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- EXPERIENCE
- ◇ [2006 Aug.-date] *Head*, Centre for Distance Engineering Education Programme, IIT Bombay.
  - ◇ [1998 Oct.-date] *Professor*, IIT Bombay.
  - ◇ [2004 July-2005 Aug.] *Head, Application Software Cell*, IIT Bombay.
  - ◇ [2003 July-2004 June] *Visiting Professor*, University of Alberta.
  - ◇ [2001 May-2003 May] *Associate Dean, R&D*, IIT Bombay.
  - ◇ [1997 June-1998 Nov.] *Lovraj Kumar Industrial Exchange Fellow*, NOCIL, Mumbai.
  - ◇ [1994-98 Oct.] *Associate Professor*, IIT Bombay.
  - ◇ [1988-94] *Assistant Professor*, IIT Bombay.
  - ◇ [1985-87] *Research Associate*, Chemical Process Modelling and Control Research Center, an NSF sponsored Industry-University cooperative consortium located at Lehigh University.
- EDUCATION
- ◇ Rice University, Houston, TX.  
Ph.D, Chemical Engineering, May 1985.  
Master of Electrical Engineering, May 1985.
  - ◇ IIT Madras, Chennai, India  
B.Tech in Chemical Engineering, June 1980.
- PHD'S GUIDED
- ◇ R. K. Majumdar, Feedback driven dissemination of dynamic data: Towards providing QoS guarantees in wide area networks, Dept. of Computer Science and Engineering, July 2008.
  - ◇ A. M. Katariya, Nonlinear dynamics of reactive distillation for synthesis of TAME, Dept. of Chemical Engineering, February 2008.
  - ◇ J. Agrawal, Equivalent dynamics and efficient algorithms for a class of discontinuous differential algebraic equations in sliding mode, Dept. of Chemical Engineering, November 2003.
  - ◇ V. Ramesh, Modelling and simulation of emulsion polymer reactors, Department of Chemical Engineering, IIT Bombay, May 2003.
  - ◇ V. Ryali, Performance analysis of uncertain nonlinear systems, Systems and Control Engineering, IIT Bombay, June 2000.
  - ◇ S. Hanumantha Rao, A software architecture for modelling and simulation of continuous engineering systems, Department of Computer Science and Engineering, IIT Bombay, September 1998.
  - ◇ A. V. Manickam, RK methods for DAEs resulting from the spatial discretization of some nonlinear evolution equations, Department of Mathematics, IIT Bombay, August 1998.
- AWARDS
- ◇ Best Paper Presentation Award for “[Control of a high index DAE system through a linear control law](#)”, American Control Conference, Anchorage, 8 May 2002.

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- ◇ Lovraj Kumar Industry-Academia Exchange Fellowship, April 1997.
- ◇ Best Poster Award for “[An Integrated Simulation Environment](#)”, International Conference on Advances in Chemical Engineering, 11-13 Dec. 1996, IIT Madras.
- ◇ Rice University Fellowship, Aug. 1980 - June 1984.
- ◇ National Merit List, Government of India, May 1974.

BOOKS

- ◇ (K. M. Moudgalya), “Digital Control”, John Wiley & Sons, Chichester, July 2007.
- ◇ (M. C. Joshi and K. M. Moudgalya), “Optimization: Theory and Practice”, Narosa Publishers, New Delhi, 2004,  $\alpha$ -Interscience, London, 2004.

PAPERS

- ◇ (K. M. Moudgalya, D. B. Phatak and R. K. Shevgaonkar), [Engineering education for everyone: A distance education experiment at IIT Bombay](#), Frontiers in Education, 22-25 October 2008, Saratoga Springs, New York.
- ◇ (V. Mathur, V. Apte and K. M. Moudgalya), Optimized admission control for web applications in environments with varying available capacity. Second international conference on the virtual computing initiative (ICVCI 2), 15-16 May 2008, Research Triangle Park, North Carolina.
- ◇ (R. Gundecha, V. Apte and K. M. Moudgalya), Optimizing resource allocation for multi-tier applications in virtualized environment. Second international conference on the virtual computing initiative (ICVCI 2), 15-16 May 2008, Research Triangle Park, North Carolina.
- ◇ (S. Duttgupta, K. Ramamritham, P. Kulkarni and K. M. Moudgalya), [Tracking dynamic boundary fronts using range sensors](#), Fifth european conference on wireless sensor networks (EWSN 2008), Bologna, Italy.
- ◇ (S. Shah, K. M. Moudgalya and K. Ramamritham), [Feedback Control of Internet Applications involving the Tracking of Dynamic Data](#), 17th IFAC world congress, 6-11 July 2008, Seoul, Korea.
- ◇ (B. Chandu, R. Pant and K. Moudgalya), Modeling and Simulation of a Precision Navigation System using Pseudolites Mounted on Airships, 7th AIAA Aviation Technology, Integration and Operations Conference (ATIO), 18-20 September 2007, Belfast, Northern Ireland.
- ◇ (K. M. Moudgalya), [Discrete time control: a first control course?](#), Advances in control education, IFAC, Madrid, 21-23 June 2006.
- ◇ (S. Nigam and K. M. Moudgalya), [Equivalent dynamic solution of an industrial HDPE slurry reactor](#), PSE/ESCAPE, Garmisch-Partenkirchen, 9-13 July 2006.
- ◇ (H. V. Kulkarni and K. M. Moudgalya), [A novel procedure to compute Smith form](#), National Conference on Control and Dynamic Systems, IIT Bombay, 27-29 January 2005.
- ◇ (V. Ryali and K. M. Moudgalya), [Practical stability analysis of uncertain nonlinear systems](#), National Conference on Control and Dynamic Systems, IIT Bombay, 27-29 January 2005.
- ◇ (A. Katariya, S. Mahajani and K. M. Moudgalya), [Dynamic simulation of reactive distillation column for TAME synthesis](#), Indo - US Joint Conference, Mumbai, December 2004.
- ◇ (K. M. Moudgalya), [Modelling for control and performance improvement of an industrial high density polyethylene reactor](#), Invited paper, IEEE international symposium on intelligent control, Taipei, 2-4 September 2004.
- ◇ (K. M. Moudgalya and S. L. Shah), [A polynomial approach based first digital control course](#), IEEE conference on computer aided control systems design, Taipei, pp. 190-195, 2-4 September 2004.
- ◇ (V. Ryali and K. M. Moudgalya), [Transfer function modelling and robust control of Chylla-Haase challenge control problem](#), Dynamics and Control of Chemical Processes (DYCOPS), Boston, July 2004.

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- ◇ (R. K. Majumdar, K. M. Moudgalya and K. Ramamritham), [Adaptive Coherency Maintenance Techniques for Time-Varying Data](#), The 24th IEEE International Real-Time Systems Symposium (RTSS), Cancun, 3-5 December 2003.
- ◇ (N. Rangaraj, A. Ranade, K. M. Moudgalya, R. Naik, C. Konda and M. Johri), [A simulator for estimating railway line capacity](#), Conference of Asia Pacific O. R. Societies, New Delhi, 8-10 December 2003.
- ◇ (J. Agrawal, K. M. Moudgalya and A. K. Pani), [Sliding Motion of Discontinuous Dynamical Systems Described by Differential Algebraic Equations](#), SAFEPROCESS, IFAC 2003, Washington DC, 8-10 June, 2003.
- ◇ (A. G. Rapsang, A. Saha, K. M. Moudgalya and G. Sivakumar), [A software environment for modelling and simulation](#), Proceedings of International Symposium on Process Systems Engineering and Control, pp. 247-252, 3-4 Jan. 2003, IIT Bombay.
- ◇ (V. Ryali and K. M. Moudgalya), [An improved nonlinear robust control scheme](#), Proceedings of International Symposium on Process Systems Engineering and Control, pp. 361-364, 3-4 Jan. 2003, IIT Bombay.
- ◇ (J. Agrawal and K. M. Moudgalya), [Equivalent dynamics for soft drink process described by discontinuous differential algebraic equations in sliding mode](#), in Proceedings of ICIWIM, IIT Bombay December 2002.
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- ◇ (P. Vora, K. M. Moudgalya and A. K. Pani), [Control of a high index DAE system through a linear control law](#), in Proceedings of American Control Conference, Anchorage, Alaska, May 8-10, 2002, pp. 465-470.
- ◇ (J. Agrawal, K. M. Moudgalya and A. K. Pani), [Nonlinear gas-liquid system in sliding motion](#), in Int. Conf. on Recent Trends in Differential Equations and Dynamical Systems, IIT Kanpur, December 2001.
- ◇ (V. Ryali and K. M. Moudgalya), [Robustness analysis of uncertain nonlinear systems](#), Presented in Session FA-06, American Control Conference, 28-30 June, 2000, Chicago.
- ◇ (A. Tihaya, M. Rao, V. Goyal, K. M. Moudgalya and R. Rengaswamy) "Automatic generation of Fluid Catalytic Cracking Unit (FCCU) models", CHEMCON, Chandigarh, 1999.
- ◇ (R. Manchanda, K. Venkateswarlu, S. Sourav and Kannan Moudgalya), "Theoretical Analysis of Mode of Heptanol Action on Smooth Muscle Synaptic Potentials", IEEE Engineering in Medicine and Biology Society Meeting, Hong Kong, pp. 3100-3103, Oct. 1998.
- ◇ (V. Ramesh, V. Ryali Kannan Moudgalya and J. Giridhar), "A dynamic model for MWD in emulsion polymerization", World Congress on particle technology, Brighton, UK, July 1998.
- ◇ (V. Ramesh, V. Ryali Kannan Moudgalya and J. Giridhar), [A dynamic model for conversion in emulsion polymerization](#), 5th IFAC Conference on Dynamics and Control of Process Systems, Korfu, June 1998.
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- ◇ (with V. Ramesh and V. Ryali), "A Dynamic Model for MWD in Emulsion Polymers", in Advances in Chemical Engineering, Ed. Y. B. G. Varma and others, pp. 411-416, Allied Publishers, New Delhi, 1996, Proceedings of the International Conference on Advances in Chemical Engineering, 11-13 Dec. 1996, Madras.

- ◇ (with S. Hanumantha Rao, G. Sivakumar and K. V. Nori), [An Integrated Simulation Environment](#), in Advances in Chemical Engineering, Ed. Y. B. G. Varma and others, pp. 307-312, Allied Publishers, New Delhi, 1996, Proceedings of the International Conference on Advances in Chemical Engineering, 11-13 Dec. 1996, Madras.
- ◇ (with V. Sreenivas, H. B. Aradhye and G. Sivakumar), [Quantifying Goodness of Initial Guesses for Automatic Selection of Nonlinear Algebraic Equation Solvers](#), 14th IMACS World Congress on Computational and Applied Mathematics, July 11-15, 1994, Atlanta.
- ◇ “Application of Regulator Theory in Control of a Simulated Distillation Column”, paper presented in the National Symposium on Modelling and Simulation, I. I. Sc., Bangalore, July 1989.
- ◇ “Mathematical modelling of a High Density Polyethylene Reactor”, Mathematics in Industry, A Workshop organised at IISc, Jan. 5-9, 1998.
- ◇ “Mathematical modelling in chemical engineering”, International Conference on Numerical and Stochastic Modelling, Utkal University, Bhubaneswar, Jan. 5-7, 1997.
- ◇ (with V. Sreenivas and R. Patwardhan), “A Priori Estimation of Effort Required to Solve Nonlinear Algebraic Equations”, Chemcon 94, I.I.T. Kharagpur, 14-17 Dec. 1994.
- ◇ (with V. Ryali), “Modelling of a Semibatch Polymerisation Reactor for Robust Control”, Chemcon 94, I.I.T. Kharagpur, 14-17 Dec. 1994.
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- ◇ (A. M. Katariya, K. M. Moudgalya and S. M. Mahajani), [Non-linear dynamic effects in reactive distillation for synthesis of TAME](#), I&EC Research, Vol. 45, 4233-4242, 2006
- ◇ (J. Agrawal, K. M. Moudgalya and A. K. Pani), [Sliding motion of discontinuous dynamical systems described by semi-implicit index one differential algebraic equations](#), Chemical Engineering Science, Vol. 61, 4722-4731, 2006.
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- ◇ (J. Agrawal, K. M. Moudgalya, A. K. Pani), [Sliding motion and stability of a class of discontinuous dynamical systems](#), Nonlinear Dynamics, Vol. 37, pp. 151-168, 2004.
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- ◇ (N. M. Rao, P. Vora and K. M. Moudgalya), [PID control of DAE systems](#), I&EC Research, Vol. 42, 4599-4610, 2003.
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- ◇ (K. M. Moudgalya), [A class of discontinuous dynamical systems III. Degrees of freedom analysis](#), Chemical Engineering Science, Vol. 56, 5443-5447, 2001.
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- ◇ (Y. Makwana, K. M. Moudgalya and D. V. Khakhar), [Modeling of Industrial Styrene Polymerization Reactors](#), Polymer Engineering and Science, *37*, pp. 1073-1081, 1997.
- ◇ (K. M. Moudgalya, W. L. Luyben and C. Georgakis), "A Dual-Pulse method for Modelling Processes with Large Time Constants", I & EC Research, *26*, pp. 2498-2501, 1987.
- ◇ (K. Zygourakis and K. M. Moudgalya), "Discrete Fourier Transforms and Their Application to the Pulse Chromatography Method", Chem. Eng. Comm., *61*, pp. 107-125, 1987.
- ◇ (K. M. Moudgalya and K. Zygourakis), "A Coal Pyrolysis Reactor System with Fast On-line Composition Analysis by Gas Chromatography", Chem. Eng. Comm., *49*, pp. 165-179, 1986.

TECHNICAL REPORT ◇ (K. M. Moudgalya), [Polynomial Computations in MATLAB](#), Technical Report, IIT Bombay, Nov. 1996.

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