

Research Publications (Since 1990)

1. Approximate Solvability of Semilinear Operator Equations (Jointly with N. Sukavanam), *Nonlinearity* 3 (1990).
2. Abstract Semilinear Controllability and its Applications to Finite and Infinite Dimensional Control Problems, Intl. Conf. On "Differential Equations Theory and Applications in Stability and Control", University of Colorado (1989), Ed. Saber Elyadi, Marcel Dekker, (1991).
3. Local Stability Properties of a Feed-Back System - Deterministic and Random, (Jointly with T.E. Govindan), *Stochastic Analysis and Applications*, Vol. 8, No. 4, (1990).
4. Numerical Solvability of Hammerstien Integral Equations of Mixed Type (jointly with M. Ganesh), *IMA Journal of Numerical Analysis*, Vol. 11 (1991).
5. Controllability of Predator-Prey Systems (Jointly with Raju K. George), *Jour. Opt. Theory and Appl.*, Vol. 74(2), 1992.
6. Optimality of Nonlinear Control System, (jointly with M. Ganesh), *Jour. Of Nonlinear Analysis - Theory, Methods & Applications*, Vol. 16 (1991).
7. Stability and Optimal Control of Stochastic Functional Differential Equations with Memory (Jointly with T. E. Govindan), *Numer. Funct. Anal. And Optimiz.*, 13(3&4), (1992).
8. Approximate Solvability of Nonlinear Equations and Related Results in Control Theory , *Proceedings of World Congress of Nonlinear Analysts*, Walter de Gruyter, 1996.
9. On A Control Problem Involving Attractor Of A Dynamical System, *Numer. Funct. Anal. And Optimiz.*, 17(5&6), (1996).
10. On Optimization of PID Governor for Diesel Engines (Jointly with H. M. Dhariwal and Dilip Malkhede), *Mathematical Modeling and Analysis*, Vol 17, No: 1 (2002), pp. 135-150.
11. Approximation of Exact Controllability Problem Involving Parabolic Differential Equations, *Abstract of International Congress of Mathematics*, Beijing, August, 2002.
12. Industrial Mathematics Group at IIT Bombay, *Proceedings of International Conference on Nonlinear Systems: Modeling, Simulation and Applications*, Published by Science College, Nanded, 2003.
13. Matrix Optimization Algorithms (Jointly with M. K. Ramaprasad.), Preprint(2003).
14. Approximation of Exact Controllability Problem Involving Parabolic Differential Equations (Jointly with Anil K. Pundir), *IMA Jour. Mathematical Control and*

Information(2005), Vol. 22.

15. On Approximation Theorems for Controllability of Nonlinear Parabolic Problems (jointly with Anil Pundir and Amiya K Pani), IMA Jour. Mathematical Control and Information (June 2006).
16. Optimal Control Problems Involving Parabolic and Elliptic Differential equations, Advances in Computational Optimization and its Applications, University Press(India) Pvt. Ltd., 2007.
17. Optimal Control System Governed by Nonlinear Equations, Nonlinear Studies, 2009.

Book Publications

1. Industrial Mathematics, Narosa Publishing House Pvt., Ltd (2006),
Proceedings of the International Conference held at IIT Bombay,
December, 2002. Ed. M. C. Joshi, A. K. Pani, S. V. Sabnis
2. Differential Equations – Modern Perspective, Narosa Publishing House/ Alpha
Science International Ltd. (2006).
3. Scientific Computing -Theory and Practice; Editor, Proceedings of Instructional
Workshop, G B Pant University of Agriculture and Technology (2006).
4. Optimization – Theory and Practice, Narosa Publishing House/ Alpha
Science International Ltd. (2004).
5. MATHEMATICAL THEORY OF CONTROL, Marcel Dekker, 1992
Proceedings of the International conference held at IIT, Bombay, December
10-15, 1990. Ed. M.C. Joshi and A.V. Balakrishnan.
6. SOME TOPICS IN NONLINEAR FUNCTIONAL ANALYSIS,
(Jointly with R.K. Bose), Wiley Eastern Ltd., Delhi (1985).
7. METHODS OF MATHEMATICAL PHYSICS (Jointly with R.K. Bose),
Tata McGraw-Hill Publ. Co., Delhi (1984).
8. COMPUTER ORIENTED APPROACH TOWARDS CALCULUS,
Lecture Notes, IIT Bombay, 1986.
9. WORKSHOP ON INDUSTRIAL MATHEMATICS,
Proceedings of the Workshop held at University of Baroda, July 6-9, 1993,
M.S. University, Baroda.
10. UNESCO Regional Instructional Workshop on Industrial Mathematics,
Proceedings, IIT Bombay, December 2-6, 2002.

Symposium, Seminars, Invited Talks (Since 1990)

1. World Congress of Nonlinear Analysis, Tampa, Florida, August 19-26, 1992. Invited talk on Approximate Solvability of Nonlinear Equations and Related Results in Control theory.
2. Indo-French Workshop on Partial Differential Equations and Nonlinear Analysis, June 28-July 2, 1994. Invited talk on Controllability of Nonlinear Systems.
3. World Congress of Nonlinear Analysts, University of Catania, Italy, July 19 - 26, 2000. Invited talk on Doing Industrial Mathematics via Optimization, DAE, CAGD and Market Forecasting.
4. International Conference on Nonlinear Systems, Modeling, Simulation and Applications, December 26-29, 2000, Nanded, India. Invited talk on “Industrial Mathematics Group, IIT Bombay”.
5. International Congress of Mathematicians, Beijing, 2002. Participation on Invitation by Chinese Mathematical Society.
6. International Conference on Dynamical Systems and Applications, Atlanta, May 21 – 24, 2003, Invited talk on Matrix Optimization Algorithms.
7. International Conference on Industrial Mathematics, December 2004, Invited Talk on “Some Food for Thought for Mathematicians”.
8. Workshop on Theory of Optimization and Applications, December 2005, IIT Kanpur, Invited Talks on “Optimization and Algorithms”.
9. Summer School on “Mathematics Education Through Instructional Workshop”, June 2006, Kumaun University, Nainital, Keynote Address on “Higher Education with Modern Perspective”.
10. Instructional Workshop on “Scientific Computing - Theory & Practices”, G B Pant University of Ag. & Tech. Pantnagar, Uttaranchal, November 2006, Lecture Series on “Control Theory”.
11. Indo-German Workshop on “Automatic Differentiation, Optimal Control and Adaptivity with Applications, Industrial Mathematics Group, November 2006., Invited Talk on “Optimal Control of Systems Governed by Elliptic Partial Differential Equations”.
12. Indo-US Workshop on “Computational Optimization and Analysis of Systems” IIT Kanpur, December 2007, Invited Talk on Optimal Control of Systems Involving Parabolic and Elliptic Differential Equations.

13. Uttarakhand Science Congress, Nainital, December 2007, Invited Talk on Integrated Approach to Science Education with Global Perspective.
14. Study Group Meeting On Industrial Problems at IIT Roorkee, March 2009, Talk on the Activities of Industrial Mathematics Group(IITBombay) .
15. Mathematical Perspective of Control Theory, Pre-ICM Workshop, Kumaun University, March, 2010 .
16. Series of talks on Mathematical Theory of Control, IIT Guwahati, March, 2012 .
17. Lecture Series on Linear Algebra at IMA, Bhvaneswar, Undergraduate Programme on Differential Equations under the auspices of DST's NPDE Programme, May 2012 .