Oct. 2007-Sept. 2009
2	R. Usha	Royal Society India-US Science Network Scheme fellowship	Royal Society, UK	3 months
3.	S. Ponnusamy	TWAS-UNESCO Associateship	Hanoi Institute of Mathematics Hanoi, Vietnam	3 years from August 2009
4.	Y.V.S.S.S. Raju and G. Chandhini	Best CFD paper of IIT Madras 2008 "Local Radial Function Based Gridfree Scheme for Unsteady Incompressible Viscous Flows"	50 th Institute Day Function, IIT Madras	April 17, 2009
5.	A K B Chand	Marquis who's who in the world	Marquis	2010 Edition
6.	V. Uma	Junior Associate of the International Centre for Theoretical Physics	The Director The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	January 1, 2009

3.7. Books/Monographs authored or co-authored:

S.No	Name of faculty	Title	Publisher	Author/ Co-author
Books				
1.	M. Thamban Nair	Linear Operator Equations: Approximation and Regularization	World Scientific, Singapore, May 2009	
2.	Arindama Singh	Elements of Computation Theory	Published in Springer Texts for Computer Science Series, Springer Verlag, London 2009	
3.	Arindama Singh	CIT 2009 Proceedings (Edited Volume)	Tata Mc.Graw Hill	Prof.S.P. Mohanty, Prof. B. Panda
4.	R. Rama	Introduction to formal languages, Automata Theory and Computation	Pearson Education, India 2009	Prof. Kamala Krithivasan
5.	Ch. Srinivasa Rao	Large Time Asymptotics for Solutions of Nonlinear Partial Differential Equations		Prof. P.L. Sachdev, I.I.Sc. Bangalore
6.	T.E. Venkata Balaji	An Introduction to Families, Deformations and Moduli	University Press of Goettingen, Germany	

1. Fellowships of Academies and Professional Societies:

Sl.No.	Name of Faculty	Year of Admission	Details

Journal Editorial Boards:

Sl.No.	Name of Faculty	Position (Editor/Member)	Journal	
1.	S.H. Kulkarni	Editor (co-opted)	Vol.16 of the Journal of Analysis published by Forum D' Analystes	
2.	P.V. Subrahmanyam	Editor	Journal o Differential Equations and Dynamical Systems	
3.	P.R. Parthasarathy	Advisory Editor	Journal of Information and Optimization Sciences	
4.		Associate Editor	International Journal of Computer Mathematics	
5.		Associate Editor	American Journal of Mathematics and Management Sciences	
6.		Associate Editor	Journal of Decision and Mathematika Sciences	
7.		Member	International Journal of Modern Mathematics	
8.		-do-	Far Eastern Journal of Mathematics	
9.		-do-	Advances in Operations Research	
10.		-do-	International Journal of Future Generation Communication and Networking	
11.			Area, Editor	OPSEARCH
12.		Satyajit Roy	Member	The Journal of the Indian Academy of Mathematics

8) DESIGN AND DEVELOPMENT ACTIVITIES: NIL

2. Brief and specific details of Process/ Instruments/ Equipment/ Software Designed and Developed: NIL

New facilities added and Major equipment procured through procured funds:

Sl.No.	Name of Equipment	Value (Rs. In lakhs)
1.		
2.		

4.3 Patents: NIL

4.3.1 Patents filed: NIL

4.3.2 Patents awarded: NIL

5.0 RESEARCH AND CONSULTANCY:

5.1. Sponsored Research Projects:

Sl.No.	Title	Period	Funding Agency	Amount (Rs.in lacs)	Co-ordinators
New Faculty Scheme:					
1.	Classification and analysis of nonlinear control systems	11.6.2009 to 10.6.2012	ICSR	5.0	Dr. A.J. Shaiju
Sponsored Research Project:					
1.	Graph theoretical approach to communication systems	2008 – 2011	DST	9.45	Dr,S,A, Choudum Dr. Sounaka Mishra
2.	Study of Bargmann transform and sampling theory	3 yrs From 2010	NBHM,DAE	6.2	Dr.S.H.Kulkarni Co-Investigator
3.	Study of Bargmann transform and sampling theory	3 yrs From 2010	NBHM, DAE	6.2	Dr. R. Radha
4.	Modeling of microwave passive components for high power applications-Phase-II	1.5 yrs From 23.8.2009	National Fusion Program, Institute for Plasma Research, Ahmedabad	26.95	Dr.S. Sundar & Dr.V.Subramanian (PH)

5.2. Industrial Consultancy Projects: (on-going only): NIL

5.3. RBIC (only ongoing) : NIL

5.4. Retainer Consultancy: (on-going only) : NIL

Exchange programme with other Universities:

Sl. No.	Programme Name	Name of University	Student Name	Guide Name
1.	DAAD Network Exchange Programme	TU-Kaiserslautern, Germany	Mr. Durga Prasad Chella	Prof.S. Sundar
2	DAAD Network Exchange Programme	TU-Kaiserslautern, Germany	Advanced Numerical Methods, Started on May 2009 for 5 years	Prof.S. Sundar

3. Faculty member participation with other institution under MoU:

1. Dr. S. Sundar : Participating other universities are University of Witwatersrand South Africa and ITB Bandung, Indonesia.

Research Publications:

Total No. Of papers published in Refereed National Journals	...	3
Total No. Of papers published in Refereed International Journals	...	72
Total No. Of papers published in Proceedings of National Conferences	...	2
Total No. Of papers published in Proceedings of International Conferences	...	4

Details:**(d) In Refereed National Journals:**

Sl. No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	P.V. Subrahmanyam and V. Murugan	Smooth solutions for Functional Equation involving series of iterates	J. Combinatorics, Information & System Sciences Vol. 33, 3-4, (2008) pp.187-207.
2.	M.T. Nair	Least-square solution and regularization of matrix equations	Mathematics newsletter, Vol.19, (2009), pp.37-44
3.	Balasubramaniam Jayaram and Radko Mesiar	On Special Fuzzy Implications ^p Fuzzy Sets & Systems	Vol. 160, pp. 2063 – 2085

(b) In Refereed International Journals:

Sl.No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	Surya Prasath, B.V. and A. Singh	A hybrid convex variational model for image restoration	Appl. Math. & Computation, V. 215, No.10, (2010), 3655-3664.
2.	J.K. Sahoo and A. Singh	An error analysis of Larrentier regualization in learning theory	Asian-European Journal of Mathematics, Vol.2, No.1, (2009), 129-140.
3.	S.A. Choudum and R. Indhumathi	On embedding subclasses of height balanced trees in hypercubes	Information Sciences Vol. 179, pp.1333-1347 (2009)
4.	S.A. Choudum and R. Indhumathi	Embedding height balanced trees and Fibbonacci trees in hypercubes	Journal of Applied Mathematics and Computation, Vol. 30, pp.39-52 (2009)
5.	S.H. Kulkarni and D. Sukumar	Almost multiplicative functions on Banach algebras	Studia Mathematica, 197, 2010, pp.93-99
6.	K.P. Deepesh, S.H. Kulkarni and M.T. Nair	Approximation numbers of operators on normed linear spaces	Integral Equations Operator Theory 65 (2009), no.4, pp.529-542.
7.	S.H. Kulkarni, R. Radha and S. Sivananthan	Non-uniform sampling problem	J. Appl.Funct. Anal. 4(2009), no.1, pp. 58-74.
8.	P.R. Parthasarathy, B. Klar and N.Hernze	Lerch limit of Birth and Death Processes	Probability in the Engineering and Informational Sciences, 24, 2010 pages 129-144.
9.	P.R. Parthasarathy and K. Vasudevan	A multiclass Bernoulli feedback Queue with gate mechanism	Future Gen. Comm. Networking 2 (2009), pp. 37 – 36.
10.	P.R. Parthasarathy and R. Sudesh	A State-dependent Queue alternating between arrivals and services	International Journal of Operation Research. 7(2009) pp. 16-30.
11.	P.R. Parthasarathy and R. Sudesh	On the Equivalence of Addition formula of Lattice paths and Chapman-Kolmogorov equation of Birth and Death Processes	Appl.Math.E-Notes 9 (2009), pp. 95-100.

12.	P.R. Parthasarathy	An interesting property of finite birth and death processes	Mathematical Scientist, 34 (2009), pp.51-53.
13.	P.R. Parthasarathy and A Sri Ranga	Generating Birth and Death processes	Stochastic Analysis and Applications, 28 (2010), pp.12-124.
14.	P.V. Subrahmanyam And V. Murugan	Existence of Continuous Solutions for an iterative functional series equation with variable coefficients,	Aequationes Math. Vol. 78, (2009) pp. 167 – 176.
15.	M.T. Nair	On Morozov's discrepancy principle for nonlinear ill-posed equations	Bulletin of Australian Mathematical Society, Vol.29(2009),pp.337-342.
16.	K.P. Deepesh, S.H. Kulkarni and M.T. Nair	Approximation numbers of operators on normed linear spaces	Integral Equations and Operator Theory, Vol. 65 (2009), Pages 529 – 542.
17.	B. Uma and R. Usha	A thin conducting liquid film on a spinning disk in the presence of a Magnetic field: Dynamics and Stability	Transactions of ASME: Journal of Applied Mechanics, 2009 (available online)
18.	G.M. Sisoiev and R. Usha	Wave regimes on power-law fluid film flowing down a porous plane	Int. Journal of Nonlinear Mechanics, 2009 (available online)
19.	I.Mohammed Rizwan Sadiq and R. Usha	Long-wave instabilities in a non-Newtonian film on a non-uniformly heated inclined plane	Transactions of ASME: Journal of Fluids Engineering, Vol. 131, 031202, 1-17, 2009
20.	J.K. Sahoo and A. Singh	An estimate of the is classification error with Hinge and square loss	Int. Journal Comp. & Appl. Math., Vol.5, No.1 (2010), pp.89-102.
21.	Surya Prasath, B.V. and A. Singh	Multichannel Image Restoration using combined channel Information and Robust M-estimation Approach	Int. Journal of Tomography and Statistics, Vol.15, No. F10, (2010) PP.9 – 22.
22.	Tanmay Basak, S.Roy, Pawan Kumar Sharma, I.Pop	Analysis of mixed convection flows within a square with linearly heated side wall(s)	International Journal of Heat and Mass Transfer, Vol.52, Issues 9-10, April 2009 pages 2224-2242
23.	Tanmay Basak, S. Roy, G. Aravind	Analysis of heat recovery and thermal transport within entrapped fluid based on heatline approach	Chemical Engineering Science, Volume 64, Issue 8, 15 April 2009, Pages 1673 – 1686
24.	Tanmay Basak, G. Aravind, S. Roy	Visualization of heat flow due to natural convection within triangular cavities using Bejan's heatline concept	International Journal of Heat and Mass Transfer, Volume 52, Issues 11-12, May 2009, Pages 2824 – 2833
25.	Tanmay Basak, S. Roy, I.Pop	Heat flow analysis for natural convection within trapezoidal enclosures based on heatline concept	International Journal of Heat and Mass Transfer, Volume 52, Issues 11-12, May 2009, pp. 2471-24833`
26.	Tanmay Basak, S. Roy, Pawan Kumar Sharma, I.Pop	Analysis of mixed convection flows within a square cavity with uniform and non-uniform heating of bottom wall	International Journal of Thermal Sciences, Volume 48, Issue5, May 2009, pp. 891-912

27.	R. Ravindran, Satyajit Roy, E. Momoniat	Effects of injection (suction) on a steady mixed convection boundary layer flow over a vertical cone	International Journal of Numerical Methods for Heat & Fluid Flow, Vol.19, pp.432 – 444, 2009
28.	S. Roy, P. Saikrishnan, R. Ravindran	Role of non-uniform slot injection (suction) model on the separation of a laminar boundary layer flow	Mathematical and Computer Modelling, Volume 50, Issues 1-2, July 2009, Pages 45-52.
29.	S. Roy, P. Saikrishnan, Bishun D Pandey	Influence of double slot suction (injection) into water boundary layer flows over sphere	International Communications in Heat and Mass Transfer, Volume 36, Issue 7, August 2009, pp. 646-650
30.	Tanmay Basak, S. Roy, Sandeep Kumar Singh, I.Pop	Finite element simulation of natural convection within porous trapezoidal enclosures for various inclination angles: Effect of various wall heating	International Journal of Heat and Mass Transfer, Volume 52, Issues 19-20, September 2009, pp. 4135 – 4150
31.	S. Roy, P. Saikrishnan, Amit Singh, Bishun D Pandey	Natural convection flow simulation for various angles in a trapezoidal enclosure with linearly heated side wall(s)	International Journal of Heat and Mass Transfer, Volume 52, Issues 19-20, September 2009, pp. 4413 – 4425.
32.	Tanmay Basak,S. Roy, Amit Singh, A.R. Balakrishnan	Natural convection flows in porous trapezoidal enclosures with various inclination angles	International Journal of Heat and Mass Transfer, Volume 52, Issues 19-20, September 2009, pp. 4612 – 4623.
33.	P. Saikrishnan, Satyajit Roy, H.S. Takhar and R. Ravindran	Role of thermally stratified medium on a free convection flow from a rotating sphere	International Journal of Numerical Methods for Heat & Fluid Flow, Vol.20, Number 1,(2010) pp.96 – 110.
34.	E.Momoniat, R. Ravindran, S. Roy	The influence of slot injection/suction on the spreading of a thin film under gravity and surface tension	Acta Mechanica, Vol. 211,(2010) pp. 61-71.
35.	L. Jegannathan and R. Rama	Matrix Splicing System,	Intl. Journal of Computer Mathematics, Vol.87, No.2, Feb.2010, pp.278-309.
36.	S. Sundar et al	Optimal die shape for film casting, Applied Mathematics letters	Vol.22, pp.1598 – 1603, 2009
37.	Y.V.S.S.S. Raju and G. Chandhini	A RBF Based Local Gridfree Scheme for Unsteady Convection-Diffusion Problems,	CFD letters, I, (2), 59-67, 2009
38.	Y.V.S.S.S. Raju, Sekarapandian and S. Vengadesan	A Novel Semi-explicit Spatially Fourth order Accurate Projection method for Unsteady Incompressible Viscous Flows	Numerical Heat Transfer Part A, 56, (8), 665-684, 2009
39.	Y.V.S.S.S. Raju G. Chandhini and Sachin Garg	A note on Two Upwind Strategies for RBF Based Gridfree Schemes to Solve Steady Convection-Diffusion Equations	Intl. Journal Numerical methods in fluids, 61, 1053-1062, 2009
40.	R. Radha and S. Sivananthan	Local reconstruction from a non-uniform sampled data	Appl.Num.Math.59 (2009), pp.393-403.

41.	S.H. Kulkarni, R. Radha and S. Sivananthan	Nonuniform sampling problem	J. applied Funct. Anal. 4, (No.1), (2009), 58-74
42.	R. Radha and S. Sivananthan	Local Reconstruction method and Voice system	Computers and Math. With Appl., 58 (No.1), (2009), pp.74-79.
43.	R. Radha and S. Thangavelu	Holomorphic Sobolev spaces associated to Hermite and special Hermit Semigroups	J. Math.Anal.Appl. 354 (2009), pp.564 – 574.
44.	S. Jitendriya and R. Radha	A characterization of right translation invariant operators from $L_p(H_n, A)$ into $L_q(H_n, A^{**})$	J.Anal.Appl.,7 (no.3), (2009) pp.131-142.
45.	R. Radha and S. Jitendriya	L_p -multipliers for the Hilbert space valued functions on the Heisenberg group	Monatshefte fur Math., 160, (2010) pp.95-107.
46.	S. Jitendriya, R. Radha and D. Venku Naidu	Fourier multipliers for L_p multipliers on the Heisenberg group	Anal. Math., 36(2010), 51-70.
47.	Srinivasa Rao, Ch; And Sachdev P.L.	Large time asymptotics for solutions of nonlinear partial differential equations	Springer monographs in Mathematics, Springer-Verlag, New York
48.	A.J. Shaiju and P. Bernhar	Evolutionarily robust strategies: two nontrivial examples and a theorem	Advances in Dynamic Games, 10:377-395, 2009
49.	M. Ramaswamy and A.J. Shaiju	Construction of approximate saddle point strategies for differential games in a Hilbert space	Journal of Optimization Theory and Applications, 141(2):349-370, 2009
50.	A.J. Shaiju and I.R. Petersen	A formula for the optimal cost in the general discrete time LEQG problem	Automatica, 45:2419-2426, 2009
51.	Drs. Lila Kari and Kalpana Mahalingam	DNA Computing: A Research Snapshot, in M.Atallah and M. Blanton (Eds.), Algorithms and Theory of Computation Handbook	second edition: Special topics and Techniques, BocaRaton, FL: CRC Press,December 2009, pp. 31-1-31-24
52.	Drs. Lila Kari and Kalpana Mahalingam	Watson-Crick Palindromes in DNA Computing	Natural Computing (published Online@ www.springerlink.com/content/675w47606w725233/) 2009
53.	Drs. Lila Kari and Kalpana Mahalingam and Shinosuke Sek	Twin Roots and their Properties	Theoretical Compute Science 410 (24-25) 2009, pp. 2393-2400.
54.	S. Sundar and Lemi Guta	Navier-Stokes-Brinkmann system for interaction of viscous waves with a submerged porous structure	Tamkang Journal of Mathematics, Volume 41, No.3, 2010
55.	B. Bhowmik, S. Ponnusamy and K.-J.Wirths	Concave functions, Blaschke products and polygonal mappings	Siberian Mathematical Journal 50 (2009), No.4, 609-615.
56.	B. Bhowmik, S. Ponnusamy and K.-J. Wirths	Coefficient estimates and the convex hull problem for meromorphic functions	Mathematica (Cluj) 51 (74)(2009), No.1, pp.31-38.
57.	Ch.Chen, S. Ponnusamy and X.Wang	Landau's theorem for certain biharmonic mappings	Appl. Math. Comput.208 (2009) pp.427-433.

58.	Ch.Chen, S.Ponnusamy and X. Wang	General Approach to regions of variability via subordination of harmonic mappings	Math. & Math. Sciences, Volume 2009 (2009), Article ID 736746, 15 pages
59.	Ch.Chen, S. Ponnusamy and X. Wang	Some properties and regions of variability of affine harmonic mappings and affine biharmonic mappings	Math. & Math. Sciences, Volume 2009 (2009), Article ID 834215, 14 pages
60.	M. Obradovic and S. Ponnusamy	Univalence and convolution results associated with Confluent Hypergeometric functions	Houston J. Math. 35(4) (2009), pp.1313-1328.
61.	M. Obradovic and S. Ponnusamy	Coeficient characcterization for certain classes of univalent functions	Bull. Belg. Math.Soc. Simon Stevin 16(2009), pp.251-263.
62.	M. Obradovic and S. Ponnusamy	On certain subclasses of univalent functions and radius properties	Rev. Roumaine Math. Pures Appl., 54(4) (2009), pp.317- 329.
63.	S. Ponnusamy, A. Vasudevarao and M. Vuorinen	Region of Variability for Spirallike functions with respect to a boundary point	Colloquium Mathematicum 116 (2009), No.1, pp. 31-36.
64.	S. Ponnusamy, A. Vasudevarao and M. Vuorinen	Region of variability for certain classes of univalent functions satisfying differential inequalities	Complex Var. Elliptic Equ. 54(2009), No.10, pp. 899-922.
65.	S. Ponnusamy, A. Vasudevarao, and H. Yanagihara	Region of variability for close-to-convex functions-II	Appl. Math. Comput. 215(2009), pp.901 – 915.
66.	S. Sundar, K Selvanayagam Thomas Goetz and V. Vetrivel	Optimal die shape for film casting	Applied Mathematics Letters, Volume 22, pp. 1598-1603, 2009
67.	S. Sundar, M. Kaliyappan and S. Ponnusamy	Formulation of matrix Pade approximation in rectangular full packed storage	Journal of Mathematics Research, Volume 1, pp.184- 192, 2009
68.	S. Sundar, M. Kaliyappan and S. Ponnusamy	Recursive formulation of matrix Pade approximation in packed storage	Computers and Mathematics with Applications, Volume 59, pp.1532 – 1540, 2010.
69.	S. Sundar and Maddu Shankar	Asymptotic analysis of extrapolation boundary conditions for Lattice Boltzmann methods	Computers and mathematics with Applications, Volume 57, pp.13301323,2009
70.	Anuradha J; Veeramani P;	Proximal point wise contraction	Topology Appl. 156 (2009), no. 18, pp. 2942 – 2948.
71.	Antony Eldred A; Anuradha J; Veeramani P;	On the equivalence of the Mizoguchi-Takahashi fixed point theorem to Nadler's theorem	Appl. Math. Lett. 22 (2009), no.10, pp. 1539 – 1542.
72.	Chandrashekar A; Parthasarathy, T.;; Vetrivel, V	On the $\$P_2\$$ and $\$P_2\$$ - properties in the semidefinite Linear complementarity problem	Linear Algebra Appl.432 (2010), no.1, pp.134-143.

(c) In Proceedings of National Conferences:

Sl.No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	Arindama Singh	Ringling Artefact production in blind image deblurring and denoising problems by regularization methods	Proc. ICAPR 2009, Proc. In IEEE Computer Society (2009), 333-336.
2.	M. Obradovi'c, S. Ponnusamy and P. Vasundhra	Univalence and starlikeness of nonlinear integral transform of certain class of analytic functions	Proc. Indian Acad. Sci. (Math. Sci.), 119} (5) (2009), pp.593-610.

(d) In Proceedings of International Conferences:

Sl.No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	S.G. Kamath	An exact calculation of the Casimir energy in two planar models	AIP Conference Proceedings 1150, pp. 402 – 406 (2009)
2.	Y.V.S.S.S. Raju and Nachiketa Mishra	An exponential compact higher order scheme	Proc.of the 7 th Intl. Conf. Of Numerical analysis and applied mathematics, Sept. 18-22, 2009, Rethymno, Crete, Greece, 1174-1177, 2009
3.	A.J. Shaiju and I.R. Petersen	H controller reduction of uncertain systems via rank constrained linear matrix inequalities	Proc. Of Asian Control conference, Hongkong, Aug.27-29, 2009
4.	A.J. Shaiju and I.T. Petersen	On physical reliability of general linear quantum stochastic differential equations with complex coefficients	Proc. Of IEEE Conference of Decision and Control, Shanghai, Dec. 16-18, 2009

1. Distinguished Visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date	Purpose of visit
1.	Prof. Sudarshan Tiwari TU Kaiserslautern, Germany	October 21, 2009	Lecture series: 1)Problem Description and Models for Two Phase Liquids and Droplets October 21, 2009 2)Analytical Methods for Droplet Population Balance Equation October 23, 2009 3) Numerical Techniques for Droplet Population Balance Equation I October 24, 2009 4) Numerical Techniques for Droplet Population Balance Equation II October 25, 2009 5) A Particle-Particle Hybrid Method for Continuum and Kinetic Equations for Small Scale Geometrics October 26, 2009

2.	Prof. Rolf Jeltsch, ETH Zurich, Switzerland	November 25, 2009	Two talks as part of celebration of sixty years of Indo-Swiss Cooperation in Science: <ol style="list-style-type: none"> 1. Leonhard Euler-His Life, Personality Discoveries and their Impact To-day. 2. Numeric for Stiff Equations: History and Essentially Optimal Explicit RK Methods
3.	Prof. M. Ram Murty Queen's University Kinston, Ontario, Canada	Dec. 2, 2009	Gave a lecture on The Riemann Hypothesis
4.	Dr. Antti Rasila Dept. of Mathematics Helsinki University of Technology, Finland	Dec.4 – 7, 2009	Gave two lectures on Introduction to Quasiconformal Mappings in Plane
5.	Prof. Nicole Ostrowsky Universite de Nice Sophia Antripolis Lycee Francais De Pondicherry	Dec. 4, 2009	Conducted a seminar in department and lectured on "Writing the Agenda of the Apprentice Scientist"
6.	Prof.A. Sofi University of Kashmir Jammu & Kashmir	Dec. 30,2009 – Jan. 10, 2010	Gave a lecture on "Certain Aspects of Finite-Dimensionality Phenomena involving Vector Measures"
7.	Prof. R.N. Mohapatra University of Central Florida, U.S.A.	Jan. 22-23, 2010	Gave a lecture on "Gabor Frames and Optimal Dual Frames for Erasures"
8.	Prof. Harald Guenzel F B Mathjematik RWTH Aachen Germany	March 29 – April 10, 2010	Gave the following seminar talks and interacted with faculty members: <ol style="list-style-type: none"> 1. Differentiable Structures in Constrained Optimization 2. Modulus of concavity and Marginal Functions

2. Other Activities:

SEMINAR TALKS:

Sl. No.	Name of the Faculty	Title	Date
1.	Dr. A.J. Shaiju Department of Mathematics I.I.T. Madras	Discrete-Time Linear Quadratic Control Problems	April 17, 2009
2.	Prof. S. Nanda Department of Mathematics I.I.T. Kharagpur	Variational Inequalities and Complimentarity Problems	April 27, 2009
3.	Prof. K.R. Parthasarathy Emeritus Distinguished Scientist Indian Statistical Institute Delhi Centre, New Delhi	Cramer – Rao-Bhattacharyya inequalities for finite level quantum systems	August 13, 2009
4.	Prof. Suresh Govindarajan Dept. of Physics I.I.T., Madras	From counting states to Borchers-Kac-Moody Lie Algebras	August 20, 2009
5.	Prof. Amritanshu Prasad The Institute of Mathematical Sciences, CIT Campus Taramani, Chennai	The Weil Representation for Finite Heisenberg Groups	August 27, 2009
6.	Prof. B.V. Rao Kolkata	Urn models of probability	September 3, 2009

7.	Dr. Sannasiraj Dept. of Ocean Engg. IIT Madras	Wave data assimilation using ensemble error co-variances	September 17, 2009
8.	Dr. (Mrs.) Kanakadurga Anna University Chennai	Sparse Matrix Computations	September 24, 2009
9.	Dr.T.E. Venkata Balaji Dept. of Mathematics IIT Madras	Introduction to Moduli	October 8, 2009
10.	Prof.S.H. Kulkarni Dept. of Mathematics IIT Madras	Banach Algebras and Operator Equations	October 15, 2009
11.	Prof.S. Kesavan Chennai Mathematical Institute Chennai	On the Degenerate Algebraic Ricatti Equation	October 22, 2009
12.	Dr. Dipendra Prasad Professor in Mathematics TIFR (Mumbai)	Modular forms, Motives and L-functions	November 18, 2009
13.	Prof.T.E.S. Raghavan Dept. of Mathematics, Statistics and Computer Science University of Illinois Chicago, U.S.A.	Stochastic games with additive rewards and additive transitions, existence theorems and algorithms	January 5, 2010
14.	Prof. Anantharaman Formerly from Clark Atlanta University, U.S.A.	Not all norm compact sets are the same in an infinite dimensional Banach space	January 6, 2010
15.	Prof. D. Ramachandran California State University Sacramento, U.S.A.	i. A survey of duality theory ii. Connections of duality theory to probabilistic measure theory and onomics	January 21, 2010
16.	Prof. V. Balakrishnan Department of Physics I.I.T. Madras	Recurrences in classical and quantum dynamics	January 28, 2010
17.	Prof. P. Veeramani Dept. of Mathematics IIT Madras	Introduction to Nash Equilibrium Points	February 5, 2010
18.	Dr. Swadesh Kumar Sahoo PDF-NBHM Dept. of Mathematics I.I.T. Madras	Quasi hyperbolic metric and quasiconformal mappings	February 18, 2010
19.	Prof. Murali K Vemuri Chennai Mathematical Institute Chennai	Hermite Expansions and Hardy's Theorems	February 25, 2010
20.	Prof.M. Sundari Chennai Mathematical Institute Chennai	An analogue of Benedick's theorem on Heisenberg group	February 25, 2010
21.	Prof. Amiya Kumar Pani Dept. of Mathematics I.I.T. Bombay	On Industrial Mathematics with a Case Study from Finance	February 22, 2010
22.	Dr. Choudur K Lakshminarayanan Intelligent Information Management Lab, HP Labs, Austin, Texas, U.S.A.	Quasi hyperbolic metric and quasi conformal mappings	March 10, 2010
23.	Dr. Rahul Marathe Dept. of Management Studies IIT Madras	Use of Exotic Financial Options to Solve a Capacity Expansion Problem	March 11, 2010

24.	Prof. K. Parthasarathy Director Ramanujan Institute for Advance Study in Mathematics, Chennai	Unit Disc	March 18, 2010
25.	Prof. G.P. Youvaraj Ramanujan Institute for Advanced Study in Mathematics Chennai	Pseudo Analytic Functions	March 25, 2010

Ph.D. Viva – Voce Examination:

Sl. No.	Name of the Scholar	Title of the thesis & Viva date
1.	Ms. J. Anuradha	A Study on the Existence of Best Proximity Points and Fixed Points April 27, 2009
2.	Mr. Bappaditya Bhowmik	Study of Certain Subclasses of Meromorphic Univalent Functions July 2, 2009
3.	Mr. L. Jegannathan	Abstraction of Splicing, Self Assembly and Crossover Language to Axiom Approach July 24, 2009
4.	Mr. Maddushankar	Asymptotic Analysis and Applications of Boundary conditions for Lattice Boltzmann Methods September 18, 2009
5.	Mr. R. Rajkumar	Studies on Codes and Graphs with Rosenbloom-Tsfasman Metric February 12, 2010
6.	Mr. V.B. Surya Prasath	Regularization and Partial Differential Equations Based Image Restoration March 21, 2010

Ph.D. Seminar Talks:

Sl.No	Name of the scholar	Title	Date
1.	Mr. A. Chandrashekar	Semi-definite Linear Complementarity Problems	May 18, 2009
2.	Mr. Jajati Kesari Sahoo	The Role of Tikhonov Regularization in Learning Theory & An Error Analysis of Lavrentiev Regularization in Learning Theory	June 3, 2009 & June 8, 2009
3.	Mr. Vasudevarao Allu	Region of Variability for Functions with Positive Real Part	July 2, 2009
4.	Mr. R. Rajkumar	On Rosenbloom-Tsfasman spaces	July 21, 2009
5.	Mr. V.B. Surya Prasath	Regularization and PDE based methods for Image Processing: Part – II	July 22, 2009
6.	Mr.A. Chandrashekar	On the Semi-definite Linear Complementarity problems for special linear transformations	August 12, 2009
7.	Mr. Lemi Guta Enyadene	Wave-Porous Structure Interaction: Modeling, Analysis and Simulation	August 26, 2009
8.	Mr. Ramakrishna Nanduri	On the lengths of quotients of ideals and depths of fiber cones	September 22, 2009
9.	Mr. K.P. Deepesh	Approximation Numbers of Operators on Normed Linear Spaces	October 1, 2009
10.	Mr. Venku Naidu Dogga	Holomorphic Sobolev spaces on the complexified Heisenberg group and frames in operator-Fock spaces	October 21, 2009

11.	Mr. Sudhakar Matle	Heat Transfer Modeling on Isotech Saturn 877	October 28, 2009
12.	Mr. Manoj Kumar Yadav	Solutions of some Nonlinear Partial Differential Equations	November 17, 2009
13.	Mr. T. Karthick	First-Fit Coloring and Maximal cliques in two classes of graphs	November 26, 2009
14.	Mr. Manoj Kumar Yadav	Self-Similar Solutions of a Generalize Burgers Equation Involving p-Laplacian	December 1, 2009
15.	Mr. E. Satyanarayana	Solutions of Some Generalized Burgers Equations	December 7, 2009
16.	Mr. P. Ravishankar	Error Analysis for a continuous Newton type method for nonlinear ill-posed problems	December 8, 2009

6. Other Activities of the Department/Centre:

Sl.No	Name of the Faculty	Activity
1.	Arindama Singh	Program chair for Technical program committee for ICIT 2009 from 21.12.09 to 24.12.09
2.	P.R. Parthasarathy	Has rejoined duty on 7 th September, 2009 after visiting University of Karlsruhe, Germany
3.	P.R. Parthasarathy	Has been nominated by the Senate to serve the Institute Board
4.	P.R. Parthasarathy	Gave keynote address on Applied Stochastic Models in the annual research Conference at Karpagam University, Coimbatore on 10.12.09
5.	S. Ponnusamy	Discussed with Dr. Anguraj at PSG Arts College & visited NIT Trichy
6.	R. Radha	To conduct the Ph.D Viva-voce at Cochin University on 12.08.09
7.	R.Rama	Paper presentation of the National Conference Cryptography, Automata and Learning Theory (2009) at MCC, Chennai on April 29, 2009
8.	R.Rama	Attended a Ph.D. DC meeting, Dept. Of Mathematics at Vellore Institute of Technology, Vellore on March 10, 2010.
9.	R.Rama	Resource person of the Workshop on Automata Theory at BPUT, Bhubaneshwar on March 16, 2010
10.	Y.V.S.S. Sanyasi Raju	To attend a project meeting on 17.11.09 at NPOL, Kochi.
11.	Ch. Srinivasa Rao	Attended a Doctoral Committee meeting at VIT University, Vellore on January 29, 2010.
12.	S R Manam	Visited IIT Kharagpur during June 25-30, 2009 for academic discussions.
13.	P.V. Subrahmanyam	Head of the Department has been invited to be on the nomination council of the Infosys Prize, instituted by the Infosys Science Foundation. To serve as a member of the Advisory Committee for UGC/SAP programme of the Department of Mathematics, Pondicherry University

14.	P.V. Subrahmanyam	To attend an Advisory Committee Meeting (UGC-SAP) at Pondicherry University on 20.08.09 as UGC Nominee
15.	P.V. Subrahmanyam	Attended the HOD/Task Force meeting at IIT Hyderabad on 22 nd October, 2009
16.	P.V. Subrahmanyam	Attended a Ph.D. Viva-voce exam at University of Hyderabad on March 10 and 11, 2010.
17.	P.V. Subrahmanyam	Invited to be a Nomination Council Member for the award of Infosys Prize 2010 instituted by the Infosys Science Foundation
18.	S. Sundar	Expert Member, Selection Board IIST, Thiruvananthapuram on January 17, 2010.
19..	M. Thamban Nair	Attended consultation meeting on Academic programs of Central University (Kerala) at Kochi on January 27, 2010.
20.	P. Veeramani	Served as an Examiner for Ph.D Viva-voce Examination at University of Hyderabad on April 24, 2009.
21.	P. Veeramani	Attended Selection Committee meeting at Anna University on 5 th October, 2009
22.	P. Veeramani	Conducted a Ph.D. Viva-voce examination at IIT Kanpur on January 25,2010
23.	V. Vetrivel	Conducted a Ph.D. Viva-voce at IIT Delhi on 8.7.09.
24.	V. Vetrivel	Attended NPTEL Co-ordinators' Meeting at I.I.T. Delhi on 12.09.2009 and 13.09.2009
25.	Dr. Balasubramanian Jayaram, Asst. Prof. (Visiting)	He has resigned his present position and taken up a permanent post as Assistant Professor at IIT Hyderabad (Mentored by IIT Madras)
26.	Swadesh Kumar Sahoo and Mr. Vasudevarao Allu	To carry out research work at the University of Turku, Finland from August 2 – September 30, 2009
27.	Mr. Vasudevarao Allu and Dr. Swadesh Kumar Sahoo	Have rejoined duty on 1 st October 2009 after research visit at University of Turku, Finland.

6.3. Socially relevant activities carried out by the Department:

The Department of Mathematics and AG Technomathematik, Technische Universitaet Kaiserslautern, Germany have mutually agreed to set up a network in the scientific area of Applied Mathematics and Mathematical Modelling. This will enable intensive collaboration between IIT Madras and TU-Kaiserslautern in terms of Annual Workshops, Faculty / Student Exchange and Joint Modelling Seminars.

6.4. Major infrastructure development made in the Department: