

ANNUAL REPORT 2011-2012

(April 1, 2011 – March 31, 2012)

Chemical Engineering

Introduction

The Department of Chemical Engineering has a strong focus on excellence in education and research. The Department has a dynamic faculty with a wide range of research specializations. Research activities in the Department are supported by excellent research students (Ph.D., M.Tech. and Dual Degree), very competent technical staff, and good experimental and computational facilities.

The recruitment of students into the Ph.D. programme continues to show an uptrend and has contributed to the increase in research activity in the Department. The Department also received good funding for sponsored projects this year. The total numbers of International journal publication this year is around 98. This is equivalent to about 2.88 numbers of papers per faculty in a year.

The Department-Industry interactions were multifold this year including continuing education courses (both open and in-house programmes), consultancy, and technology transfer.

The activities and achievements of the Department for the year 2010-2011 are given in the following sections.

Academic Programmes

Degrees Awarded

B.Tech.	:	67
Dual Degree (B.Tech., M.Tech.)	:	24
M.Tech.	:	34
M.S. (by Research)	:	00
Ph.D.	:	12

R&D activities

The department is involved in a variety of frontier and traditional areas in chemical engineering research, under the broad areas of:

Biological Systems Engineering

Energy & Environment

Materials Engineering

Process Systems Engineering

Reactor Engineering

Transport Phenomena and Complex Fluids

The department received grants from various sources towards many new projects during the year apart from various ongoing projects.

The Department received grants from various sources towards many new projects during the year apart from various ongoing projects. The summary of which is as follows:

Sponsored Research Projects (Ongoing)	78
Sponsored Projects (New)	20
Sanctioned Amount (2010-11)	Rs. 16,89,52256/-
Completed Projects	10
Faculty involved	32

The details of these projects is given in the following table

Project Title	Agency Name	Project Status
Synthesis and Use of Nanoparticles for Innovative Water Treatment Technologies	An Autonomous Research & Development Centre of DST, Govt. of INDIA.	Ongoing
CFD modeling and simulation of chemical vapor deposition reactor for production of high purity silicon ingots	BOARD OF RESEARCH IN NUCLEAR SCIENCES	Ongoing
Systems Biology of Protein Secretion in Recombinant Mammalian Cell lines.	DEPTT OF BIOTECHNOLOGY	Ongoing
Engineering a Novel Bioreactor and Cell Sorter for Pluripotent Stem Cell Culture	DEPTT OF BIOTECHNOLOGY	Ongoing
DBT Committee visit for Project Proposal Titled : Nano Composite hollow fiber membranes and biomaterials for hemodialysis and reconstructive medicine	DEPTT OF BIOTECHNOLOGY	Ongoing
Bioprospecting for Alcoholdehydrogenases for Chiral Synthesis	DEPTT OF BIOTECHNOLOGY	Ongoing

Multivariable Control Scheme for Gas Turbines using the Model Predictive Control Strategy	Defence Research & Development Organisation	Ongoing
Review Meeting of IRHPA project of Chemical Engineering	Department of Science & Technology	Ongoing
BIOACTIVITY STUDIES OF BHASMAS	Department of Science & Technology	Ongoing
Nanoparticles in Traditional Medicine may lead to New Medical Chemistry: A Study of Bhasmas Using Modern Sciences	Department of Science & Technology	Ongoing
Saltation and attrition of solid particles in pneumatic conveying systems	Department of Science & Technology	Ongoing
SERC School on Introduction to Systems and Synthetic Biology for Scientists and Engineers	Department of Science & Technology	Ongoing
WOS-A "Genomic scale modeling of gene regulatory networks cross-linking metabolic and signaling pathways for a specified phenotype"	Department of Science & Technology	Ongoing
Study of Distribution of Counter-ions around ionic Micelles using SANS and SAXS	Department of Science & Technology	Ongoing
Engineering Silver Nanoparticle Impregnated Activated Carbon for Water Purification	Department of Science & Technology	Ongoing
IITB-Centre of Excellence in Climate Studies (IITB-CECS)	Department of Science & Technology	Ongoing
PHASE -II , HOMEOPATHY : AN INVESTIGATION BASED ON CONCEPTS OF NANOMEDICINE	DONATION	Ongoing
IFCPAR Industrial Research Project No.7114-Air Pollution	INDO-FRENCH CENTRE FOR THE PROMOTION OF ADVANCED RESEARCH	Ongoing
FOSSEE: Free/Open Source Software in Science and Engineering Education (Assimilation of Open source Software in Science and Engineering)	Ministry of Human Resource Development	Ongoing
Transport and Rxn Engg RT Labs	Ministry of Human Resource Development	Ongoing
GNUKhata - Open source software	Ministry of Human Resource Development	Ongoing
Award of Post Doctoral Fellowship for Women for 2009-10/2010-11 (category -Gen)	University Grant Commission	Ongoing

Consultancy projects:

The department undertook 9 jobs generating Rs. Rs.2229563/- The total number of faculty involved 06.

Extension activities:

CEP courses:

Nil

Symposium

Research Scholars' Symposium 2012

Azeotropy 2011

Seminars:

Convener: Prof. P.W. Wangikar

- [Mr. Chandrashekar Shankar's Talk](#)
"Molecular Design of Materials- Application to Mechanical Properties of Network Polymers" 22 Mar 2012, CEO Vision Earthcare SINE IITB
- [Dr. Bala Raghunath's Talk](#)
"Designing and Scaling a Robust Biopharmaceutical Manufacturing Process" 12 Mar 2012, Director of Biomanufacturing Sciences Network for Asia.
- [Dr. Bala Raghunath's Talk](#)
"Sizing of Robust & Cost Effective Filtration Processes Using Safety Factors" 12 Mar 2012, Director of Biomanufacturing Sciences Network for Asia.
- [Dr. Amit Dutta's Talk](#)
"Macromolecules at Solid-Liquid Interfaces" 27 Feb 2012, National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD 20899, USA
- [Dr. Partha Sarathi Goswami's Talk](#)
"Particle dynamics in a turbulent particle-gas suspension at high Stokes number", 16 Feb 2012, CSIR-Centre for Mathematical Modeling and Computer Simulation, Bangalore.
- [Dr. Saurav Datta's Talk](#)
"Advanced Membrane Technologies – Experimental Study and Theoretical Analysis" 02 Feb 2012, Research Engineer at Energy Systems Division, Argonne National Laboratory, USA
- [Dr. Lopamudra Giri's Talk](#)
"Emerging topics at the interface of Engineering and Biology.", 30 Jan 2012, Department of Anesthesiology, Washington University, School of Medicine, St Louis.
- [Rajesh N. Davé's Talk](#)
"Particle Engineering for Pharmaceutical Applications", 27 Jan 2012, Distinguished Professor of Chemical Biological and Pharmaceutical Engineering, NJIT Site-Leader, NSF-ERC on Structured Organic Particulate Systems New Jersey Institute of Technology, Newark, NJ, USA.
- [Dr. Venkata Ramana Gundabala's Talk](#)
"Microfluidics Routes to Droplet Generation and Cell Microencapsulation" 19 Jan 2012, Postdoctoral fellow at Georgia Institute of Technology, USA.
- [Dr Aruna Mohan's Talk](#)
"Field-Theoretic Modeling of Supramolecular Polymer Networks and Gels" 12 Jan 2012

- [Prof. David H. Gracias Johns's Talk](#)
“Three-Dimensional Self-Assembly at Small Size Scales” 13 Jan 2012 , Johns Hopkins University Baltimore, USA
- [Dr. Jacob Eapen's Talk](#)
“Classical Nature of Thermal Conduction in Nanofluids”, 12 Jan 2012, Department of Nuclear Engineering, North Carolina State University, USA
- [Dr. Jagan Mahadevan's Talk](#)
“Impact of Capillary-Driven liquid films on salt crystallization”, 02 Jan 2012, University of Tulsa
- [Dr. Parag A. Deshpande's Talk](#)
"Shifting the metal-on-support paradigm to metal-in-support paradigm: Novel heterogeneous catalysis by not-so-novel compounds, 19 Dec 2011
- [Dr. Vipasha Soni's talk](#)
“Simultaneous model-based design of process and assisting structured materials”, 1 Dec 2011, Senior Project Engineer, BASF SE, Germany
- [Prof. Mukta Tripathi's Talk](#)
“Phase Behavior of Anisotropic Colloids” 28 Nov 2011. Department of Chemical Engineering, IIT Gandhinagar
- [Prof. Murray Gray's Talk](#)
“Development and Management of New Energy Supplies: Canada’s Experience with Unconventional Energy Development.”, 11 Aug 2011, Department of Chemical and Materials Engineering University of Alberta, Edmonton, Canada.
- [Prof. Murray Gray's Talk](#)
“Processing of Complex Nano-Structured Fluids: Fundamental Gaps in Engineering and Chemistry for Processing Heavy Petroleum Fractions”, 15 Nov 2011, Department of Chemical and Materials Engineering University of Alberta, Edmonton, Canada.
- [Dr Jyoti Seth's Talk](#)
“Inhomogeneous Flow of Soft Particle Pastes & Use of Emulsions for Energy Efficient Combustion.” 13 Sep 2011
- [Dr. Jyoti Phirani's Talk](#)
“Methane Production from Hydrate Bearing Sediments”, 21 Sep 2011, University of Houston, Houston
- [Prof. Sharad Bhartiya's Talk](#)
“Overview of Process Systems Engineering activities at IITB.”, 8 Sep 2011, Department of Chemical Engineering, I.I.T. Bombay
- [Dr. Ashish Lele's Talk](#)
“From Molecular Structure to Polymer Processing: Bridging length and time scales.”, 25 Aug 2011, Polymer Science and Engineering Division National Chemical Laboratory
- [Prof. Ashutosh Sharma's Talk](#)
“Self-organized Meso-Fabrication and Functionalities in Highly Confined Soft Materials”, 17 Aug 2011. IIT Kanpur
- [Mr. P. D. Samudra's Talk](#)
“lecture by our alumnus Mr. P.D Samudra, Ex. Director, UHDE India”, 10 Aug 2011. Executive Director, UHDE India.

- [Dr. Anshu Anand's Talk](#)
"Modeling and Simulation of Particulate Flow", 10 Aug, 11, University of Colorado at Boulder
- [Dr. Benno Lueke's Talk](#)
"Industrial Electrolysis of sodium chloride brine and HCl - Status and further developments." 4 Aug 2011, Managing Director, UHDE India Private Limited
- [Arindam Sarkar Talks](#) thru Skype
"Electrochemical Oxygen Reduction on non platinum, low platinum and non noble metal electrocatalyst.", Lawrence Berkeley National Laboratory, CA, 15 Jun 2011
- [Dr. Pratyush Dayal's Talk](#) thru Skype
"Modeling active self-oscillating gels that follow complex paths"., 15 Jun 2011, Dr Prankul Middha, GexCon AS, Bergen, Norway)
- [Dr. Prankul Middha's Talk](#) thru Skype
"The use of CFD for explosion safety studies on process facilities", 14 Jan 2011
- [Dr. Yogendra Shastri's Talk](#) thru Skype
"Techno-economic feasibility analysis of bioenergy feedstock production using optimization and simulation models". 14 Jun 2011, Visiting Research Assistant Professor Energy Biosciences Institute & Department of Agricultural and Biological Engineering University of Illinois at Urbana-Champaign
- [Dr. Ethayaraja Mani's Talk](#)
"Modeling of Self-assembling Colloids". 03 Jun 2011. Van't Hoff Institute for Molecular Sciences, University of Amsterdam, The Netherlands.
- [Dr. Subhasis Ghoshal's Talk](#) "Nanoparticles for Groundwater Remediation"
Department of Civil Engineering, McGill University, Montreal, Canada
- [Dr. K. S. Gandhi's Talk](#)
"Hopes & Fears for IITs: View from the Sidelines.", 06 April 2011., IISc Bangalore)
- [Dr. K. S. Gandhi's Talk](#)
"Nature vs. Nurture: Case of problem solving". 05 April 2011, IISc Bangalore)
- [Dr. Jaydevsingh M. Gohil's Talk](#)
"Reverse osmosis thin film composite membranes: Studies into structure, property, and function". 01 April 2011., Post Doctoral Fellow Chemical Engineering Department, Indian Institute of Technology Bombay

Conferences /Symposia/Workshops and Seminars (participated):

A. K. Suresh

- Young Investigators Meeting (YIM-2011), Cambridge, Massachusetts, USA. Oct 8-10, 2011.
- Visited the Department of Energy, Environment and Chemical Engineering in the Washington University in St Louis to discuss collaborative efforts between IITBombay and WUSTL. Also delivered a talk. Oct 13-15, 2011.
- Visited the research division of Dow Chemicals Co. at their headquarters in Midland, MI, USA for project-related discussions. Also delivered two talks. Oct 17, 2011.

- Visited the University of Southern California, LA, USA, as part of a delegation to discuss Institution-level collaborations. Oct 11, 2011.

Chandra Venkataraman

- "Climate footprint of selected Indian emission sectors", presented at National Research Conference on Climate Change, Indian Institute of Technology Delhi, November 5-6, 2011.
- "Data assimilation using optimal interpolation: Correcting chemical transport model predictions with satellite observations", presented at National Research Conference on Climate Change, Indian Institute of Technology Delhi, November 5-6, 2011.
- presented at A Stakeholder Consultation Workshop on Brick Kiln Performance & Roadmap for Cleaner Brick Manufacturing in India, Shakti Sustainable Energy Foundation, India Habitat Centre, New Delhi, September 9, 2011.

Ganesh Viswanathan

- International Conference on Mathematical and Theoretical Biology
- 2nd Indo-German Workshop on Recent Advances in Reaction and Separation Processes

Jayesh Bellare

- "11th Meeting of the Task Force on Nanotechnology Platform" on 13-14 January 2012 at JNCASR, Bangalore.
- Chaired a session at "Advance in Electron Microscopy in Virology research and 3D Imaging: The Road Ahead" on 20-21 October 2011 at National Institute of Virology, Pune.

Kannan M Moudgalya

- "LaTeX training through spoken tutorials" in annual international event TUG 2011 held on 21 October 2011 at Trivandrum.
- "Spoken Tutorials For Employment, IT Literacy and Bridging Digital Divide" at the International Conference on Technology Enhanced Education held on 4 January 2012 at Amrita University, Kollam.
- "Inclusive, Collaborative, Education through Spoken Tutorials" at the International Conference on Emerging Green Technologies held on 29 July 2011 at Periyar Maniammai University, Thanjavur

Mahesh S Tirumkudulu

- "Ultimate strength of a colloidal packing saturated with a solven ", IUTAM Symposium on MOBILE PARTICULATE SYSTEMS: Kinematics, Rheology and Complex Phenomena, held from January 23 - 27, 2012, at Bangalore, India

Mani Bhushan

- "Robust Reallocation and Upgrade of Sensor Networks for Fault Diagnosis", at the 21st European Symposium on Computer Aided Process Engineering- ESCAPE 21, Greece, May 2011.

Madhu Vinjamur

- "A simple method to optimize drying conditions in multi-zone dryers for polymer coatings," in Asian Coating Workshop, held July 4-5, 2011, at Fukuoka, Japan.
- "Rate constant of homogeneous acid catalyzed reactions is re-defined using Taguchi approach," Chemference, Bangalore, India, September 23-24, 2011
- "Taguchi approach to investigate the rate constant of homogeneous acid catalyzed reactions," International Symposium on Relations between Homogeneous and Heterogeneous Catalysis, Berlin, Germany, September 11-16, 2011

Pramod P Wangikar

- ESF-EMBO conference on Molecular Bioenergetics of Cyanobacteria: From Cell to Community held at Sant Feliu de Guixols, Spain during April 10-15, 2011 (<http://www.esf.org/index.php?id=7180>).
- A workshop "Cyanobacterial Metabolism: Models and Validation", to be held between Sunday, 26 June 2011 and Wednesday, 29 June 2011, at The Abbey Resort, 269 Fontana Blvd., Fontana, Wisconsin, 53125 USA
- Indo-US workshop on Biocomputing (ISB 2011) held at Calicut, India during September 12-13, 2011.

P. Sunthar

- "Presented a talk "Self-assembly of Vesicles in a low Peclet Number Mixing of Phases: Experiments and Possible Mechanism" in the National SERC Symposium on Complex Fluids, 6--7 January 2012, at IIT Guwahati. .
- "Presented a poster "Anamolous fingering in Vesicle Suspensions", in an International IUTAM Symposium on Mobile Particulate Systems, 23--27 January 2012, Bangalore.

Rochish Thaokar

- Asia Pacific Chemical Engineering Congress, 21-24 February, 2012, Singapore
- IUTAM on Particulate matter, Jan 24-30, 2012, Bangalore
- Complex Fluids Symposium, Jan 3-7, 2012, IIT Guwahati
- Advanced Instabilitiy Methods, Jan 21-24, IIT Bombay
- National Symposium on Fluid Mechanics and Fluid Power, 17-20 December, 2011, Bhopal

Rajdip Bandyopadhyaya

- Delivered a lecture on: Aqueous dispersion of magnetite nanoparticles: Synthesis mechanism, cellular uptake and state of dispersion, American Chemical Society's Colloid and Surface Science Symposium, Montreal, June, 2011.

Sharad Bhartiya

“Online Batch Digester Monitoring & Control of Kappa Number in Indian Pulp & Paper Mills”, Workshop on Dissemination of Information on Issues Addressed under Cess Supported R & D Projects, New Delhi, August 17, (2011)

V. M. Naik

- Young Investigators Meeting (YIM-2011), Cambridge, Massachusetts, USA. Oct 8-10, 2011.
- Visited the Department of Energy, Environment and Chemical Engineering in the Washington University in St Louis to discuss collaborative efforts between IITBombay and WUSTL. Also delivered a talk. Oct 13-15, 2011.
- Visited the research division of Dow Chemicals Co. at their headquarters in Midland, MI, USA for project-related discussions. Also delivered two talks. Oct 17, 2011.
- Visited the University of Southern California, LA, USA, as part of a delegation to discuss Institution-level collaborations. Oct 11, 2011.

Vinay A. Juvekar

- presented paper in ISEAC International Symposium cum Workshop on Electrochemistry, Dec 7-10, 2011 , Goa, India

Invited Lectures:

Invited Lectures: National/International

A. K. Suresh

- Understanding the influence of synthesis conditions on Structure and performance of TFC membranes for RO, Dow Research, Midland, Michigan, USA, Oct 17, 2011.
- Reaction-transport coupled systems in Chemical engineering, Dow Research, Midland, Ohio, USA, Oct 17, 2011.
- Thin polymeric films by Interfacial polycondensation at liquid-liquid and polymer-liquid interfaces: Experiments and Modelling. WUSTL, St.Louis, MO, USA. Oct 14, 2011.

Chandra Venkataraman

- "Aerosol chemistry and climate effects in the south Asian region," in Workshop on Atmospheric Chemistry in South Asia: Progress and Emerging Issues, Indian Institute of Science Education and Research Mohali (IISER), Mohali, Punjab, India, March 5-6, 2012

Devang V. Khakhar

- Challenges in Modeling Complex Flows, India Science Lab, GM Global R&D Symposium on “Modeling and Simulation Challenges in the Design and Development of Future Vehicles” Monday, Nov 14, 2011, Bangalore
- Chemical Engineering in the 21st Century, Seventh Champakbhai Choksey Endowment Lecture Dwarkada J. Sanghvi College of Engineering, March 24, 2012

- Rheology and Segregation of Granular Mixtures in Dense Flows, Unifying Concepts in Materials, J. A. Krumhansl Symposium, 6-8 February, 2012, NCBS, Bangalore

Ganesh Viswanathan

- Hot zone formation and dynamics in catalytic packed-bed reactors, 2nd Indo-German workshop on Recent advances in reaction and separation processes, Bad Herrenalb, Germany
- Pattern formation in catalytic packed-bed reactors, National Institute of Technology Trichy, Tiruchirapalli.

Jhumpa Adhikari

- Lecture on "Molecular Simulation Techniques: NVE, NVT and NPT" in Molecular Modelling Workshop Schedule at ICT Mumbai on 29th January, 2012

Janaky Narayanan

- Physics Applied to Biology, Lecture at Workshop conducted for S.Y.B.Sc. students at Physics Dept., R.J.College, Mumbai

Jayesh Bellare

- "International Symposium on the safe use of Nanomaterials and workshop on nanomaterial safety: Status, procedures, policy and Ethical Concerns" on 1-3 February 2011 at Indian Institute of Toxicology Research, Lucknow, India
- "International Conference on Healthcare Infrastructure and Medical Technology 2011" on 2-5 February 2011 at Jawaharlal auditorium, AIIMS, New Delhi, India.
- "Monash Academy Annual Symposium 2011" on 17-19 February 2011 at Victor Menezes Convention Center.
- "Nanotechnology-An update" on 22 February 2011 at Mini Auditorium, Juhu Campus, S.N.D.T Women's University, Mumbai.
- "Trends in Electron Microscopy in Frontier Science" on 24 March 2011 at Rabindra-Okakura Bhaban, Kolkata
- "Reminiscence-2011 Alumni-Meet of Ex. M.D. (HOM) Students" on 23 April 2011 at Sonajirao Kshirsagar Homeopathy Medical College, BEED.
- "Nanotechnology and its applications" on 09 May 2011 at BARC
- "International Conference on electron microscopy and XXXII Annual meeting of EMSI" on 6-8 July 2011 at Hyderabad.
- "International Conference on electron microscopy and XXXII Annual meeting of EMSI" on 6-8 July 2011 at Hyderabad.
- "Technology vision 2035 Programme Brainstorming meeting on medical science and health care" on 06 September 2011 at TIFAC, IIT Delhi, New Delhi.
- "Nanotechnology: Homoeopathy Perspective" on 04 November 2011 at Bakson College, YMCA Auditorium, Greater Noida.
- "A Symposium on Maharashtra Biotechnology day Celebration" on 14 November 2011 at Durbar Hall, Haffkine Institute, Parel, Mumbai.

- “Workshop on Electron microscopy” on 23-25 November 2011 at Institute of Physics, Bhubaneswar
- “1st International Workshop on Nanoparticles and their applications in Medicine (NAM-2012)” on 3-4 January 2012 at School of Medical Science and Technology, IIT Kharagpur.

[K. V. Venkatesh](#)

- Key note speaker at a National Conference on Transcriptome 2012 held at College of Engineering and Technology, Jalgoan
- Key note speaker at National Conference on Bioinformatics held at DY Patil Institute, New-Bombay.

[Kannan M Moudgalya](#)

- "Education through scalable, collaborative FOSS workshops" at the WorldDidac India 2011, Global Education & Skill Summit, held on 28 September 2011, Delhi
- "Spoken Tutorials: A Collaborative Educational Technology for Inclusive Growth", Collaboration for Inclusive Growth SEARCC 2011, held on 12 December 2011, Delhi
- "Spoken Tutorials: For Employment, IT Literacy and Bridging Digital divide", National Conference on Applications of Mathematics and Computer Science, held on 10 Feb. 2012, Vaishnav College, Chennai.

[Madhu Vinjamur](#)

- “How to coat thin films and dry them?” invited talk at Kyushu Institute of Technology, Kitakyushu, Japan, 6 July 2011.
- “Drying of single layer and two layer polymer films and optimization of operating conditions,” invited talk at Asahi-Kasei Engineering Co., Mt. Fuji, Japan, 7 July 2011.

[Rochish Thaokar](#)

- Lectures on Electrohydrodynamics, Complex Fluids Symposium, IIT Guwahati, January 2012
- Instability of a charged drop, Advanced Instability Methods, IIT Bombay, January 2012
- Drop Dielectrophoresis, Department of Chemical Engineering, IISc, Bangalore, March 2012

[Rajdip Bandyopadhyaya](#)

- Functional Nanoparticles by the Colloidal Route: Experiments, Mechanism, Modeling, C. V. Seshadri Memorial Lecture, IIT Kanpur, Nov, 2011.
- Structure, Dynamics and Functionality of Nanoparticles in Multiphase Systems, Mumbai-Pune soft matter meeting, National Chemical Laboratory, Pune, Dec, 2011.
- Nanoporous Materials for Catalysis by Soft and Hard Templates, National workshop on the role of Materials in Catalysis, IIT Madras, Dec, 2011
- Functional Nanoparticles and Nanoporous Materials by Self Assembly: Experiments, Mechanism and Modeling, Chemistry of Functional Materials meeting, Goa, Aug, 2011.

[Sharad Bhartiya](#)

- “Advanced Process Control: Trends and Perspectives” IChE Seminar Series, Mumbai Chapter, Mumbai, March 16, (2012)

[V. M. Naik](#)

- "Harnessing Interfacial Phenomena for Structuring and Functionalizing Foods" in International Conference on Functional Dairy Foods organized by National Dairy Research Institute – Karnal, and Dairy Technology Society of India, 16-19th November 2011
- "Historical Evolution of Electrochemistry" in SERC School of Electrochemical Systems, IIT Bombay, Mumbai, 16 – 28th May 2011
- "Electrodynamic Manipulation of Electro-neutral Materials" in Complex Fluids & Polymer Eng Seminar Series, National Chemical Laboratory, Pune, 21st July 2011

[Vinay A. Juvekar](#)

- Key note speech at National Conference on 'Nanostructures and Nanomaterials' Department of Chemical Engineering, North Maharashtra University, Jalgaon on 28th March 2012

Significant Awards and Distinctions:

[Chandra Venkataraman](#)

- Institute Chair Professor, IIT Bombay
- Convener, IDP in Climate Studies, IIT Bombay
- Chair, Working Group on Black Carbon Source Influence and Atmospheric Impact, National Carbonaceous Aerosol Programme, Ministry of Environment and Forests

[Devang V. Khakhar](#)

- J. C. Bose Fellowship

[Jayesh Bellare](#)

- Elected Fellow of Electron Microscopy Society of India
- Elected Fellow of Maharashtra Academy of Science

[K. V. Venkatesh](#)

- HH Mathur Award from IIT Bombay for excellence in Applied Research, 2011.
- Hetro-Drugs GS Laddha memorial Lecture, Chemcon 2011.

[Mahesh S Tirumkudulu](#)

- Swaranjanti Fellowship Award for the year 2010-2011

Honorary Work

[A. K. Suresh](#)

- Reviewed papers for AIChE J, I&EC Research, Chem. Eng. Res. Des.

[Chandra Venkataraman](#)

- Editorial Advisory Board, Tellus-B.
- Reviewer for Aerosol Science and Technology, Journal of Geophysical Research and Journal of Atmospheric Chemistry.
- Reviewer for DST-SERC proposal.

[Devang V. Khakhar](#)

- Editorial Board Member, Advanced Powder Technology, Elsevier
- Member, Science Advisory Council to the Prime Minister
- Member, Governing Council, Indian Academy of Sciences
- Member, Atomic Energy Regulatory Board
- Member, Science and Engineering Research Board
- Member, Governing Council, Indian National Academy of Engineering
- Member, Governing Council, Indian National Science Academy

[Ganesh Viswanathan](#)

- Reviewed manuscripts for a) Systems and Synthetic Biology, b) Combustion Science and Technology

[Hemant Nanavati](#)

- Reviewed Article titled "SOLID STATE POLYMERIZATION (SSP)" for "Encyclopedia of Polymer Science and Technology", by S.N. Vouyiouka and C.D. Papaspyrides

[Jayesh Bellare](#)

- On the Board of Directors of Haffkine Bio Pharmaceuticals
- Vice-Chair of DBT Task Force on Bioengineering
- Member, ICMR Task Force on Biomedicine Engineering
- Member, DBT Task Force Nano Bio Technology
- Member, SBIRI Technical Committee of the DBT

[K. V. Venkatesh](#)

- Associate Editor, BMC Systems Biology
- Reviewed for Biotechnology and Bioengineering, PLOS computational Biology, PLOS One.

[Madhu Vinjamur](#)

- Reviewer for Powder Technology, Journal of Chemical Engg of Japan, Journal of Applied Polymer Science

[Mahesh S Tirumkudulu](#)

- *Reviewed manuscripts for Soft Matter Journal and Langmuir Journal*

[Mani Bhushan](#)

- Reviewed papers in journals such as Automatica, Industrial Engineering & Chemistry Research, Chemical Engineering Science, IEEE Systems, Man and Cybernetics

[Pramod P Wangikar](#)

- Member of Editorial Board of "Biotechnology and Bioengineering"

[Rochish Thaokar](#)

- Article Reviewer, Physics of Fluids

[Sharad Bhartiya](#)

- Evaluated PhD Thesis titled “ Modeling and simulation study of thermal stress induced eukaryotic heat shock response” by Dwivedi of Birla Institute of Technology, Mesra
- Reviewed various articles for Journal of Process Control, BIotechnology Progress, Control Systems 2012, among others
- Member IPC, Control Systems 2012, New Orleans, April 22-25, 2012

[Sandip Roy](#)

- Reviewed four papers for Journal of Loss Prevention in Process Safety, Process Safety and Environmental Protection

[Sarika Mehra](#)

- "Effect of Endoplasmic Reticulum Stress on Protein Productivity in Recombinant CHO Cells" at AIChE Annual Meeting in Minneapolis, MN on 16th Oct 2011.
- A Systems Approach to Decipher Stress Response Networks In Mycobacteria " at AIChE Annual Meeting in Minneapolis, MN on 18th Oct 2011.

[V. M. Naik](#)

- Member PAC-Chem Eng for SERC - DST
- Member FIST-Expert Committee SERC – DST
- Member RC CFTRI - Mysore Organisers: Juvekar, VA; Contactor, A; Naik, VM
Details: SERC School of Electrochemical Systems, IIT Bombay, Mumbai, 16 – 28th May 2011

[Vinay A. Juvekar](#)

- Paper Review for ' Journal of Chemical & Engineering data', May 2011
- Paper Review for ' Journal of Colloid and Interface Science, June 2011
- Paper Review for ' Energy & Fuels', August 2011

Faculty Members and their specializations:

Jhumpa Adhikari

Statistical Thermodynamics, Molecular Simulations

Rajdip Bandyopadhyaya

Porous Media, Colloids, Aerosols, Thin films, Surface Science, Nanoparticles, Nanocomposites, Molecular Simulations

Jayesh Bellare

Separations, Surface Science, Nanoparticles, Microscopy, Drug Delivery

Sharad Bhartiya

Process Control, Modelling, Identification

Mani Bhushan

Process Safety Analysis, Process Control, Optimisation, Identification

S Ganeshan

Heat and Mass Transfer

Ravindra D. Gudi

Process Safety Analysis, Process Control, Optimisation, Identification, Biochemical Engineering

Sameer Jadhav

Surface Science, Computational Flow Modelling (CFD), Drug Delivery, Biomolecular Engineering

Vinay A. Juvekar

Surfactants, Separations, Rheology, Electrohydrodynamics, Multiphase Reaction, Surface Science, Polymer Physics

Devang V. Khakhar

Surfactants, Rheology, Granular Flow, Reactor Modelling, Polymer Processing, Nanocomposites, Drug Delivery

Sanjay. M. Mahajani

Separations, Computational Flow Modelling (CFD), Multiphase Reaction, Catalysis, Renewable Resources, Coal Gasification

Ranjan Kumar Malik

Separations, Modelling, Energy Integration

Anurag Mehra

Surfactants, Multiphase Reaction, Nanoparticles, Molecular Simulations, Food Engineering

Sarika Mehra

Systems Biology, Computational Biology, Biomolecular Engineering

Arun Sadashio Moharir

Separations, Reactor Modelling, Optimisation, Modelling, Pollution

Kannan M. Moudgalya

Process Control, Modelling

Mamata Mukhopadhyay

Separations, Food Engineering

V. M. Naik

Surfactants, Separations, Electrohydrodynamics, Colloids, Surface Science, Polymer Processing, Nanoparticles, Food Engineering

Hemant Nanavati

Statistical Thermodynamics, Polymer Processing, Polymer Physics, Nano-composites, Molecular Simulations, Renewable Resources

Janaky Narayanan

Surfactants, Rheology, Surface Science, Microscopy

Santosh Noronha

Renewable Resources, Green Engineering, Systems Biology, Computational Biology, Biomolecular Engineering, Biochemical Engineering

Sachin C. Patwardhan

Process Control, Modelling, Identification

V Govardhana Rao

Separations, Rheology, Heat and Mass Transfer

Sandip Roy

Surfactants, Separations, Process Safety Analysis, Surface Science, Statistical Thermodynamics, Renewable Resources

Hariharan S. Shankar

Pollution, Biochemical Engineering

P. Sunthar

Surfactants, Granular Flow, Fluid Mechanics and Stability, Computational Flow Modelling (CFD), Polymer Physics, Drug Delivery

A. K. Suresh

Heat and Mass Transfer, Multiphase Reaction, Catalysis, Nanoparticles, Biochemical Engineering

Rochish M Thakkar

Surfactants, Electrohydrodynamics, Computational Flow Modelling (CFD), Colloids, Statistical Thermodynamics, Nanoparticles, Drug Delivery

Mahesh S Tirumkudulu

Surfactants, Rheology, Computational Flow Modelling (CFD), Colloids, Coatings, Thin films, Surface Science, Drug Delivery

Chandra Venkataraman

Aerosols, Surface Science, Nanoparticles, Nano-composites, Drug Delivery, Renewable Resources, Pollution, Climate Change

K. V. Venkatesh

Food Engineering, Systems Biology, Biomolecular Engineering, Biochemical Engineering

Madhu Vinjamur

Porous Media, Heat and Mass Transfer, Coatings, Food Engineering, Renewable Resources

Ganesh A Viswanathan

Reactor Modelling, Multiphase Reaction, Systems Biology, Computational Biology, Biomolecular Engineering

Pramod Wangikar

Process Control, Modelling, Computational Biology, Biomolecular Engineering, Biochemical Engineering

Publications:

Book chapters:

Nil

Articles in Journals

Articles in Journals (National):

Nil

Articles in Journals (International):

- Agrawal, M.; Sonetha, V.; Sharma, S.; Parakh, S.; Dalvi, B. & Bellare, J. (2011), 'Evolution of a novel intraductal patent ductus arteriosus occlusion device', *Journal of Medical Devices, Transactions of the ASME* **5**.
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