

# CURRICULUM VITAE

DR. SURESH SUNDARAMURTHY

May 2016

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Gender: **Male**

Date of Birth: **14-01-1982**, Place of Birth: **Puducherry, India**

Address: **Assistant Professor, Department of Chemical Engineering,  
Maulana Azad National Institute of Technology Bhopal-462 003, M.P., India**

Phone: **+91 8989005393**, Email: [sureshpecchem@gmail.com](mailto:sureshpecchem@gmail.com), [sureshs@manit.ac.in](mailto:sureshs@manit.ac.in)

Marital Status: **Married**

Nationality: **Indian**

Degree: **PhD**

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## EDUCATION

### PhD Studies:

July 2007-December 2010

PhD in Chemical Engineering

Indian Institute of Technology Roorkee, India

## DISSERTATION

**Title:** Multicomponent adsorption of phenolic compounds from aqueous solution

**Extended Abstract:** Synthesis of Granular activated carbon (GAC) from bamboo waste by oxidation-combustion method and characterize obtained GAC, and to study its use in batch and column adsorption of Phenol (P) and its associated compounds. No work is reported using Taguchi's method for the adsorption of P and their associated compounds from wastewater using batch and column systems in single or mixtures form. The present study has been undertaken with the following specific objectives:

- To study multicomponent adsorption isotherm/thermodynamics behaviour and kinetics of the competitive adsorption equilibria of P and its derivatives and associated compounds in binary and ternary systems.
- The application of Taguchi's design of experimental methodology for the single, binary and ternary adsorption systems for P and its derivatives and associated compounds in batch and column system.
- To study desorption of adsorbed species and disposal and management of spent GAC.
- Physico-chemical characterization including surface area, X-ray diffraction (XRD) analysis, scanning electron microscopy (SEM), energy dispersive atomic X-ray spectroscopy (EDAX) and Fourier transform infrared spectroscopy (FTIR), Transmission electron microscopy (TEM), Thermogravimetric analyzer (TGA) of the GAC before and after adsorption have been done to understand the adsorption mechanism.

The initial pH (pH<sub>0</sub>) of the solution strongly affects the chemistry of P and its derivatives and its associated compounds and GAC in an aqueous solution. The point of zero charge (pH<sub>pzc</sub>) of GAC lies at a pH<sub>0</sub> value of 10.3. Natural pH of 6.9, 6, 5.8, 6.0, 5.8, 5.6 and 6.1 were found to be optimum for the removal of AN, P, CP, NP, C, R and HQ, respectively. Optimum GAC dosages were found to be 10 g/l, for C<sub>0</sub> = 500 mg/l of P and its derivatives and its associated compounds. The pseudo-second-order kinetics represented the adsorption process well for all the adsorbates (single component). Equilibrium isotherms were analyzed by using

different isotherm models viz. The maximum removal of the materials from the synthetic wastewaters was found in the range of 60 to 99% at higher and lower concentrations, respectively. Redlich-Peterson and Temkin isotherm models generally well represent the equilibrium adsorption of P and its derivatives and its associated compounds onto GAC. The heat of adsorption ( $\Delta H_0$ ) and change in entropy ( $\Delta S_0$ ) for adsorption on GAC were found to be in the range of 18-52 kJ/mol and 121-243kJ/mol K. The negative value of change in Gibbs free energy ( $\Delta G_0$ ) indicated the feasibility and spontaneity of adsorption on by GAC. The isosteric heat of adsorption calculated from the equilibrium adsorption data using the Clausius-Clapeyron equation was quantitatively correlated with the fractional loading of compounds onto GAC. The surface energetic heterogeneity patterns of the GAC were described as functions of isosteric enthalpy. The higher heats of adsorption at low coverages were likely related to the presence of surface defects.

Batch studies for the removal of various components in binary and ternary systems by GAC were carried out using Taguchi's orthogonal array (OA) experimental design (DOE) methodology. Significant parameters, viz., concentration, temperature, adsorbent dose and contact time at three levels with a OA layout of L27 (313) were selected for the proposed experimental design for batch study. L9 (34) OA was used column study. In all, 27 sets of experiments were conducted for the adsorption in binary and ternary systems. The removal efficiency was found to be in the range of ~90–95%. The adsorption of P and its derivatives and associated compounds from the binary and ternary solutions onto GAC is generally found to be antagonistic in nature. Equilibrium isotherms for the binary and ternary adsorption have been analyzed by using non-modified Langmuir, modified Langmuir, extended-Langmuir, extended-Freundlich and Sheindorf–Rebuhn–Sheintuch (SRS) models. The competitive extended-Freundlich and SRS models fit the equilibrium data satisfactorily and adequately.

For the desorption experiments, several solvents (acids and alcohol, water) have been used. Among the various solvents, only NaOH was found to be better solvent for the desorption of P, CP, NP, C, R, HQ, while  $\text{HNO}_3$  was found to be better solvent for the desorption of AN. Thermal desorption at 623 K was found to be better as compared to solvent desorption. GAC worked well for at least five adsorption-desorption cycle, with continuous decrease in adsorption efficiency after each thermal desorption. It is necessary to properly dispose of the spent-GAC and/or utilize it for some beneficial purpose, if possible. The dried spent-GAC can be used directly or by making fire-briquettes in the furnace combustors/incinerators to recover its energy value. Blank GAC has a heating value of about 8.26 MJ/kg. Thus, the GAC along-with the adsorbed P and other compounds can be dried and used as a fuel in the boiler furnaces/incinerators, or can be used for the production of fuel-briquettes.

**Thesis Supervisors:** Prof. I. M. Mishra and Dr. V.C. Srivastava, IIT Roorkee, India

**Examiners:** Professor S. De, IIT Kharagpur and Professor G. Q. Max Lu, University of Queensland, Australia/Professor Wun Jern Ng, National University of Singapore.

**Master Studies:**

June 2004-May 2006

M.E in Chemical Engineering

Annamalai University, Tamil Nadu, India

**Thesis Title:** Biological treatment of wastewater using constructed wetland

**Bachelor Studies:**

June 2000-May 2004

B.Tech in Chemical Engineering

Pondicherry Engineering College, Pondicherry University, India

**Project Title:** Fermentation of cashew fruit – an experiment study

### **Postgraduate Diploma studies:**

June 2004-May 2005

PG Diploma in Industrial Safety

Annamalai University, Tamil Nadu, India

**Project Title:** Study on hazardous Chemical risks and safety analyses

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### **GRANTS AND FELLOWSHIPS (HONORS AND AWARDS)**

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1. **Research Fellow:** Ministry of Human Resource Development (MHRD), Department of Education, Government of India, New Delhi, 2007.
2. **Young Scientist Award:** 4<sup>th</sup> Uttarakhand State Science & Technology Congress, Department of Science & Technology, 2009.
3. **Visiting Fellow:** Jawaharlal Nehru Centre for Advanced Scientific Research, International Centre for Materials Science, Bangalore, 2011-2012. Research project was associated with Prof. CNR Rao.
4. **Prof R C Singh Memorial Medal:** 28<sup>th</sup> Indian Engineering Congress, Institution of Engineers India (IEI), 2013.
5. **Rashtriya Gaurav Award:** India International Friendship Society, New Delhi, 2015.
6. **IEI Young Engineers Award:** Institute of Engineers, Kolkata, India, August 2015.
7. **4<sup>th</sup> IGCW-2015 award** in the Knowledge Community & Academic Research category: Industrial Green Chemistry World (IGCW 2015), organised by Green ChemisTree Foundation, Mumbai, India, December 2015.
8. **Best Poster award** in the 103<sup>rd</sup> Indian Science Congress, University of Mysore, 3-7<sup>th</sup> January 2016.
9. **Visiting Assistant Professor,** Asian Institute of Technology, Bangkok selected by Govt. of India (MHRD Scheme), January 2016-May 2016.

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### **PROJECT FUNDING (RESEARCH<TRAINING<OTHER)**

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1. **R&D Project:** Treatment of industrial wastewater using sequential batch reactor (SBR) - 45 Lacs, MHRD-MANIT, Bhopal (Grant-Aid-Scheme), India, 2010-2012.
2. **R&D Project:** Extraction of fibres from raw sisal plants-15.45 Lacs, Handloom and Handicraft Rural Development Department, Government of Madhya Pradesh, India, 2011-2013.
3. **R&D Project:** Development of Novel separation Processes, MHRD-MANIT Bhopal-50 Lacs, 2011-2012.
4. **R&D Project:** Treatment of industrial wastewater using photocatalysis process, MPCST, MP Govt, India-5.45 lacs, 2012-2015.
5. **R&D Industrial Project:** Treatment of brine sludge using combined adsorption-Electro-chemical methods, TEQIP & Grasim Industry, Nagda, Bhopal, India- 14.45 lacs, 2012-2015.
6. **R&D Project:** Biomass to Biofuel, TEQIP-II-0.75 lacs
7. **R&D Project:** Nanocatalysis preparation from low cost materials, TEQIP-II-0.45 lacs
8. **R&D Project:** Solar desalination, TEQIP-II-1.0 lacs
9. **R&D Project:** Extraction of silica and use for nanofluid applications, Incubation centre-0.75 lacs
10. **R&D Project:** Feasibility study of biogas generation from MANIT' campus waste, TEQIP-II-7.65 lacs (ongoing)
11. **R & D Consultancy Project:** Testing the chemical kit for physicochemical parameters, 0.35 lacs, M/s Shrinathji chemicals, Bhopal
12. **R & D Consultancy Project:** Determination of silica and other minerals, Irrigation department, Bhopal, 0.35 lac.

13. **R&D Project:** Machining and analysis of various parameters of nanocomposites prepared from industries wastes for various applications, MPCST, MP Govt, India-4 lacs (under progress), 2015-2017.
14. **R&D Project:** Development and optimization of bio-char enriched super compost from forest necromass for enhanced soil carbon sequestration, MoES, India- 55 lacs collaboration with Rain Forest Research Institute, Jorhat, Assam (under progress).
15. **R&D Project:** Selective Conversion of CO<sub>2</sub> to CO using an Inexpensive Nanoporous carbon doped plasma-photocatalysis, submitted to ONGC Energy Centre, Mumbai, India-12.08 lacs (under progress).

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## RESEARCH EXPERIENCE

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1. **Visiting Assistant Professor,** Asian Institute of Technology, Bangkok, Thailand, January-May 2016.
2. **Assistant Professor,** Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, M.P., India, August 2010 – Till date.
3. **Junior/Senior Research Fellow,** Department of Chemical Engineering, Indian Institute of Technology Roorkee, India, July 2007 – July 2010.
4. **Senior Research Associate,** Department of Chemical Engineering, Indian Institute of Technology Kanpur, India, February 2007 – July 2007.
5. **Junior Research Associate,** Centre for Pollution Control & Energy Technology, Pondicherry University, India, June 2006 – January 2007.

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## TEACHING EXPERIENCE

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1. **Assistant Professor,** Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, M.P., India, August 2010 – Till date.
2. **Visiting Assistant Professor,** Asian Institute of Technology, Bangkok, Thailand, January-May 2016.
3. **Junior Research Associate,** Centre for Pollution Control & Energy Technology, Pondicherry University, India, June 2006 – January 2007.

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## TEACHING AND SUPERVISION

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- Chemical Reaction Engineering, Bio-energy Engineering, Biochemical Engineering, Bioprocess Engineering, Environmental Pollution Control and Process safety, Process Modelling and Simulation, Advance Separation Processes, CFD Multiphase reactors, Process Dynamic and Control.
- Supervisor and co-supervisor for about 03 (PhD-students) and 06 more students working currently, 18 students (MTech/MSc thesis) and 45 (BTech+ project students).

### List of completed Ph.D. Thesis:

Name of students	Degree	Topic
Dr. Rajesh Babu Katiyar	PhD	Optimization of Engineering & Process Parameter for Vermi-composting
Dr. Kamlu Ram Gota	PhD	Study of Photocatalytic degradation of Phenolic Wastewater
Dr. (Mrs). Saraswati Rana	PhD	Treatment of Phenolic and Textile wastewater by using Biological and Physicochemical Methods

### List of Ongoing Ph.D. Thesis:

- Extraction of nanofibres, preparation of nanocomposite and adsorption of phenolic compounds using sisal plants.
- Fly Ash: Economical Substitute as Paper Filler For Newsprint

- Eco-friendly carbonaceous nano-catalysis synthesis from low-cost material for degradation of pharmaceutical wastewater.
- Design of solar desalination
- Energy production from integrated anaerobic digestion coupled with microbial fuel cell (AD-MFC).
- Treatment of brine sludge from chloro-alkaline industry

#### **List of completed and Ongoing M.Tech. Thesis:**

- Optimization of 1-2 Propane, diol using Box Behnken Design
- Kinetic study of esterification with ethylene glycol & acetic acid in presence of Para toluene sulphonic acid.
- Simulation of postulated methanol pool fire in a nuclear fuel sub-assembly cleaning facility
- Removal of petroleum hydrocarbon from different oily sludge by various treatment methods
- Adsorption of phenol onto waste granular activated carbon from water purifier cartridge: Batch and Column study
- Simulation of different type of distillations columns for production of Methyl-Tert-Butyl-Ether by using ASPEN Plus software
- Photodegradation of phenol, catechol and hydroquinone pollutants from aqueous solution
- Removal of zinc onto synthesised zeolite from aqueous solution
- Fly ash: A suitable material for warm based technology
- Biological pretreatment of water hyacinth for biogas production
- Preparation of rubber-sisal fibre nano composites
- Hybrid anaerobic digester with MFC
- Design of RBC for degradation of wastewater
- Design of controller for MFC and Pipeline corrosion system
- Synthesis of DMC additives by using carbon based nanocatalyst for fuel application
- Design of controller for solar dryer
- Preparation of nanomaterial from lowcost materials
- Pyrolysis of hair based protein materials
- Assessment of sustainability of the proposed Kigamboni Eco-city in Tanzania with a focus on wastewater management

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#### **SKILLS**

- Strong knowledge and research experience in heterogeneous catalysis and electrocatalysis, proficient in preparation, characterization and evaluation of heterogeneous catalysts;
  - Strong background in *in-situ* fabrication and characterization of carbon based nano-particles/nanomaterials;
  - Excellent Laboratory developed: Momentum and Mass Transfer graduate Lab, Mechanical Operation graduate Lab, Green Catalysis and Process Technology Research Lab, Analytical and Simulation Lab, Biochemical and Bioenergy Engineering Research Lab, Industrial Pollution Abatement Research Lab
  - Be familiar with HPLC, TLC,GC, FT-IR, AAS, ICP, UV-vis, XRD, XPS, TPR/TPD, BET, Particle size analyzer, TGA-DSC, SEM-EDAX, TEM, AFM, Raman spectra and CHNS analyzer techniques;
  - Good abilities in search, tidying up and writing literatures for research including both English and Tamil documents;
  - Excellent abilities in manipulating computers; C++, MATLAB, ASPEN PLUS, MINITAB
  - Excellent interpersonal and communication skills.
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## PROFESSIONAL EXPERIENCE

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- Departmental Coordinator, Chemical Engineering, MANIT Bhopal, India. September 2013 onwards.
  - National Technical Committee: Global Conference on Renewable Energy, 19-21<sup>st</sup> October 2015, organized by Department of Mechanical Engineering, NIT Patna, India and WEENTECH, Coventry, UK.
  - International Technical Committee: International Seminar on Renewable Energy and Sustainable Development, 15-17<sup>th</sup> June 2015, organized by College of Science and Technology, Royal University of Bhutan, Bhutan and WEENTECH, Coventry, UK.
  - International Conference Organized: 03 (Environment and Energy, Agriculture, Horticulture and Environmental Engineering, Hydraulics, Water Resources, Coastal and Environmental Engineering).
  - Editor/Associate Editor: Int. J. Frontier Technol., Int. J. Chem. Res., Int.J. Knowledge Eng., Int. J. Frontier Technol., Academic Journals Online. J. Ecol. Environ. Sci., Int. J. Chem.Technol. Res.
  - Peer Reviewer: Chem. Eng. J, Ind. Eng. Chem. Res., J. Hazard. Mater, CLEAN - Soil, Air, Water, Can. J. Chem. Eng., Bioremed. J, Braz. J. Chem.Eng., Int. J. Environ. Res., J. Ind. Eng. Chem., Sep. Sci. Tech., Chem. Eng. Commun., J. Integrative Environ.Sci., Exp.Therm. Fluid Sci., J. Inst. Eng. (India): Series E, Adsorp., Int.J. Chem. Res., Environ. Eng. Manage. J., International Energy Journal, Regional Energy Resources Information Center, Asian Institute of Technology and other reputed Journals.
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- **Program convener**, 2<sup>nd</sup> International Conference on “Global Scenario in Environment and Energy” (ICGSE<sup>2</sup> 2016), jointly organized by Department of Chemical Engineering and Energy Centre, MANIT Bhopal, India, July 14-16, 2016.
  - **Advisory Board Member**: National Conference on “Bioresources as a key to value added products” organized by Department of Biotechnology, Institute of Engineering & Technology, Mangalayatan University, Aligarh, UP, India, April 29-30<sup>th</sup> 2016.
  - **Advisory Board Member**: National seminar on “Green Techno-economical Approches in Development of smart city: Role of Science & Technology”, organized by Department of Chemical Engineering, Indore Institute of Science & Technology, Indore, India, July 22-23<sup>th</sup> 2016.
  - **Advisory Board Member**: National workshop on “ An innovative approach towards recent trends and advancements in renewable energy sources & **Technologies, organized by Department of Chemical Engineering, IPS Academy, Indore, India, 2016.**
  - **Technical Committee Member**: International Conference on Advances on Clean Energy Research, Bangkok, Thailand, April 16-18<sup>th</sup> 2016.
  - **Conference chair & Coordinator**: Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  - **Organizing Secretary, 3<sup>rd</sup> International Conference on “Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”,** MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015.
  - **Joint organizing secretary, 4<sup>th</sup> National Convention on Hydrogen Energy and Advanced Materials,** November 28-29, 2015, MANIT Bhopal in association with University of Kerala.
  - **Coordinator, International Yoga day workshop,** June 21, 2015.
  - **Joint organizing secretary, International Conference on “Hydraulics, Water Resources, Coastal and Environmental Engineering”,** MANIT Bhopal, Dec.18-20, 2014.

- **Organizing secretary, International Conference on “Emerging trends on Agriculture, Horticulture and Environmental Engineering”**, MANIT and Janparishad, Bhopal, Nov.8-10, 2014.
- **Coordinator, Short-term training program on “Green Chemistry and Engineering: Past, Present and Future”**, 30<sup>th</sup> July-4<sup>th</sup> June, 2014, sponsored by TEQIP-II, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
- **Coordinator, Short-term training program on “Bio-energy conversion technologies”**, 24-28 December, 2013, sponsored by TEQIP-II, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
- **Program convener, 1<sup>st</sup> International Conference on “Global Scenario in Environment and Energy” (ICGSE<sup>2</sup> 2013)** sponsored by TEQIP-II, MANIT Bhopal, March14-16, 2013.
- **Coordinator, Short-term course on “Green Catalysis For Industrial Applications”**, 07-11 May, 2012, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
- **Coordinator, Two weeks Workshop on “Heat Transfer”**, Nov’ 29-Dec’ 10, 2011, Under the National Mission on Education through ICT (MHRD, Govt. of India) & IIT Bombay.
- **Coordinator, Short-term course on “Recent Trends in Industrial Pollution and Energy Management”**, 09-13 May, 2011, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
- **Member**, National Innovation Clubs, Rashtrapati Bhavan, New Delhi, India, 10 March, 2015
- **Editor**, International Journal of Frontier in Technology (MANIT Journal), May 2014 onwards.
- **Institute level solid waste management committee member**, December 2014 onwards. Solid waste management through urban development, national green tribunal.
- **Warden**, New Hostel (Energy Centre), MANIT Bhopal, July 2012-July 2013.
- **Warden**, Hostel No.8, MANIT Bhopal, July 2013-July 2014.
- **Faculty recruitment coordinator**, Department of Chemical Engineering, MANIT, Bhopal.
- **Instrumental as Head in launching academic programme–M.Tech. (Chemical Process Design)**, B.Tech syllabus committee member, MANIT, Bhopal, India.
- **DRPC Coordinator**, Faculty Convener, Chemical Engineering Association and IICHe students chapter coordinator, Departmental Infrastructure coordinator, Departmental library coordinator, B.Tech project coordinator, Board of Studies (BOS) member, Examination coordinator, Convocation coordinator, Department of Chemical Engineering, MANIT, Bhopal, India.
- **CAD laboratory**: Computers with all latest facilities designed from R & D project.
- **Industrial Pollution Abatement and Mass Transfer laboratories** faculty In-charge and its manual framed, Department of Chemical Engineering, MANIT, Bhopal, India.
- **Heat transfer laboratory: Experimental conducting in-charge**, Department of Chemical Engineering, MANIT, Bhopal, India.
- **Observer** for various National levels Examination JEE, 21<sup>st</sup> National Children Science Congress, MPCST Bhopal, India.
- **External examiner** at Ujjain Engineering College, Ujjain, M.P, MITS, Gwalior, M.P, IPS Academy, Indore, M.P, SAMRAT Ashok Technological Institute, Vidisha, M. P, India, LNCT, Bhopal, India.
- **Subject expert** at LNCT, Bhopal, M.P for faculty recruitment, 2015.
- **Technical Committee**: International Conference on Green Computing and Technology, Organized by the SIES Graduate School of Technology, September 05 -06, 2013, Navi Mumbai.

- **Organizing Committee:** Third IFIP International Conference on Bioinformatics, Organized by Department of Mathematics, MANIT Bhopal, September 23 -26, 2013.
- **Organizing Committee:** 1<sup>st</sup> International Conference on Mechanical Engineering: Emerging trends for sustainability, Organized by Department of Mechanical Engineering, MANIT Bhopal, January 29-31, 2014.
- **Executive member** - Association of Chemical Engineering Students, 2003-2004, Pondicherry Engineering College (PEC), Puducherry, India.
- **Head-Engineering Advising committee-** J-O-U-R-N-E-Y-Multipurpose Social Service & Society Development Centre, 2006-till data, Puducherry, India.

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## PUBLICATIONS

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### *IN BRIEF:*

Patent filed <b>02</b>	Book series <b>05+03</b>	Book chapter <b>14+05</b>	Journal <b>54+13</b>	Presentation <b>77+02</b>	Invited Talk <b>18</b>
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A selection of recent journal publications, artistic productions, books, including book and report excerpts. See all publications in the database (<http://scholar.google.co.in/citations?user=WgcujRQAAAAJ>)

### Patents

1. Suresh S, Silica-Titanium Dioxide doped Photocatalyst, and a Reactor Vessel for Effluent Treatment. Indian Patent No. 1599/MUM/2015 dated 18/04/2015.
2. Suresh S, Abbasi S.A. "Pilot plant wastewater treatment using novel SHEFROL technology", Indian National Committee on Hydrology/The Indian National Committee on Ground Water, MoWR project, TIFAC (DST), Indian patent, (Communicated). 2014.

### Books/Chapters

1. Suresh S, Srivastava V.C., Mishra I.M. "Oxygen Mass Transfer in Bioreactors" *Elsevier, Comprehensive Biotechnology*, Vol. 2, 947-956 (ISBN: 978-0-08-088504-9), 2011.
2. Suresh S, Keshav A. "Textbook of Separation Processes", *Studium Press (India) Pvt. Ltd* (ISBN: 978-93-80012-32-2), 1-459, 2012.
3. Suresh S, Sudhakar K., "Global Scenario in Environment and Energy", BS Publisher (India), Pvt. Ltd, (ISBN: 978-81-7800-286-6), 1-424, 2013.
4. Suresh S, Sundaramoorthy S, "Green Chemical Engineering: An introduction to Catalysis, Kinetics and Chemical processes", *CRC Press, Taylor & Francis Group*, (ISBN: 9781466558830), 1-530, 2015.
5. Suresh S, Shrivastava M, Srivastava E., "Emerging trends in Agriculture, Horticulture and Environment Engineering" Janparishad and MANIT Bhopal (ISBN: 978-93-5196-081-2), 1-302, 2014.
6. Suresh S, Tiwari, H.L., Jaiswal, R.K., "Hydraulics, Water Resources, Coastal and Environmental Engineering", Excellent Publishing House (ISBN: 978-93-84935-04-7), 1-1432, 2014, Vol I and II.
7. Suresh S, Arisutha S, "Membrane Contactor Technology-An introduction and case study of fertilizer industry effluent, Chapter 20. In: Fertilizer Technology I: Synthesis, *Studium Press (India) Pvt. Ltd*, (ISBN: 978-1-62699-044-9), 1-694, 2015.
8. Suresh S, "Fluid mixing and power consumption in shake flask" *Encyclopedia of Industrial Biotechnology*, John Wiley & Sons, Inc. (Accepted), 2016.
9. Suresh S., Sachin Kumar Sharma, Éric Dumont, "Desulphurization: An Introduction to Technologies and Processes. Springer, (under progress), 2016.



10. Suresh S., Vishnu Pandey, Environmental Pollution, Control, and Challenges, McGraw Hill (under progress), 2016.
11. Suresh S., S. Arisutha, S. Sakthivel, Amit Keshav, Appukuttan K K., Biomass Conversion Technology, Oxford Press, (under progress), 2016.
12. Suresh S, Shrivastava M, Srivastava S., “Environmental Friendly Agriculture & Horticulture in planning of a smart city” MANIT Press, Saksham Publisher (ISBN: 978-93-5196-081-2), 1-202, 2015.
13. Suresh S, Keshav A. “Textbook of Transport Phenomenon for Fluid Flow and Heat Transfer”, Sunidhi Info Solutions Private Limited (Accepted), 2015.
14. Khushibu Kumari, Suresh S, Arisutha S, A Review on hydrogen and methane production using anaerobic digestion. Chapter 1. In: Hydrogen Energy and Advanced Materials proceedings, *BS Publications Press (India) Pvt. Ltd.*, (ISBN: 978-93-5230-085-3), pp.1-12, 2015.
15. Shuchi Mittal, Anviti Chaurasiya, Khushboo Kumari, S. Arisutha and Suresh S, Bioconversion of temple/floral wastes using anaerobic digester. Chapter 9. In: Hydrogen Energy and Advanced Materials proceedings, *BS Publications Press (India) Pvt. Ltd.*, (ISBN: 978-93-5230-085-3), pp.78-84, 2015.
16. Abhinav Rai, Sachin Koshti, S. Arisutha and Suresh S., Integrated Microbial fuel cell: An Experimental Approach. Chapter 10. In: Hydrogen Energy and Advanced Materials proceedings, *BS Publications Press (India) Pvt. Ltd.*, (ISBN: 978-93-5230-085-3), pp.85-91, 2015.
17. Suresh S, Srivastava V.C., Mishra I.M. Shake flask engineering In: Power consumption in shake flask, *Encyclopedia of Industrial Biotechnology: Bioprocess, Bioseparation, and Cell Technology*, John Wiley & Sons, Inc. (In press), 2015.
18. Suresh S, Arisutha S, Global scenario in Environment and Energy, In: Study Of Standalone Solar, Wind And Biomass For Rural Electrification: An Overview, BS publication (ISBN: 978-81-7800-286-6) 2<sup>nd</sup> chapter, Vol. 1, 2013.
19. Suresh S, J. Gopalakrishnan, Ganga Agnihotri, D. M. Deshpande, Global scenario in Environment and Energy, In: Role of Cathodic Protection In Energy Security And Environmental Protection. BS publication (ISBN: 978-81-7800-286-6) 5<sup>th</sup> chapter, Vol. 1, 2013.
20. Suresh S, Varsha Jain, Ranjana Juneja, Nupur Gupta, Aditi Mandloi, Shaktinath Das, Rajesh Babu Katiyar, Global scenario in Environment and Energy, In: Plasma Technology: A Brief Primer Solid Waste Management. BS publication (ISBN: 978-81-7800-286-6) 6<sup>th</sup> chapter, Vol. 1, 2013.
21. Suresh S, Sachin Kumar, Removal of Dyes from Textile Wastewater using Photo-Oxidation: A review paper on current technology. BS publication (ISBN: 978-81-7800-286-6) 5<sup>nd</sup> chapter, Vol. 1, 2013.
22. Suresh S, Rajesh Babu Katiyar, A. K. Sharma, Global scenario in Environment and Energy, In: Municipal Solid Waste Management In Bhopal, India-A Review, BS publication (ISBN: 978-81-7800-286-6) 6<sup>th</sup> chapter, Vol. 1, 2013.
23. Suresh S and Pandey J K., Use and utilization of sisal plant- a minireview, chapter. In: Emerging trends in Agriculture, Horticulture and Environment Engineering. Janparishad and MANIT Bhopal (ISBN: 978-93-5196-081-2), pp.1-302, 2014.
24. S. Arisutha, R.B. Katiyar, Suresh S., Technological Utilization of Parthenium Hysterophorus-A Review. Chapter. In: “Hydraulics, Water Resources, Coastal and Environmental Engineering” Excellent Publishing House (ISBN: 978-93-84935-04-7), 1-1432, 2014, Vol I.
25. Suresh S, Special Journal issue “Global Scenario in Environment and Energy”, International Journal of ChemTech Research 5 (2), April-June, 2013.
26. Suresh S, Tiwari, HL, “Hydraulics, Water Resources, Coastal and Environmental Engineering”, Int. Journal of Engineering and Technology, 3, March, 2014.

## **Journal Publications**

1. Suresh S, Srivastava V.C., Mishra I.M. Critical analysis of engineering aspects of shaken flask bioreactors. *Crit. Reviews Biotechnol.* 2009; 29(4): 255–278.
2. Suresh S, Srivastava V.C., Mishra I.M. Techniques for oxygen transfer measurement in bioreactors: a review *J. Chem. Technol. Biotechnol.* 2009; 84: 1091–1103.
3. Suresh S, Srivastava V.C., Mishra I.M. Kinetic Modeling and Sensitivity Analysis of Kinetic Parameters for L-Glutamic Acid Production Using *Corynebacterium glutamicum* *Int. J. Chem. React. Eng.* 2009; 7 (A89): 1-14.
4. Suresh S, Srivastava V.C., Mishra I.M. Isotherm, Thermodynamics, Desorption, and Disposal Study for the Adsorption of Catechol and Resorcinol onto Granular Activated Carbon. *J. Chem. Eng. Data (ACS)*. 2011, 56 (4), 811–818.
5. Suresh S, Srivastava V.C., Mishra I.M. Adsorptive removal of phenol from binary aqueous solution with aniline and 4-nitrophenol by granular activated carbon *Chem. Eng. J.* 2011, 171 (3), 997-1003.
6. Suresh S, Srivastava V.C., Mishra I.M. Adsorption of Hydroquinone in Aqueous Solution by Granulated Activated Carbon *J. Environ. Eng. (ASCE)*.137(12), 1145-1157, 2011.
7. Suresh S, Srivastava V.C., Mishra I.M. Study of Catechol and Resorcinol Adsorption Mechanism through Granular Activated Carbon Characterization, pH and Kinetic Study. *Sep. Sci. Technol.* 46(11), 1750 - 1766, 2011.
8. Suresh S, Ramesh Raja D. Treatment of Tannery Wastewater by Various Oxidation and Combined Processes. *Int. J. Environ. Res.* 2011; 5(2), 349-360.
9. Suresh S., S. Kamsonlian, C. Balomajumder, S. Chand. Biosorption of Cd (II) and As (III) ions from aqueous solution by tea waste biomass. *Afr. J. Environ. Sci. Technol.*. 2011; 5(1), 1-7.
10. Suresh S. Biodegradation of Hydroquinone Using Sequential Batch Reactor: A Preliminary Study of Industrial Effluent *Res. J. Chem. Environ.*15 (2), 2011.
11. Suresh S, Ravi Shankar, Chand, S. Treatment Of Distillery Wastewater Using Catalytic Wet Air Oxidation. *J. Fut. Eng. Technol.* 6, 1, 2011.
12. Suresh S, Ravi Kant Tripathi and M. N. Gernal Rana. Review On Treatment Of Industrial Wastewater Using Sequential Batch Reactor. *Int. J. Sci. Technol. Manage.* 2 (1), 64-84, 2011.
13. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Biosorption of As(v) from contaminated water onto tea waste biomass: sorption parameters optimization, equilibrium and thermodynamic studies. *J. Fut. Eng. Technol.* 7l (1), 34-41, 2011.
14. Suresh S, Sudhakar K, Premalatha M. An overview of CO<sub>2</sub> mitigation using algae cultivation technology. *Int. J. Chem. Res.* 3 (3), 110-117, 2011.
15. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Characterization of Banana and Orange Peels: Biosorption Mechanism *Int. J. Sci. Technol. Manage.* 2(4), 1-7, 2011.
16. Suresh S, Srivastava V.C., Mishra I.M. Adsorptive removal of aniline by granular activated carbon from aqueous solutions with catechol and resorcinol *Environ. Technol.* 33 (7), 773-781, 2012.
17. Suresh S, Verma V., Keshav A, Soni A.B. Removal of Glycolic Acid From Aqueous Solution using Bagasse Flyash. *Int. J. Environ. Res.* 6(1):297-308, 2012.
18. Suresh S, Kamsonlian S., Ramanaih V, Majumder C.B., Chand S., Kumar A. Biosorptive behaviour of mango leaf powder and rice husk for arsenic (III) from aqueous solutions. *Int. J. Environ. Sci. Technol.* 9:565–578, 2012.
19. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Biosorption of As(III) from contaminated water onto low cost palm bark biomass. *Int. J. Current Eng. Technol.* 2(1), 153-158, 2012.
20. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Biosorption of Arsenic from Contaminated Water onto Solid Psidium guajava Leaf Surface: Equilibrium, Kinetics, Thermodynamics, and Desorption Study. *Bioremed. J.* 16(2):97–112, 2012.

21. Suresh S., Vijayalakshmi G., Rajmohan B. and Subbaramaiah V., Adsorption of Benzene Vapor onto Activated Biomass from Cashew Nut Shell: Batch and Column Study. *Recent Patents Chem. Eng.* 5(2), 116-133, 2012
22. Suresh S, Rajesh P., Prasad B. Use of granular activated carbon for the enhancement of phenol removal from wastewater by Electrocoagulation. *Int. J. Biol. Sci. Eng.* 3: 223-228, 2012.
23. Suresh S, A.Sharma, Dubey A. Properties and Characteristics of Sisal Fibre Reinforced Composite. *J. Adv. Mater. Res.*, Trans Tech Publishers. 85: 322-326, 2012
24. Suresh S. Adsorption of Benzoic Acid in Aqueous Solution by Bagasse Fly Ash. *J. Inst. Eng. India Ser. A.*, 2012, 93, 3, 151-161.
25. Suresh S, Srivastava V.C., Mishra I.M. Adsorption of catechol, resorcinol, hydroquinone and its derivatives: A review. *Int. J. Energy Environ. Eng.* 3, 32, 1-19, 2012.
26. Suresh S, Srivastava V.C., Mishra I.M. Removal of 4-nitrophenol from binary aqueous solution with aniline by granular activated carbon using Taguchi's design of experimental methodology. *Theoretical Foundations of Chem. Eng.* 2013, 47, 3, 284–290.
27. Suresh S, Srivastava V.C., Mishra I.M. Studies Of Adsorption Kinetics And Regeneration Of Aniline, Phenol, 4-Chlorophenol And 4-Nitrophenol By Activated Carbon. *Chem Ind. Chem. Eng. Q.* 2013, 19 (2) 195–212.
28. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Biosorption of Arsenic by Mosambi (*Citrus limetta*) Peel: Equilibrium, Kinetics, Thermodynamics and Desorption Study. *Asian J. Chem.* 2013,25, 5, 2409-2417.
29. Suresh S, Shubham Gupta, Vikram Uday, Amit Singh Raghuwanshi, Samarth Chowkshey, Shakti Nath Das, Simulation of Blow Molding Using Ansys Polyflow, *APCBEEES Procedia* 5, 468-473, 2013.
30. Suresh S, Pramoda K, H. S. S. Ramakrishna Matte, A. Govindaraj, CNR. Rao. Graphene composites containing chemically bonded metal oxides. *Bulletin of Materials Science.* 2013, 36, 4, 585–590.
31. Suresh S, S. Arisutha, Arvind Mittal and K. Sudhakar, D.M. Deshpande. An energy efficient microcontroller based digital solar weighing machine. *IEEE Xplore*, 2013, 14-16, (978-1-4673-6027-2).
32. Suresh S, Arisutha S., Sachin Kumar Sharma, Production of Renewable Natural Gas from Waste Biomass. *J. Inst. Eng. India Ser. E (2013) 94:55-59*
33. Suresh S, Kusuma Ravi Teja and S. Chand. Catalytic wet peroxide oxidation of azo dye (Acid Orange 7) using NaY zeolite from coal fly ash. *Int. J. Environ. Waste Manage.* 2014, 14, 4, 338-357.
34. Suresh S, Gota, KR, Preparation and its application of TiO<sub>2</sub>-ZrO<sub>2</sub> and TiO<sub>2</sub>-Fe photocatalysts. *Asian J. Chem.* 26, 21 (2014), 7087-7101.
35. Arisutha S., Suresh S., Prashant Baredar, D.M. Deshpande, Evaluation of Methane from Sisal Leaf Residue and Palash Leaf Litter. *Journal of The Institution of Engineers (India): Series E.* 95(2):105–110, 2014.
36. Suresh S, Gota, KR, Sanago S., Photocatalytic degradation of phenolic compounds using Halogen/H<sub>2</sub>O<sub>2</sub> /TiO<sub>2</sub> Process in Aqueous Solution. *Int. J. Current Eng. Technol.*, (2014) 4, 156-159
37. Tiwari H. L., Goel A., Suresh S. and Tiwari S. Effect of Inverted T- Shape Splitter Blocks on the Performance of Stilling Basin Models. *Aquatic Procedia* 4 (2015) 1561–1568.
38. Arisutha S., Suresh S., Prashant Baredar, D.M. Deshpande, Effects of Thermo-Chemical Pre-Treatment on Bamboo for Biogas Production. *Indian Chemical Engineer.* 1 (2016), 58 79-88.

39. Suresh S, Priyanka Gautam, Piyush Pratap Singh, Animesh Mishra Abhishek Singh Shakti Nath Das. Simulation of Reactive Distillation Column *International Journal of ChemTech Research*, 5, 2, 1024-1029, 2013.
40. Suresh S, Meena Solanki, Shaktinath Das, Kanchan Shukla. Treatment Of Real Textile Wastewater Using Coagulation Technology *International Journal of ChemTech Research*, 5, 2, 610-615, 2013.
41. Suresh S, Animesh Mishra, Abhishek Pandey, Prateek Maheshwari, Abhishek Chouhan, Shaktinath Das. Green Cement for Sustainable Concrete Using Marble Dust. *International Journal of ChemTech Research* 5, 2,616-622, 2013.
42. Suresh S, Rajesh Babu Katiyar, A. K. Sharma. Characterisation Of Municipal Solid Waste Generated by The City of Bhopal, India *International Journal of ChemTech Research*, 5, 2,623-628, 2013.
43. Suresh S, Ravi Shankar, Chand, S. Treatment Of Distillery Wastewater Using Catalytic Wet Air Oxidation. *J. Fut. Eng. Technol.* 6, 1, 2011.
44. Suresh S, Ravi Kant Tripathi and M. N. Gernal Rana. Review On Treatment Of Industrial Wastewater Using Sequential Batch Reactor. *Int. J. Sci. Technol. Manage.* 2 (1), 64-84, 2011.
45. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Biosorption of As(v) from contaminated water onto tea waste biomass: sorption parameters optimization, equilibrium and thermodynamic studies. *J. Fut. Eng. Technol.* 7l (1l), 34-41, 2011.
46. Suresh S, Sudhakar K, Premalatha M. An overview of CO<sub>2</sub> mitigation using algae cultivation technology. *Int. J. Chem. Res.* 3 (3), 110-117, 2011.
47. Suresh S, Kamsonlian S., Majumder C.B., Chand S. Characterization of Banana and Orange Peels: Biosorption Mechanism *Int. J. Sci. Technol. Manage.* 2(4), 1-7, 2011.
48. Anil Kumar, Biswajit Mandal, Prashant Baredar, Suresh S., Effect of Process Parameters on Biogas Production from Floating Drum Digester. *Int. Journal of Frontier in Technology*, 2014, 1, 4-10.
49. Suresh S, Diwedi A, Shakti Nath das, Nupur Gupta, Simulation of Reactive Distillation Column for Methyl Tertiary Butyl Ether Synthesis. *Int. Journal of Frontiers in Technology* 12/2014; 1(2):17-21.
50. Arisutha S, Prashant Baredar, D.M. Deshpande and S. Suresh, A Curious About Enhancement of Biogas Production Through Solar Energy, Springer proceeding, 2015.
51. Saraswati R, Suresh S. A Review on Fixed film reactor for wastewater treatment. *Int. Journal of Engineering and Technology*, 4(3), 2014), 155-159.
52. Saraswati R, Suresh S. Review on modify fixed film reactor for biological treatment, *Int. Journal of Frontiers in Technology*. 3, 2015.
53. Suresh S, Chandrasekhar, G. Production of Bioethanol from Cashew Waste. *Pet. Conser. Res. Assoc.* Oct – Dec, 2009: 16-17.
54. Suresh S, Rajesh Babu Katiyar, A. K. Sharma. Solid waste management in Bhopal (India): present and future challenges. *Ultra Chemistry* Vol. 9(2), 197-214 (2013).

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#### **Publication intended for professional communities**

1. Suresh S, Tiwari, H.L., Mittal, S.K., Desmukh T.S., Sharma, A.K., Jaiswal, R.K., 19<sup>th</sup> International conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, Conference Souvenir, pp.150+xvii, Dec 18-20, 2014.
2. Suresh S, Industrial Pollution Abatement and Mass Transfer laboratories manual framed, Department of Chemical Engineering, MANIT, Bhopal, India.

---

#### **Publication intended for the public linked to the applicant's research**

1. Suresh S, Abbasi S A, Gajalakshmi S, Nothing fancy, two aquatic plants do the trick, *The Hindu and Dinamalar* (India's National Newspaper), Wednesday, Jun 14, 2006.

2. Suresh S, Abbasi S A, Technology for wastewater treatment, Technology Scan-TECH MONITOR, *A National Magazine*, July-Aug, 2006: 9-10.
3. Suresh S, Laboratory scale biogas technology, *The Patika* (India's National Newspaper), Saturday, Sep 15, 2012
4. Suresh S, Demonstration of Laboratory scale biogas technology, Telecasted on *Doordarshan National TV*, Saturday, Sep 15, 2012.

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### Public artistic and design activities

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1. Rana, Suresh S, Adsorption column model for water treatment by using activated campus waste, *Student Technosearch*, MANIT Bhopal, India, March 2011.
2. Ravi Tripathi, Suresh S. Production of electricity using low-cost biomass, *Techfest*, Indian Institute of Technology, Bombay, India. Jan. 2011.
3. Sachin, Rai, Electrochemical treatment model, presented at International conference on Advances in Chemical Engineering (ICACE2015), organized by Department of Chemical Engineering, NITK, 20-22<sup>th</sup> December 2015.
4. Suresh S, Arisutha S. Modeling and parameter optimization of biogas production from sial leaf residue, palash leaf litter and bamboo chips, 103<sup>rd</sup> Indian Science Congress 2016, Indian Science Congress Association and University of Mysore, Mysore from 3-7 January 2016.

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### Audiovisual material, ICT software

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1. Suresh S, Heat Transfer course material presentation taught under the National Mission on Education through ICT (MHRD, Govt. of India) & IIT Bombay, Nov' 29-Dec' 10, 2011.

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### Manuscripts in progress

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1. Suresh S, Sachin Kumar Sharma, Waste to Energy Conversion: A Short Case Study of Catalysts Application. *Journal of Cleaner Production*. Revised 2015
  2. Suresh S, Prena Sen, S.N. Das, Treatment of dairy effluents and brine sludge by using Combined Coagulation-Electrochemical process, *Chem. Eng. J*, 2015.
  3. Rajani Bharati, Suresh S, Synthesis of ZnO based nanocatalyst with palash flower powder for degradation of phenol. *Materials, Energy and Environment Engineering, Springer series*, 2015.
  4. Abhinav Rai, Sachin Koshti, Prerna Sen, S. Arisutha and S. Suresh, Optimization of Engineering and Process Parameters for Electro-chemical treatment of textile wastewater. *Recent Advances in Chemical Engineering, Springer series*, 2015.
  5. Rajani Bharati, Suresh S, Synthesis of ZnO/Palash flower extracts nanocatalyst for phenol degradation. *Journal of Materials and Manufacturing Processes*, 2015.
  6. Rajani Bharati, Suresh S, Green Synthesis of ZnO nanocatalyst with palash leaves Extract for Acenaphthylene degradation from petrochemical industrial wastewater. *Advanced Materials Letters*. 2015.
  7. Snigdha Mandal, Abhinav Rai, Sachin Koshti, Arisutha S. and Suresh S. Performance of Microbial fuel cell and its dynamic parameters control through MATLAB simulation. *Lecture notes in Computer Science (LNCS), Springer*, 2015.
  8. Singh S, Suresh S, Microbial fuel cells (MFCs): A suitable technology for wastewater treatment, bioenergy and bioproducts. *Journal of Biofuels and Bioenergy*, 2015.
  9. Shivali Sahota, Khushhali M. Pandey, Suresh S, and Sachin Kumar. Biological pretreatment of Water hyacinth (*Eichhornia crassipes*) for biofuel production. *Journal of Biofuels and Bioenergy*, 2015.
  10. Shivali Sahota, Jaspreet Singh, Pawan Kumar, S.Suresh, Khushhali Pandey, Contaminant sensors in food industry, chapter, In: *NanoScience in Food Chemistry book series (Multi volume), Elsevier*, revised, 2015.
-

11. Rajani Bharti, Chandrakant Thakur, S. Suresh, Nanomaterials and food processing wastewater, chapter, In: *Nanotechnology in Food industry book series (Multi volume)*, Elsevier, Revised, 2015.
12. Suresh S., V.C. Srivastava, S. Sakthivel, V. Prasanna and S. Arisutha, Kinetic modeling of ethanol production for substrate-Microbe system. *Springler-Verlag, Germany*, 2015.
13. Suresh S., S. Sakthivel, V. Prasanna and S. Arisutha, Biofuel/Bioenergy-Technical and Economic viability in India. In: Biorefining of Biomass to Biofuels-Opportunities and Perception. *Springler-Verlag, Germany*, 2015.
14. Suresh S., Shah G., Curious About Oily Sludge/ Wastewater and Its Treatment Method, Separation and Purification Technology, 2016.
15. Suresh S., Batsuren Sundui, Nanthiya Saeteaw, Thusitha Rathnayake, Parichaya Sangworakan, Prattana Suksiri, Suttinee Jairuang, Sitichok Tepin, Wattanapong Sangchun, Application of water quality modelling to analyse the impact of wastewater discharges on Chaya Phraya River and Songkhla Lake in central Thailand. *ISH Journal of Hydraulic Engineering*, 2016.
16. Suresh S., Indrajit Pal, Hydro-Meteorological Hazards, Urbanizations and Small and Medium Business and Enterprises in Coastal Urban Areas - a case of 2015 Chennai Flood (INDIA), Disaster Prevention and Management, 2016.
17. Michael Malabeja, Oleg Shipin, S.Suresh, Wim J.A.M. Douven, Rubhera RAM Mato, Integrated Evaluation for Sustainability and Climate Compatibility of Wastewater Management in Tropical Eco-Cities: Case Study of Tanzania Coastal Area, *Journal of Environmental Management*, 2016.
18. S. Suresh, A. Datta, R. B. Katiyar and A.K. Sharma, Optimization of Engineering and Process Parameters for Vermicomposting, *Bioresource Technology*, 2016.

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### **Presentations and Poster Sessions**

Some of countries travelled for invited talks namely, USA, UAE, Singapore, Malaysia, Maribor-Slovenia, Italy, Thailand and other part of India.

1. A Review on enhancement of biogas yield by pre-treatment and addition of additives. International Conference on Advances on Clean Energy Research. Chateau de Bangkok Hotel, Bangkok, *Thailand*, April 16-18, 2016.
2. Sustainable energy and Technology Asia 2016, Bangkok International Trade & Exhibition Centre, 23-25<sup>th</sup> March 2016.
3. Utilizing Earthworm *Eisenia fetida* in Vermicomposting of Biogas slurry with mixed crop litter and cow dung, 27<sup>th</sup> Symposium of Malaysian Chemical Engineers, *Taylor's University, Malaysia*, 29-30 Oct, 2014.
4. Utilization of mixed agricultural residues and cow dung into value-added products: A Case study, International Conference on Sustainable Energy & Environmental Protection, Univerza v Mariboru, *Maribor-Slovenia*, 20-23 August 2013.
5. Simulation of Blow Molding Using ANSYS Polyflow, 4th International Conference on Environmental Science and Development, *Dubai, UAE*, Jan 19-20, 2013.
6. Adsorption of Aniline, Phenol, 4-Chlorophenol and 4-Nitrophenol Onto Granular Activated Carbon: Isotherm, Thermodynamics and Relationship with Solvatochromic Parameters (749f), 12 AIChE Annual Meeting, *Pittsburgh, PA, USA*, October 28- November 2, 2012.
7. An Overview of Sustainable Power Development of Auroville Village. International Conference on Science, Technology and Social Science 2012. Universiti Teknologi MARA Pahang, *Malaysia*. Nov 20-22, 2012.
8. Preparation of nanocelluloses from sisal plants (Agave Sisalana). Winter School on Chemistry and Physics of Materials, jointly organized by International Centre for Materials Science at Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore and Cambridge University, *UK* Dec 5-10, 2011.

9. An overview of micro-algae: carbon sequestration and bio diesel in Indian scenario ICAE 2011 - International Conference on Applied Energy, Perugia, Italy. May 16-18, 2011.
  10. Catalytic desulphurization for the removal of sulfur compounds using chemical oxidative process. 5<sup>th</sup> International Conference on Environmental Science and Technology, American Academy of Sciences, Hilton Hotel, Houston, Texas, USA. July 12-16, 2010.
  11. Studies on simultaneous adsorption of aniline and catechol onto granular activated carbon. International conference on Chemical Engineering and Biotechnology 'ChemBiotech' 09-10, NUS, Singapore. Jan 28-29, 2010.
  12. Removal of phenol by electro-coagulation: granular activated carbon as a enhancement factor. 63<sup>st</sup> Annual Session of CHEMCON-2010 organized by IChE & Annamalai University, India. Dec.27-30, 2010.
- 
13. Snigdha Mandal, Abhinav Rai, Sachin Koshti, S. Arisutha and S. Suresh. Performance of Microbial fuel cell and its dynamic parameters control through MATLAB simulation. International Conference on Advances in dynamics, Vibration and Control (ICADVC2016), NIT Durgapur. February 25-27<sup>th</sup> 2016.
  14. Khushibu Kumari, Suresh S, Arisutha S, A Review on hydrogen and methane production using anaerobic digestion. 4<sup>th</sup> National convention on hydrogen energy and advanced materials, 28-29<sup>th</sup> November 2015. Organized by Energy Centre, MANIT Bhopal.
  15. Shuchi Mittal, Anviti Chaurasiya, Khushboo Kumari, S. Arisutha and Suresh S, Bioconversion of temple/floral wastes using anaerobic digester, 4<sup>th</sup> National convention on hydrogen energy and advanced materials, 28-29<sup>th</sup> November 2015. Organized by Energy Centre, MANIT Bhopal.
  16. Abhinav Rai, Sachin Koshti, S. Arisutha and S. Suresh, Integrated Microbial fuel cell: An Experimental Approach. 4<sup>th</sup> National convention on hydrogen energy and advanced materials, 28-29<sup>th</sup> November 2015. Organized by Energy Centre, MANIT Bhopal.
  17. Khushibu Kumari, Suresh S, Arisutha S, A Current status of Integrated Anaerobic digester. 11<sup>th</sup> Annual session of students chemical engineering (SCHEMCON-2015), 12-13<sup>th</sup> September 2015, MIT Academy of Engineering, Alandi, Pune, Maharashtra, India
  18. Arisutha S, Suresh S, Prashant Baredar, A Curious About Enhancement of Biogas Production Through Solar Energy. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  19. Suresh S, S. Sakthivel, Arisutha S, Status of Technologies and feedstocks in India for biofuel production. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  20. Anushika Rani, Suresh S, Anilkumar, A Review on application of integrated solar and bioenergy based technology. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  21. Krishnakumar P, S. Arisutha, Prashant Baredar and S. Suresh, A Review on Pyrolysis of protein rich biomass. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  22. Rajkumar Malviya, S. Arisutha, Prashant Baredar, S. Suresh and Maya Malviya. Study on Electricity production by using blended biomass battery. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
  23. Singh S and Suresh S. Review on microbial fuel cell energy enhancement using nanomaterials. Biofuels and Bioenergy: International conference and Exhibition, 23-25

February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK

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24. Anushika Rani, Suresh S, Anilkumar, A Review on application of desalination in the agricultural field. Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”, Jointly organized by MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015
25. Singh S and Suresh S, Study on sustainable food waste treatment using microbial fuel cell technology. Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”, Jointly organized by MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015
26. Rajani Bharati, Suresh S, A Review on nanocatalysts from waste for production of biofuel-via-bioenergy. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
27. Rajani Bharati, Suresh S, Green Synthesis of ZnO nanocatalyst with palash leaves Extract for Acenaphthylene degradation from petrochemical industrial wastewater. International Conference on Materials Science & Technology (*ICMTech-2016*), organised by International Association of Advanced Materials (IAAM), University of Delhi and VBRI Press, 01 - 04 March, 2016.
28. Anushika Rani, Suresh S and Anilkumar, Performance analysis of different techniques for separation of sea water. 68<sup>th</sup> Annual session of Indian Institute of Chemical Engineers (CHEMCON2015), Organized by Department of Chemical Engineering, IIT Guwahati, 27-30<sup>th</sup> December 2015.
29. Rajani Bharati, Suresh S. Synthesis of ZnO/Palash flower extracts nanocatalyst for phenol degradation. ChEmference 2014, a two day national conference, organized by Department of Chemical Engineering, IIT Hyderabad, 5-6<sup>th</sup> December 2015.
30. Rajani Bharati, Suresh S, Synthesis of ZnO based nanocatalyst with palash flower powder for degradation of phenol. International conference on Advances in Chemical Engineering (ICACE2015), organized by Department of Chemical Engineering, NITK, 20-22<sup>th</sup> December 2015.
31. Abhinav Rai, Sachin Koshti, Prerna Sen, S. Arisutha and S. Suresh, Optimization of Engineering and Process Parameters for Electro-chemical treatment of textile wastewater. International conference on Advances in Chemical Engineering (ICACE2015), organized by Department of Chemical Engineering, NITK, 20-22<sup>th</sup> December 2015.
32. Rajani Bharati, Suresh S, Application of nanocatalysis in horticulture and agriculture based wastewater, Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”, Jointly organized by MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015
33. Prerna Sen, S. Suresh and Tungabidya Mahrana. A Review of environmental impact of brine sludge from chloro-alkali Industry. Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”, Jointly organized by MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015.
34. Katiyar RB, Suresh S, Sharma AK. A Review on composting of different leaf litter, Environmental Friendly Agriculture and Horticulture in Planning of a Smart City”, Jointly organized by MANIT, Janparishad and SusTanCon (USA), Bhopal, Dec.12-14, 2015.
35. Katiyar RB, Suresh S, Sharma AK. A Review on vermicomposting of different leaf litters. Biofuels and Bioenergy: International conference and Exhibition, 23-25 February, 2016, Jointly organized by Department of Chemical Engineering, MANIT Bhopal, India and WEENTECH, Coventry, UK.
36. Singh S, Suresh S, Microbial fuel cells (MFCs): A suitable technology for wastewater treatment, bioenergy and bioproducts” 1<sup>st</sup> International conference on “Recent Advances in



- Bioenergy research (ICRABR-2015) organized by SSS-NIRE, Kapurthala, Punjab, India, March 14-17, 2015.
37. Shivali Sahota, Khushhali M. Pandey, Suresh S, and Sachin Kumar. Biological pretreatment of Water hyacinth (*Eichhornia crassipes*) for biofuel production. 1<sup>st</sup> International conference on “Recent Advances in Bio-energy research (ICRABR-2015) organized by SSS-NIRE, Kapurthala, Punjab, India, March 14-17, 2015.

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  38. Shivali Sahota, Khushhali M. Pandey, Suresh, S. Recent advancement in biological pretreatment of lignocellulosic wastes and production of bioenergy. International Conference on Interdisciplinary Research in Engineering, Management, Pharmacy and Science, organized by SIRT, Bhopal during 19-22<sup>nd</sup> February 2015.
  39. Tiwari HL, Suresh S, Performance of Stilling Basin Models. International conference on water resources, coastal and ocean engineering (ICWRCOE 2015), Department of Civil Engineering, NIT Karnataka, March 12-14, 2015.
  40. Saraswati R, Suresh S. Fixed film reactor for wastewater treatment. 19<sup>th</sup> International conference on Hydraulics, Water Resources, Coastal and Environmental Engineering, Conference Souvenir, pp.150+xvii, Dec 18-20, 2014.
  41. Swati, R, Suresh S, Katiyar RB, Sharma AK, Fly ash: A suitable material for worm based technology. Proceeding of Emerging trends in Agriculture, Horticulture and Environment Engineering” Janparishad and MANIT Bhopal, 2014, pp. 1-302.
  42. Sharad S, Verma AK, Suresh S, Sharma AK, A Review on fly ash utilization for NO<sub>x</sub>/SO<sub>x</sub> remediation catalyst. Proceeding of Emerging trends in Agriculture, Horticulture and Environment Engineering” Janparishad and MANIT Bhopal, Nov.8-10, 2014, pp. 1-302.
  43. Tiwari, S. Singh, PP, Singh S, Suresh S, Tiwari, HL, A novel effluent treatment process for manufacturing organic fertilizer. Proceeding of Emerging trends in Agriculture, Horticulture and Environment Engineering” Janparishad and MANIT Bhopal, Nov.8-10, 2014, pp. 1-302.
  44. Preparation of titanium dioxide nano-particles for photocatalytic process-an overview, International Conference on Advanced Polymeric Materials (ICAPM 2013), Mahatma Gandhi University, Kottayam, Kerala, India, 11-13<sup>th</sup> October **2013**
  45. Utilization of mixed agricultural residues and cow dung into value-added products: A Case study, International Conference on Sustainable Energy & Environmental Protection, Univerza v Mariboru, Maribor-Slovenia, 20-23 August **2013**.
  46. Recovery of picolinic acid from aqueous stream by reactive extraction, International conference on Advances in Chemical Engineering, Department of Chemical Engineering, National Institute of Technology Raipur, Chhattisgarh, India April 8-9, **2013**.
  47. Study of Linear Low Density Polythene And Its Blend Using Mixed Culture Compost. International Conference, APA 2013 on “Polymers on the Frontiers of Science and Technology” under the auspices of European Polymer Federation (EPF) at Punjab University, Chandigarh on February 21-23, **2013**.
  48. Application of surfactants to enhanced oil recovery from Petroleum Industry- A Review, *International Conference On Advances in Chemical Engineering (ACE–2013)*, Department of Chemical Engineering, IIT Roorkee, Feb 22 – 24, **2013**.
  49. Wear and Frictional Properties of Sisal Fibre Reinforced Composite. *International Conference on Advances in Materials and Processing: Challenges and Opportunities*, Department of Metallurgical & Material Science, IIT Roorkee, Nov, 2-4, **2012**.

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  50. Preparation of green catalyst from industrial waste. *International Conference on Energy-Water-Waste Nexus for Environmental Management (ICEWWNEM-2012)* Department of Energy & Environmental Sciences, Ch. Devlal University, Sirsa, India January 28-30, **2012**.
  51. Sequential batch reactor (SBR) treatment for industrial wastewater – A review. *International Conference on Recent Advances in Chemical Engineering and Technology RACET 2011*. Cochin, India. March 10-12, **2011**.

52. Desorption and disposal study for Aniline-loaded Granular Activated Carbon. *International Conference on Separation Processes 2009*, organized by Department of Chemical Engineering, IT BHU, Varanasi, India. Oct. 20-22, **2009**.
53. Adsorption isotherm and thermodynamics for removal of Catechol and Resorcinol onto Granular Activated Carbon. *International Conference on Separation Processes 2009*, organized by Department of Chemical Engineering, IT BHU, Varanasi, India. Oct. 20-22, **2009**.

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54. Study of various techniques of heat transfer augmentation. Recent Advances in Chemical Engineering (*RACE 2012*), Department of Chemical Technology, Maharashtra University, Jalgaon, 4<sup>th</sup> Feb, 2012.
55. Synthesis and characterization of Na-Y zeolite from coal fly ash. *CHEMCON-2011* organized by IChE & M S Ramaiah Institute of Technology, Bangalore, India. Dec.27-30, **2011**.
56. Effect of attrition milling on slag cement. *All India seminar on Blended Cements in the Sustainable Development of Cement Industry* organized by Chemical Engineering Division Board, The Institution of Engineers (India), Madhya Pradesh State Centre, Nov. 26-27, **2011**.
57. Production of bio-diesel by using micro-algae: challenges and Future Prospects. Short term course on *Recent trends in Industrial Pollution and Energy Management*, MANIT Bhopal, 09-13<sup>th</sup> May, **2011**.
58. Micro-Algae as a source of Bio diesel: Challenges and Future Prospects. *Institution of Engineers (IE)*, Bhopal, India. Jan. 8-9, **2011**.
59. Production of electricity using low-cost biomass *Techfest*, Indian Institute of Technology, Bombay, India. Jan. **2011**.
60. Removal of phenol by electro-coagulation: granular activated carbon as a enhancement factor. *63<sup>rd</sup> Annual Session of CHEMCON-2010* organized by IChE & Annamalai University, India. Dec.27-30, **2010**.
61. Various Techniques of Brine Sludge Disposal/Bearing Wastewater. *Biochemcon2010*, Priyadarshini Institute of Engineering and Technology, Nagpur, India. Dec, 22-23, **2010**.
62. Preparation of green catalysis for application of various treatment processes. *Green Chem 2010*, Department of Chemistry, Vikramajit singh sanatan dharam college, Kanpur. Oct 22-23, **2010**.
63. Equilibrium modeling of binary adsorption of aniline and catechol onto granular activated carbon. *ChEmference 2010*, Indian Institute of Technology Kanpur. July 13-14, **2010**.
64. Application of sequential batch reactor (SBR) for the wastewater treatment: A review. *National Symposium on Reaction Engineering (NSRE-2010)*, National Institute of Technology Raipur, Chhattisgarh, India. Jan 22-23, **2010**.
65. Green house gas reduction and carbon trading opportunity in polymer industries. *National Symposium on Reaction Engineering (NSRE-2010)*, National Institute of Technology Raipur, Chhattisgarh, India, Jan 22-23, **2010**.
66. Application of polymeric adsorbents for removal of petrochemical compounds from wastewater: a short review *National Symposium on Reaction Engineering (NSRE-2010)*, National Institute of Technology Raipur, Chhattisgarh, India Jan 22-23, **2010**.
67. Kinetics of reactive extraction of propionic acid using mechanically agitated contactor. *National Symposium on Reaction Engineering (NSRE-2010)*, National Institute of Technology Raipur, Chhattisgarh, India, Jan 22-23, **2010**.
68. Hydro electric energy: Indian scenario. Bangalore. July, **2009**.
69. Adsorption isotherm and thermodynamics for removal of Aniline onto Granular Activated Carbon. *62<sup>nd</sup> Annual Session of CHEMCON-2009* organized by IChE & Andhra University, India. Dec.27-30, **2009**.
70. Kinetic study on removal of Phenol and 4-Chlorophenol by Granular Activated Carbon
71. *62<sup>nd</sup> Annual Session of CHEMCON-2009* organized by IChE & Andhra University, India. Dec.27-30, **2009**.

72. Modelling of binary adsorption of Aniline and Phenol onto granular activated carbon 4<sup>th</sup> Uttarakhand state Council for Science and Technology (UCOST), Pantnagar, Uttarakhand, India. Nov. 10-12, **2009**.
73. Kinetic study on removal of catechol (C) and resorcinol (R) by Granular Activated Carbon (GAC), 4<sup>th</sup> Uttarakhand state Council for Science and Technology (UCOST), Pantnagar, Uttarakhand, India. Nov. 10-12, **2009**.
74. A review of variables affecting the oxygen transfer rate (OTR)/ $k_L a$  in bioreactors. *AChemE 2009*, organized by Department of Chemical Engineering, Thapar University of Engineering & Technology Patiala, India. Feb 27-28, **2009**.
75. Modeling of bioreactor for the production of L-glutamic acid using *Corynebacterium glutamicum* fermentation. 61<sup>st</sup> Annual Session of IChE & CHEMCON-2008, Chandigarh, India. Dec. 27-30, **2008**.
76. Comparison of techniques for the determination of the OTR/ $k_L a$  in bioreactors. 61<sup>st</sup> Annual Session of IChE & CHEMCON-2008, Chandigarh, India. Dec. 27-30, **2008**.
77. Novel (Shaken) Bioreactors: Application to Biotechnology and Chemical Engineering. "Recent Advances in Chemical Engineering Operation and Process in Chemical and Allied industries" on organized by Guru Ghasidas University, Bilaspur, Chhattisgarh, India. Feb.5-6, **2008**.

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## INVITED TALKS

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1. Water Treatment by Adsorption and coagulation process, Environmental Engineering and Management, Asian Institute of Technology, Thailand, 19<sup>th</sup> April 2016.
  2. Modeling and parameter optimization of biogas production from sial leaf residue, palash leaf litter and bamboo chips, 103<sup>rd</sup> Indian Science Congress 2016, Indian Science Congress Association and University of Mysore, India, 3-7<sup>th</sup> January 2016.
  3. Methane sensing nanomaterials-From Concept to Prototype. STTP on "Nanomanufacturing and nanotechnology organized by Department of Mechanical Engineering, MANIT Bhopal during 21-25<sup>th</sup> December 2015.
  4. Grassroots Renewable Innovation in Green Technologies. National Workshop on Breakthrough Energy Technologies and Challenges for Sustainable Development" 29-30, October 2015, Indore Institute of Science & Technology, Indore, India.
  5. Process Innovation and Patenting of Photoreactor Technology, Short term course "Role of New Product Development and Intellectual Property Rights in Global Competitiveness", 14-18, October 2015, Department of Mechanical Engineering, MANIT Bhopal.
  6. Green Technology- A Chemical Engineering Perspectives, 48<sup>th</sup> Engineers Day, on the theme of "Engineering Challenges for Knowledge Era", IEI (India), MP state centre, 15<sup>th</sup> Sep' 2015.
  7. Green Technology for Sustainable Environment", Green Chemistry and Engineering for Sustainable Environment, Institute of Engineering and Science, IPS Academy, Indore M.P., 21-22 August 2014.
  8. Searching for Suitable Green Technologies to Sustainable Environment, 2nd International Conference on Emerging Trends in Agriculture, Horticulture and Environmental Engineering, Noor-Us-Sabah, Bhopal, 15-17 November 2014.
  9. Utilization of Agricultural Residues (Waste-to-Energy). International conference on Sustainable Agriculture, Horticulture & Environmental Development, a Global Concern, Janparishad, Bhopal, 21-23, Feb. 2014.
  10. Biochemical Conversion of Agricultural Residues. International conference on Sustainable Agriculture, Horticulture & Environmental Development, a Global Concern, Janparishad, Bhopal, 21-23, Feb. 2014.
  11. Biomass to biofuel. TEQIP sponsored Short-term training program on "Bio-energy conversion technologies", Department of Chemical Engineering, MANIT, 24-28 December, 2013.
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12. Separation of ammonia from fertilizer effluent using hollow fibre membrane technology. TEQIP sponsored faculty development program on “Reverse Osmosis - Principle and Applications”, Department of Chemical Engineering, PEC Puducherry, June17-21, 2013.
13. Modeling the performance of the anaerobic digester systems for biogas energy production. “Two days workshop on Emerging technologies for conversion of biomass to biofuels”, Department of Energy, MANIT Bhopal, 22-23, Sep’ 2012.
14. Treatment of industrial wastewater using sequential batch reactor: A preliminary study, 3rd National Conference on “Urban & Industrial Waste Management 2012, June 29, 2012, Ahmedabad, India
15. Catalytic Conversion of Plastic Waste to Fuels, in the short term course on” Green Catalysis For Industrial Applications”, 07-11 May, 2012, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
16. Zeolites synthesis and its application as adsorbent, in the short term course on” Green Catalysis For Industrial Applications”, 07-11 May, 2012, Department of Chemical Engineering, Maulana Azad National Institute of Technology Bhopal, India.
17. Production of bio-diesel by using micro–algae: challenges and Future Prospects. Short term course on Recent trends in Industrial Pollution and Energy Management, MANIT Bhopal, 09-13<sup>th</sup> May, 2011.
18. Micro–Algae as a source of Bio diesel: Challenges and Future Prospects. Institution of Engineers (IE), Bhopal, India. Jan. 8-9, 2011.

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#### **COURSES ATTENDED/TRAINING**

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1. Seminar on “Collaboration for Innovation” AIT Solutions, Thailand, 12-13<sup>th</sup> May 2016.
2. Seminar on “Water Environment Engineering in China: Creative innovation towards the future” delivered by Prof. Xiaochang Wang, School of Environment & Municipal Engineering, Xian University of Architecture & Technology, China, organized by Environmental Engineering and Management, Asian Institute of Technology (AIT), Thailand, 17<sup>th</sup> March 2016.
3. Training program on “Urban Climate Change Adaptation and Resilience” organized by AECOM, East-West Centre, and the Asian Institute of Technology Thailand, 7-11<sup>th</sup> March 2016.
4. Seminar on “Advanced Technology and Innovation for sanitation: solar toilets and safe effluent reuse by UV by Prof. Karl G. Linden, University of Colorado at Asian Institute of Technology (AIT), Thailand, 10<sup>th</sup> March 2016.
5. Seminar on “Biomass supply chain sustainability in India” delivered by Prof. Sadhan Kumar Ghosh, University of Jadhavpur, Kolkata, India, organized by Asian Institute of Technology (AIT), Thailand, 8<sup>th</sup> March 2016.
6. Seminar on “Using DNA to conserve and protect Tropical Forest” delivered by Prof. Andrew Lowe, Professor and Director, Centre for conservation Science & Technology, University of Adelaide, Australia, organized by Energy Engineering Field, Asian Institute of Technology (AIT), Thailand, 1<sup>st</sup> March 2016.
7. Seminar on “Hazard risks” delivered by Dr. Indrajit Pal, Disaster Preparedness, Mitigation and Management division, organized by Energy Engineering Field, Asian Institute of Technology (AIT), Thailand, 13<sup>th</sup> February 2016.
8. Seminar on “Why Fukushima-1 accident happened?” delivered by Dr. Noritaka Yusa, Associate Professor, Department of Quantum Science and Energy Engineering, Graduate School of Engineering, Tohoku University, organized by Energy Engineering Field, Asian Institute of Technology (AIT), Thailand, 23<sup>rd</sup> February 2016.
9. Seminar on “Electricity Access in Developing World” delivered by Dr. Govinda R. Timilsina, Senior Research Economist, World Bank, organized by Energy Engineering Field, Asian Institute of Technology (AIT), Thailand, 9<sup>th</sup> February 2016.

10. 103<sup>rd</sup> Indian Science Congress, University of Mysore, 3-7<sup>th</sup> January 2016.
11. 4<sup>th</sup> IGCW Two day Symposium on Industrial Green Chemistry World (IGCW 2015), organised by Green ChemisTree Foundation, Mumbai during 3-4<sup>th</sup> December, 2015.
12. Seminar on “Research on CO<sub>2</sub> to Methanol”, organized by ONGC, New Delhi, during 29<sup>th</sup> September 2015.
13. International conference on Sustainable Agriculture, Horticulture & Environmental Development, a Global Concern, 21-23, Feb. 2014, Janparishad, Bhopal.
14. TEQIP sponsored short term training program on “Recent advances in Renewable Energy Systems” 21-25<sup>th</sup> October, 2013, Department of Energy, MANIT Bhopal
15. TEQIP sponsored faculty development program on “Reverse Osmosis - Principle and Applications” June17-21, 2013, Department of Chemical Engineering, PEC Puducherry
16. AICTE sponsored faculty development program on “Computational techniques and its applications in Engineering research” May 27- June 7, 2013, Department of Mechanical Engineering, PEC Puducherry, India.
17. TEQIP sponsored faculty development program on “Green Manufacturing and Material Processing” June 10-14, 2013, Department of Mechanical Engineering, PEC Puducherry
18. Two days National Workshop on “Recent Trends in Renewable Energy”, 09-10, Nov, 2012, Department of Mechanical Engineering, MANIT Bhopal.
19. Two days National seminar on “Energy, Environmental and Sustainability”, 1-2 March, 2012, Department of Energy, MANIT Bhopal.
20. Two days Workshop on “Writing Effective Conference Papers”, 18-19 Feb. 2012, Under MHRD, Govt. of India & IIT Bombay, MANIT Bhopal.
21. ISTE Workshop for Coordinators On Heat Transfer, Under the National Mission on Education through ICT (MHRD, Govt. of India), IIT Bombay, Sep 12-16, 2011
22. Green technology towards low carbon society, MANIT, Bhopal, March 30, 2011
23. Cleaner technology, short-term course, CPCB-IIT Roorkee, Feb., 23-25, 2011.
24. National conference on genomics: Tool for Bioprospecting, Department of Bioinformatics, MANIT, Bhopal, Nov 20-21, 2010.
25. International conference and exhibition on Oil and Gas, Petrotech2010, ONGC, New Delhi, Oct 31-Nov 03, 2010.
26. Science and Technology for Sustainable Development of India, Department of Electrical Engineering, MANIT, Bhopal, Aug 13-14, 2010.
27. Use of sophisticated instruments like GC-MS/GC, HPLC, CHNS, AOX analyzer, CPCB and IIT Roorkee, Feb 15-19, 2010.
28. Safety, Health and Environment Management in Hydrocarbon Industry, Petroleum Federation of India, Petrotech Society and IIT Roorkee, Jan 22-24, 2008.
29. Pollution Control Techniques for Distillery Waste, CPCB and IIT Roorkee, March 3-5, 2008.
30. Hazardous Waste, Batteries Waste and E-Waste Management, CPCB and IIT Roorkee, Nov 13-15, 2008.
31. Computational Fluid Dynamic, QIP Short term course. AICTE and IIT Roorkee, June 16-27, 2008.
32. Environment, Health and Safety Management in Process Industries, CPCB and IIT Roorkee, Oct 20-22, 2008.
33. Recent Trends in Environmental Management Strategies in Petroleum, Petrochemical and Fertilizer Industries, CPCB and IIT Roorkee, Feb 11-13, 2008.
34. Municipal Solid Waste-Planning, Collection, Handling and Disposal, IIT Roorkee, Dec 4-8, 2007.
35. Solving challenges of chemistry through analysis organized by Indian Institute of Technology Kanpur from May 2007 to June 2007. I have learned the following from this course: UV-Visible Spectroscopy, Thin-Layer Chromatography (TLC), Gas Chromatography (GC), High Pressure / Performance Liquid Chromatography (HPLC), Atomic absorption Spectroscopy

(AAS), FT-IR Spectroscopy, Thermo-gravimetric analysis (TGA), X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), Energy Dispersive X-ray (EDX), Transmission Electron Microscopy (TEM), Surface area analyzer, Pore volume distribution analyzer, CHN analyzer.

36. Industrial Training at Indo-Gulf Fertilizers Ltd., (Aditya Birla group) Jagdishpur (U.P.), India, March-2007.
37. UGC Refresher course on Industrial Biotechnology, University Grant Commission and Annamalai University, Nov 3-27, 2004.
38. Industrial Training at SKOL Breweries Pvt Ltd, Puducherry, India, June – 2003.

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## **INDUSTRIAL/FIELD VISIT**

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1. The King's Royally Initiated Laem Phak Bia Environmental Research and Development Project, 25<sup>th</sup> March 2016.
2. AIT Wastewater treatment plant. Thailand, 23<sup>rd</sup> March 2016.
3. Cho Heng Rice Vemicelli Co Ltd. Thailand, 18<sup>th</sup> March 2016.
4. Akkhie Prakarn Co., Ltd. Thailand, 15<sup>th</sup> March 2016.
5. Banwa-Hi Tech Industrial Estate wastewater Treatment plant, Thailand, 15<sup>th</sup> February 2016.
6. Nonthaburi Municipality, Nonthaburi Province, Thailand, 11<sup>th</sup> February 2016.
7. Bhopal Municipal Corporation, Bhopal, M.P., India, 2015.
8. Pilot scale gasifier plant, near Law college, Bhopal, M.P., India, 2014.
9. Pilot scale Biogas plant (10m<sup>3</sup>/45m<sup>3</sup>), Sharda Vihar school campus, Bhopal, M.P., India, 2014.
10. Central Institute of Agricultural Engineering, New Delhi, 2014.
11. Ordnance Factory, Itarsi, M.P., India, 2014.
12. Central Institute of Polymer Engineering & Technology, Bhopal, M.P., India, 2014.
13. SOM Distillery Industry, Bhopal, M.P., India, 2013.
14. Lupin & Lupin Pharmaceutical Industry, Bhopal, M.P., India, 2013.
15. Pollution Control Board, Bhopal, M.P., India, 2013.
16. Grasim Industry, Nagda, M.P., India, 2013.
17. Solid waste dumping yard, Banpura, Bhopal, M.P., India, 2013.
18. Pilot scale gasifier plant, Manna Village, Bhopal, M.P., India, 2012.
19. Agrawal Paper Mill and Agro Industry, Vidhisa, M.P., India, 2011.
20. Modi Sugar Industry, UP, India, 2009.
21. Municipal Wastewater Treatment Plant, Haridwar, Uttarakhand, India, 2009.
22. Central Pollution Control Board, New Delhi, India, 2009.
23. Engineers India Limited, New Delhi, India, 2009.
24. Indo-Gulf Fertilizers Ltd., (Aditya Birla group) Jagdishpur (U.P.), India, 2007.
25. Hindustan Lever Limited, Vadamangalam, Puducherry, India, 2004.
26. Shashan and Chemfab chemicals Industries, Kalapet, Puducherry, India, 2004.
27. Anglo-French Textile Industry, Puducherry, India, 2004.
28. Sica Breweries, Puducherry, India, 2003.
29. Leather/Biofiber Industry, Karaikal, Puducherry, India, 2003.
30. Henkel India Ltd, Karaikal, Puducherry, India, 2003.
31. Ariyalur Cement Industry, Tamil Nadu, India, 2003.
32. Pondicherry Co-operate Sugar Mill Ltd, Lingareddipalayam, Puducherry, 2003.
33. Jyothy laboratories Ltd, Puducherry, 2003.
34. Caplin Point Laboratories Ltd, Puducherry, 2002.
35. Chennai Petroleum Corporation Limited, Chennai, India, 2002.

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## **RESEARCH INTERESTS**

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Separation process–Catalysis & Reactor Design-Wastewater Treatment, Waste-to-Energy Conversion-Waste utilization-Biochemical Kinetics–Nanocomposites-Photocatalytic process-Green synthesis-Climate Change-Process Safety-Disaster Management

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### **TEACHING INTERESTS**

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- Chemical Reaction Engineering
- Momentum, Heat and Mass Transfers
- Process Control and its dynamics
- Transport Phenomena
- Process Modelling and Simulation
- Environmental Pollution Control and Process Safety
- Water Quality and Management
- Bio-energy Engineering
- Biochemical/Bioprocess Engineering
- Advance Separation Processes
- CFD Multiphase reactors/Industrial catalysis
- Green Chemistry and Clean Production Technology
- Advance Analytical Techniques
- Advance Materials characterization Techniques

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### **PROFESSIONAL ASSOCIATIONS**

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- Indian Institute of Chemical Engineers
  - The Institution of Engineers (India)
  - Solar Energy Society of India
  - Indian Society for Technical Education
  - Chemical Research Society of India
  - Catalysis Society of India
  - Indian Water Resources Society
  - International Congress of Chemistry and Environment
  - The Biotech Research Society
  - Materials Research Society of India
  - Indian Water Works Association
  - Institution of Public Health Engineers
  - Indian Society of Hydraulics
  - The Indian Science Congress Association
  - Biogas Forum India
  - American Chemical Society
  - American Institute of Chemical Engineers
  - Indian Institution of Industrial Engineering
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