

The Academic Vitae



Dr. R. SARAVANANE, M.E. , Ph.D.
ASSOCIATE PROFESSOR
ENVIRONMENTAL ENGINEERING
CIVIL ENGINEERING DEPARTMENT
PONDICHERRY ENGINEERING COLLEGE
PUDUCHERRY - 605 014, INDIA

Home Page: www.rsaravanane.com (or)
www.civil.pec.edu

Brief CV

Dr. R. SARAVANANE

Associate Professor
Environmental Engineering
Civil Engineering Department
Pondicherry Engineering College
www.rsaravanane.com (or) www.civil.pec.edu

Qualification : B.E., M.E., Ph.D.

Area of Specialization : **Environmental Engineering**

Experience : **Teaching and R & D:** 18 Years
Field/ Industry : 2 years

Publications : **Text Book : One (Published)**

Research Papers	Natl.	Intl.
<i>Journals</i>	14	35
<i>Proceedings</i>	21	76
Total:	146	

International Conference Organised : **One**

International Workshop Organized : **One**

Projects: Research and field (Field/ Sponsored) : Completed: **20**
Ongoing : **Four**

Ph.D Guidance : **5** (completed); Ongoing: **4**

M.Tech Guidance : **55** (Completed)

Research Areas of Interest : (i) Biohydrogen production through Dark fermentation
(ii) Biological Fluidization for Wastewater Treatment (**Recalcitrant and Pharmaceutical**)
(iii) Membrane Bioreactor for Wastewater Treatment (**Recalcitrant and Pharmaceutical**)

- (iii) Hazardous waste treatment and remediation of waste disposal sites
- (iv) Decentralised Wastewater Treatment System (DEWATS)

Field Work Experience
(Design and Monitoring)

: STP, ETP, DEWATS, RO, DM, Industrial Air pollution Control, Leachate treatment system, EIA, EMP, ERA, Biogas- methane utility system, Spealised Effluent treatment system for Pharmaceutical Industry

Potential Co-ordination Activities

- Environmental sustainability and management through technological innovation and application in semi-urban and rural areas.
- Solid waste management through integrated reuse and energy utilization
- Municipal and industrial waste to Energy conversion Routes
- Decentralised Wastewater Treatment System (DEWATS)
- Bioremediation of waste disposal sites
- Disaster management in coastal areas
- **Environmental Impact Assessment and risk management through state level Co-ordination – Member, State Environmental Impact Assessment Authority (SEIAA), MoEF, New Delhi, India, Department of Science, Technology & Environment, Government of Puducherry, India**
- Global warming and climate change mitigation - challenges through education and training
- Water resources augmentation through reuse and artificial recharge
- Technological innovation on Green Energy routes and water resuse sustainability

Dr. R. Saravanane, M.E., Ph.D.
Associate Professor
Environmental Engineering
Department of Civil Engineering
Pondicherry Engineering College, Pondicherry

Ph: 91-413-2655281 ext. 210

Fax: 91-413-2655101

Emails : info@rsaravanane.com
rsaravanane@pec.edu
saravananae@gmail.com

Home Page: www.rsaravanane.com (or) www.civil.pec.edu
www.environmental-expert.com/files/0/cv/145494/PECRSCvExpertcom.pdf

EDUCATION

Ph.D., Environmental Engineering, Indian Institute of Technology (IITM), Madras, Chennai., India, April 2003

M.E., Environmental Engineering (Distinction), Anna University, Chennai, India, 1993

B.E., Civil Engineering (Distinction), University of Madras, Chennai, India, 1989.

RESEARCH

Research Areas of Interest

Environmental Engineering

- | | |
|--|--|
| Biohydrogen production | - Through Dark fermentation and Photofermentation
(Industrial wastewater and organic waste residues) |
| Production of Biohydrogen and methane | - Through fermentation and anaerobic co-digestion |
| Membrane Bioreactor for Wastewater Treatment | - (Recalcitrant and Pharmaceutical) |
| Biological Fluidization for Wastewater Treatment | - Pharmaceutical Wastewater and Sludge
(Biotransformation to Bioenergy Residues) |

- Hazardous Waste and Sludge Treatment – Advanced Oxidation Process (AOP) and Biotransformation to Biosolids Classification,
- Solid Waste Management – Leachate Treatment (AOP & Biological Process to 3R Routes)
- Environmental Risk Assessment (ERA) - *Chemical and Explosive Industries*

Geoenvironmental Engineering

- Industrial Effluents – Soil- Pollutant interaction (Physiochemical Behaviour)
- Soil remediation - Recalcitrant Waste Sludge (Physiochemical Behaviour - Remedial Assessment of Waste Dumping Sites)

WORK EXPERIENCE

Professional

- **Associate Professor (*Present Position, July 2006 to July 2009*) [already become eligible for Professor from July 2009 onwards]**
Dept. of Civil Engineering, Pondicherry Engineering College, Puducherry, India
- **Assistant Professor**
Dept. of Civil Engineering, Pondicherry Engineering College, Puducherry, India
July 2003 to July 2006
- **Senior Lecturer**
Department of Civil Engineering, Pondicherry Engineering College, Puducherry, India (October 1998 to July 2003).
- **Lecturer**
Department of Civil Engineering, Pondicherry Engineering College, Puducherry, India (October 1993 to October 1998).

Industrial R & D and Consultancy

Research and Development (From year 1993 to till date)

- Water quality tests for potability and for building construction purposes
- Wastewater and industrial effluents characterization and treatability assessment
- Lime samples and admixtures testing for construction purpose.
- Testing and characterization of Hazardous waste sludge as per US EPA norms
- Environmental Impact Assessment (EIA) for Industrial zone in Pondicherry Region, India
- Design and Monitoring of STP, ETP, DEWATS, RO, DM, Industrial Air Pollution Control, Leachate treatment system
- Design and details of Sewer Network system – Urban areas- Puducherry, India
- Suggested modernization scheme of existing effluent treatment Plant for Anglo French Textile mills, Puducherry, India
- In plant Modifications and Performance Evaluation for Sago and starch based factories, salem, southern region, India
- Implemented Rain Water Harvesting Scheme for Hindustan Lever Limited, Puducherry, India
- Conducted Environmental Risk Assessment (ERA) on the Chemical and Explosive handling plants, Puducherry, India
- Performance Evaluation of ETP and Solid waste mycelia , Pharmaceutical Division, Cuddalore
- Evaluation of Green energy routes in biochemical pathway of organic residues, enrichment of biogas and industrial applications of biohydrogen

Service to the Institute (PEC)

- Member Founder - Pondicherry Engineering College Alumni Association (PECAA), 1991 – 1998, PEC, Puducherry
- Member – Training and Placement Cell, Pondicherry Engineering College
- Environmental Management Plan - PEC Campus

- Environmental Awareness, Green energy audit and Energy Conservation- PEC Campus
- Root Zone Technique for Sewage Treatment and Management – PEC Campus
- Monitoring of water quality and sustainable resource management for PEC campus
- Integrated Solid Waste Management

TEACHING

Under Graduate/ Post Graduate and Research

- Wastewater Engineering and Reuse
- Water Supply and Disinfection
- Industrial Effluent Treatment
- Solid waste Management
- Hazardous Waste Treatment and Disposal
- Unit Operations - Water Production and Wastewater Engineering
- Environmental Microbiology
- Environmental systems Engineering
- Air Pollution and Control
- Air and Water Quality Modelling
- Design of Water and Wastewater Treatment Systems
- Environmental Impact Assessment
- Environmental Risk Assessment
- Environmental Management
- Environmental Auditing
- Life Cycle Assessment (LCA) and OH& S

LAB / FIELD TESTING

- ◆ Environmental Engineering Lab
- ◆ Environmental Microbiology Lab
- ◆ Process Operations and Control
- ◆ Biological Fluidization – Aerobic and Anaerobic Biotransformation Routes
- ◆ Sludge Characterisation and Biosolids Classifications (US EPA)
- ◆ Leachate Characterization – Field Validation to Volatile Solids enriched Hazardous Waste Dumping Sites (TCLP, US EPA)
- ◆ Biotransformation Routes to Bioenergy residues

- ◆ Experimental and Field Testing – Conductivity based Biosensors
- ◆ Biogas – Flow rate Sensor for Low Velocity Measurement
- ◆ Methane to Market - Partnership and Commercial Viability
- ◆ Disinfection – Electrical Pulse Technology
- ◆ Disinfection – In-situ ClO₂ and Feasibility to Municipal Sectors

RESEARCH GUIDANCE

Ph.D

1. **S. Sundararaman** – **Studies on the Treatment of an Industrial Pharmaceutical Wastewater in a Submerged Membrane Bioreactor (Awarded)**
2. **S. Balasubramanian** - **Studies on In-situ Measurements and On-line Assessment of Microbial Biomass for Predicting the Treatment Efficiency in a Municipal Sewage Plant (Awarded)**
3. **S. Jayakumar** – **Studies on the Biodeterioration of Concrete By Marine Algae (Awarded)**
4. **K. Nagakarthigan** - **Studies on the Influence of Pharmaceutical and Surfactant Wastewaters on the Physico-Chemical and Geotechnical Characteristics of Fine-Grained Soils (Awarded)**
5. **B. Radjaram** - **Studies on Biohydrogen Production By Anaerobic Co-digestion of Press mud and Sewage (Awarded)**
6. **S. Virapan** - **Recovery and Reuse of RO Reject Wastewater (In progress)**
7. **N. Sureshnathan** - **Ground water recharge through recycled municipal wastewater for indirect potable reuse in Pondicherry region - Decision support Modelling for current and proposed regulatory criteria (In progress)**
8. **G. Vijayan** - **Design and operational scheme of SBR treating municipal wastewater under enhanced nutrient recovery through minimized greenhouse gas emissions (In progress)**

M. Tech (Environmental Engineering)

(Degree Awarded) - (1997 - Till date)

Year 1997

Seshadri Sekhar - Performance evaluation of Anglo textile Effluent Treatment Plant

B. Radjaram – Integrated Biomethanation of sugar mill waste and Municipal Sewage

Year 1998

G. Vijayakumar – Municipal solid waste flyash in concrete utilization

Year 2002

R. Kalpana – Effect of Surfactant effluent on Characterization of Clayey and Silty soils
(**Best Thesis Award, 2002**)

G. Savitha - Characterisation and behaviour of Pharmaceutical effluent on Clayey soil

M. Saravanan – Effect of amino acid effluent on the physiochemical behavior of cohesive soils

Year 2003

Bhavana Chander Das – Effect of pharmaceutical effluent on characterization of Commercial and natural soils (**Best Thesis Award, 2003**)

R. Keerthi – Characterization and soil-pollutant interaction of surfactant effluent contaminated soil

Year 2004

S. Sundararaman – Effect of Inoculum-substrate ratio on the acclimatization and startup of anaerobic reactor

Year 2005

M. Lavanya – Anaerobic Treatment of high strength industrial effluent in a two stage UASB reactor (**Best Thesis Award, 2005**)

Sri B. Muruganandam – Characterization and enhanced biodegradation of pharmaceutical sludge with biomass based biosensor measurement

AR. Genesh – Studies on volatile solids destruction and nutrient removal from municipal secondary sludge

Manda Chitti Babu – Co-digestion and reuse of municipal and industrial solid waste

V. Puviarasan – Environmental Impact Assessment of an Industrial zone in Pondicherry Region

A. Anbazhagan - Estimation of Emission Factors for Indian Vehicles (Coordination with **NEERI**, Chennai, India)

E. Suresh Pandian – On-line Measurement and Emission Characterisation for Indian vehicles (Coordination with **NEERI**, Chennai, India)

G. Mirudhula – Line source Pollution model – Performance and comparison (Coordination with **NEERI**, Chennai, India)

K. Theepaithan – Root zone Technique for reuse of municipal sewage

Year 2006

R. Vasanth Priya – Anaerobic Treatment of High strength Industrial effluent in Hybrid and UASB Reactors (**Best Thesis Award, 2006**)

Rajesh@Nithyanandam, R. – Advanced Oxidation for the Treatment and reuse of Recalcitrant Sludge

G. Aruna Kuzhali – Studies on Biological Treatment and reuse of Recalcitrant Sludge

R. Karthick – Disinfection of Drinking water and Municipal sewage using Chlorine dioxide

M. Govindaraj – Design and Optimization of Sewer network for an urban area

K. Prabhat – Ambient Air quality status and Pollution Control by Green belt Development (with coordination of **NLC Neyveli, Tamilnadu, India**)

K. Bharathi Raja – Pretreatment and technical alternatives for Desalination

S. Madivanan – Studies on root zone technique for reuse of municipal sewage

Sri Bala Gottumukkala – Evaluation of integrated energy Conversion Processes for Solid waste management

Year 2007

A. Umamaheswari – Treatment of Municipal sewage in a Moving bed Biofilm Reactor
(**Best Thesis Award, 2007**)

P. Anandhi – Biochemical stabilization of linear alkyl benzene sulphonate (LABS) based detergent wastewater

R. Ravikumar – Characteristic assessment and treatment of municipal solid waste leachate

T. Kaviarasi – Anaerobic treatment of recalcitrant pharmaceutical intermediate waste sludge in a hybrid UASB reactor

K. Stalin – Studies on Root zone technique for Reuse of Municipal sewage

A. Hemasuriya- Treatment of high strength waste water in a hybrid UASB reactor

P. Sivasankari – Disinfection of water and waste water using sodium hypochlorite solution

T. Dhanaselvi –Environmental Risk assessment of Chemical and explosive industries

Year 2007 - 08

S. Sudalai – Treatment of Municipal Sewage in an Inverse Anaerobic Fluidized Bed Reactor (**Best Thesis Award, 2007**)

R. Menaka - Characteristic Quantification and Fenton Oxidation for Municipal and Hazardous Solid Waste Leachate Treatment

R. Rajalakshmi - Acclimatization and Start-up of Fluidized Bed Reactor Treating Anti-biotic Pharmaceutical Effluent

D. Zealakshmi - Experimental Analysis of Biotransformation Routes for Surfactants to Bioenergy Residues (**US EPA and OECD Regulations**)

Year 2008-2009

S. Tamizhvendane - Recovery of crystalline phosphate from municipal sewage
(**Best Thesis Award, 2009**)

V. Vizhali - Development of conductometric biosensor for microbial biomass measurement

D. Catherine - Environmental Risk Assessment of explosive aromatic industries

M. Malarviji - Sludge minimization in Textile industries through innovative physico-chemical methods

Year 2009 – 2010

K. Jaiganesan - Treatability studies and chemical conditioning of raw municipal sewage for reuse

S. Maran - Studies on biohydrogen production through anaerobic co-digestion of food industrial waste

P. Murugan - Treatment of Synthetic Aromatic effluent in a membrane bioreactor

Year 2010- 1011

N. Madhivanan - Studies on the treatment of pharmaceutical wastewater in a submerged membrane bioreactor

K. Kaviarasan - Studies on biohydrogen production through anaerobic co-digestion of sugar mill waste

Naba Kumar Mandal - Evaluation of membrane bioreactor models for the treatment of pharmaceutical wastewater

Current Research Work

- **Hazardous waste treatment and disposal (Pharmaceutical waste treatment)**
- **Biotransformation of recalcitrant waste sludge**
- **Biological transformation routes for hazardous waste fuel derivatives**
- **Biotransformation routes for Cephalosporin compounds to fuel derivatives**
- **Biofuel derivatives from Detergents and surfactants**
- **Disinfection of water and waste water using Chlorine dioxide (Aquatech, UK) and sodium hypochlorite solution**
- **Environmental Risk Assessment (ERA) of Chemical and Explosive industries**

- **Solid Waste Management – Toxicity Characterization (TCLP), Leachate treatmentability Assessment, Refuse Derived Fuel (RDF) alternatives to plastic waste management .**
- **Pretreatment and Biotransformation pathway - Antibiotic Pharmaceutical Effluent in Membrane Bioreactor (MBR)**
- **DEWATS – Formulation of Guidelines for Planning and Implementation**
- **Physiochemical Behaviour and the Remedial Assessment of Waste Dumping Sites**
- **Microbiologically Induced Corrosion (MIC) on Structural Components**
- **Development of On-line Instrumentation Module for Performance Evaluation of Water and Wastewater Treatment Plants**
- **Experimental and Field Testing – Conductivity based Biosensors**

Current Industry/ Field Work

- (I) Performance Evaluation of ETP and Solid waste mycelia , Pharmaceutical Division, Cuddalore**
- (II) Environmental Risk Assessment (ERA) of proposed Liquefied Petroleum Gas (LPG) plant, Puducherry, India (Completed).**
- (III) Design and Monitoring of STP, ETP, DEWATS, RO, DM, Industrial Air pollution Control, Leachate treatment system, Biogas - Methane Utility System**
- (IV) Online monitoring of Biogas plant using Computer Aided Data Acquisition and Control, Karaikal, Puducherry Region, India (In Progress)**
- (V) In plant Modifications and Performance Evaluation for Sago and Starch based factories, Salem, Southern Region, India (In Progress)**
- (VI) Solid Waste Management - Toxicity Characterization (TCLP), Leachate treatment, Refuse Derived Fuel (RDF) alternatives to plastic waste management , Karaikal, Puducherry Region, India (In Progress)**
- (VII) Root Zone Technique for reuse of secondary municipal sewage and industrial effluent., India**
- (VIII) Sludge Characterisation and Biosolids Classifications (US EPA)**

- (IX) Leachate Characterization – Field Validation to Volatile Solids enriched Hazardous Waste Dumping Sites (TCLP, US EPA)**
- (X) Experimental and Field Testing – Conductivity based Biosensors**
- (XI) Biogas – Flow rate Sensor for Low Velocity Measurement**
- (XII) Disinfection – Electrical Pulse Technology**
- (XIII) Disinfection – In-situ ClO₂ and Feasibility to Municipal Sectors**

RESEARCH COORDINATION/ COLLABORATIONS

- ✧ **CORDIS – Research Frame Work, Europe**
- ✧ **International Water Association (IWA, UK)**
- ✧ **International Water Association (IWA WATER WIKI)**
(<http://www.iwawaterwiki.com/xwiki/bin/view/XWiki/Ramansaravanane>)
- ✧ **Technological Innovation – IRC Network, Europe**
- ✧ **Environmental Expert.com - Case Studies and Industrial Research Data Base, USA**
- ✧ **Project Network Coordination – Waste to Bioenergy - Methane to Markets, Environmental Protection Agency, US EPA.**

- ✧ **Membrane BioReactor (MBR) – Network, Europe**
- ✧ **Disinfection – Aquatek, UK**
- ✧ **National Environmental Engineering Research Institute (NEERI), Chennai, India**
- ✧ **CPHEEO, Ministry of Urban Development, New Delhi, India**

- ✧ **Growdiesel Consortium (Climate Care Council), New Delhi, India**
- ✧ **Neyveli Lignite Corporation Ltd. (NLC), Tamilnadu, India**
- ✧ **Steel Authority of India Limited, Kolkatta, India**
- ✧ **Department of Science, Technology and Environment (DSTE), Puducherry, India**
- ✧ **Research and Consultancy – CPWD, PWD, Corporate, Public Sectors, Industrial Sectors, Puducherry and within India.**

AWARDS/ HONOURS

- (1) Received a **Cash Award** For the **best Technical paper** presented in National Seminar on **Clean Environment Strategies, Planning and Management, Feb. 26-27, 1994, Lucknow, India.**
- (2) Biography of the Author is Published in **Marqui's Who'sWho In Science and Engineering** , 8 th edn. 2005 – 2006
- (3) **R.Saravanane**, D.V.S.Murthy and K.Krishnaiah (2000). Bioaugmentation and treatment of cephalixin drug based pharmaceutical effluent in an upflow anaerobic fluidized bed system. **Bioresource Technology**, Vol. 76, No. 3, pp 279 – 281 – **Indexed in Environmental Protection Agency (US EPA) of National Environmental Research Laboratory – Environmental Sciences, PPCB as Environmental pollutants, June 2004.**
- (4) **R.Saravanane**, D.V.S.Murthy and K.Krishnaiah (2000). Bioaugmentation and treatment of cephalixin drug based pharmaceutical effluent in an upflow anaerobic fluidized bed system. **Bioresource Technology**, Vol. 76, No. 3, pp 279 – 281 –**Indexed in Pharm Products Web site, USA (Hair Million) for Research Reference**
- (5) **Saravanane, R., Murthy, D.V.S., and Krishnaiah, K.,** "Bioaugmentation and treatment on antibiotic drug based pharmaceutical effluent in an upflow anaerobic fluidized bed system", Proceedings of Envirovision 2000: Industrial Wastewater Recycle and Reuse, May 5-6, 2000, Mumbai., India (**Best Paper Award**)
- (6) **Honoured in Water Environment Federation (WEF), USA**
R. Saravanane and M. Lavanya (2006), 'Anaerobic Stabilization And Recalcitrant Anti-Biotic Transformation Under Acclimated Inoculum-Substrate Matrix', **Water Environment Federation (WEF)** , USA, **WEFTEC 2006, 21-25, October, Texas, USA (Honoured in Environmental Expert.com, Under Water Environment Federation, WEF, USA) pp. 1739- 1746. (Published)**
- (7) Awarded "**Friend of Energy Award**" for Waste to biomass energy utilization from **National Conference on Demand Side Management Options for Energy Sustainability (DSMES' 07), Energy Society of India, 25 th October, 2007, India.**
- (8) Research Fellowship (2008) (For Academic and Research Collaboration) - Environmental Research (Water and Wastewater Treatment

Technologies- **Laboratoire de Chimie et Microbiologie de l'Eau (LCME)** to **Ecole Supérieure d'Ingénieurs de Poitiers (ESIP)**, **University of Poitiers, Poitiers, France**, during Sep – October 2008

- (9) Awarded **Shrimati Saroma Sanyal Memorial Prize (2010)** for the best paper titled, “*Anaerobic Co-digestion and increased solid destruction for organic fraction of municipal solid wastes with cattle slurry*” published in Environmental Engineering Division Journal of **Institution of Engineers (India)**, Kolkata, India and presented at the **25 th Indian Engineering Congress, Kochi, December 2010**
- (10) **Best Paper Award (2010)** B. Radjaram and **R. Saravanane, (2010)**, Energy Recovery By Anaerobic Co-Digestion Of Food Industry Solid Waste And Sewage, **Ist International Conference On Recent Advances in Mechanical Engineering**, Noorul Islam University, Kumaracoil, India, pp 225-233,

Research Fellowship

1. For Academic and Research Collaboration - Environmental Research (Water and Wastewater Treatment Technologies- **Laboratoire de Chimie et Microbiologie de l'Eau (LCME)** to **Ecole Supérieure d'Ingénieurs de Poitiers (ESIP)**, **University of Poitiers, Poitiers, France**, during Sep – October 2008.
2. Exploring **Engineering and Environmental Issues on feasibility of secondary sewage effluent to offshore algal growth – biofuel and hydrogen energy production, Wind, Sea Algae – Offshore cultivation of algae for biodiesel Production, Lolland, Copenhagen, Denmark (www.algaepedia.org)**

ACADEMIC AND RESEARCH COLLABORATION

1. As Expert in International workshop **Journe'es Information Eaux**, 23 – 25 th Septembre, 2008, ESIP, Poitiers and **Research collaboration** during 20th Sep. to 1st Oct. 2008, at Ecole Supérieure d'Ingénieurs de Poitiers (ESIP), University of Poitiers, Poitiers, France.
2. Expert Technical discussion on “**Engineering and Environmental Issues on feasibility of secondary sewage effluent to offshore algal growth**”, International Workshop on **Wind, Sea Algae – Offshore cultivation of algae for biodiesel Production**, 20 - 22 April 2009, **Lolland, Copenhagen, Denmark (www.algaepedia.org)**

INTERNATIONAL PROJECTS AND STUDENTS

The Institut National des Sciences Appliquées of Toulouse (INSA), Toulouse, France

1. Ms. Marmie Gaelle, 4 th year (Engineering Diploma), “Pretreatment and Biotransformation pathway - Antibiotic Pharmaceutical Effluent in Membrane Bioreactor (MBR)”, [Internship], **Laboratoire d'Ingénierie des Procédés de l'Environnement** (Department of Chemical and Environmental Engineering), **The Institut National des Sciences Appliquées of Toulouse (INSA), Toulouse, France. Period: June 22nd to 12 th Septembre 2009**, at Environmental Engineering Laboratory, Civil Engineering Department, Pondicherry Engineering College (PEC) , **Pondicherry, India.**

2. **Laboratoire de Chimie et Microbiologie de l'Eau (LCME) to Ecole Supérieure d'Ingénieurs de Poitiers (ESIP), University of Poitiers, Poitiers, France**

CORDIS – FP7 Project:

Member – *International Advisory Board – Sustainable and Integrated Urban Water System Management, SANITAS, FP7-PEOPLE-ITN 2010 - Marie Curie Initial Training Networks, FP7 Project, CORDIS, Europe (2010 -11)*

WSSTP Task Force on Water and Energy, Europe

Expert Member - Board of the European Water supply and sanitation Technology Platform (WssTP) Europe - *Research and Technology Development needs (RTD)* identified for brines handling in industry and water treatment companies.- A 1st working document assessed for advanced treatment methods in water supply and sanitation.

Member - WSSTP Task Force on Water and Energy, Europe – *Research Road map , 2010 – 11- Working document for implementation*

International Water Association (IWA), UK – Specialist Group

Anaerobic Digestion (Management Committee)– Published in IWA year Book, p. 78, 2009.

International Water Association, IWA Conferences, UK

Technical Reviewer - *IWA World Water Congress and Exhibition, 19–24 September 2010, Montréal, Canada*

Countries Visited: France, Denmark, Belgium and Asia

Reviewer of International Journals

1. Waste Management, Elsevier
2. Water Research, Elsevier
3. Environmental Technology, Taylor and Francis
4. Water Science and Technology, IWA
5. Journal of Hazardous Materials, Elsevier
6. Journal of Environmental Engineering, ASCE
7. Environmental Research, Elsevier
8. Environmental Modelling and Software, Elsevier
9. Journal of Membrane Science, Elsevier
10. International Journal of Energy Research, Wiley InterScience
11. International Journal of Hydrogen Energy, Elsevier
12. Biosensor and Bioelectronics, Elsevier
13. Journal of Environmental Management, Elsevier

European Commission

1. Europa CORDIS – Expert Profile [FP7 – Research Frame work]

(http://cordis.europa.eu/fetch?CALLER=EN_FP7_PARTNERS&ACTION=D&DOC=1&CAT=PART&QUERY=012401726982:b992:2ab41666&RCN=81188)

2. Research Collaboration - **Technological Innovation – IRC Network, Europe**
3. **Member of Risk Assessment** - Advisory Structure of Scientific Committees and Expert set up by European Commission Decision - 2008/721/EC (Published in Official Journal of the European Union, OJ L 49, 20.02.2009, p. 33)

[<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:049:0033:01:DE:HTML>]

4. **Europe – India – Science and Technology Cooperation (Member and Invitee)**

5. **International Water Association (IWA WATER WIKI) – Expert Member – A resource and hub for the global water community**

(<http://www.iwaterwiki.com/xwiki/bin/view/XWiki/Ramansaravanane>)

6. **Member – Commonground** - Expertise discussion – **Environment, Health and Safety (EHS) Group** (<http://commonground.edrnet.com/people/7e1bb25752>)-

Ministry Environment and Forests (MoEF), Government of India

Department of Science and Technology & Environment, Government of Puducherry

Member - Risk Assessment, The Gazette of India, State Environmental Impact Assessment Authority (SEIAA), MoEF, Department of Science and Technology & Environment, Government of Puducherry (from 2007 – 2010)

Served as a Member and reviewed several projects for EIA appraisal and risk assessment for Environmental Clearance from 2007 to 2010 for Pondicherry Region, India

Professional Affiliations

- **Fellow (FIE)** , The Institution of Engineers (India), Kolkatta, India
- Member, **International Water Association (IWA)**, UK
- **IDS – Water**, Europe
- Pharmaceutical Technology – Industry (**SPG, PLC**)
- Project Network Member, Waste to energy, **Methane to Markets**, EPA, USA.
- Member, Indian Environmental Association (**IEA**), Mumbai, India
- Indian Pharmaceutical Association (**IPA**), India
- Member, **Institution of Engineers**, Kolkatta , India,
- Member, National Solid Waste Management Association (**NSWAI**), India
- Member, **Growdiesel Consortium** (Climate Care Council), New Delhi, India
- Member, Indian Water Works Association (**IWWA**), India
- Member, Indian Association for Environmental Management (**IAEM**), NEERI, India
- Member, Institution of Public health Engineers (**IPHE**), Kolkatta, India
- Member, Environmental Impact Assessment (EIA) Committee, Ministry of Environment and Forests, (MoEF) - Department of Science, Technology and Environment (DSTE), Puducherry, India
- Life Member, Indian Society for Technical Education (**ISTE**), India

RESEARCH PUBLICATIONS

BOOKS/ CHAPTERS/PAPER CONTRIBUTIONS

Book Published

1. A Text book titled “ **ENVIRONMENTAL SCIENCE AND ENGINEERING**” by **Dr.Raman Saravanane, The Select Publication, First Edition, January 2005. (For Anna University and Pondicherry University Syllabi), India**
2. *Editor – Proceeding of International conference on Cleaner technologies and Environmental management, PEC, Pondicherry, India, January 2007*
3. *Editor - Proceeding of International Workshop on Indo/French technologies for Sustainable Environment, PEC, Pondicherry, India, April 2008*

Book-Chapters/Paper Contributions

1. “Bioaugmentation and Treatment of cephalixin drug-based Pharmaceutical effluent in an Upflow Anaerobic Fluidized bed System”, *Biotreatment of Industrial Effluents* – Mukesh Doble and Anil Kumar, p.224, 2005, **Elsevier Pub**, UK, ISBN 0750678380.
2. Bioaugmentation and Anaerobic Treatment of Pharmaceutical Effluent in Fluidized Bed Reactor, *Biology of Wastewater Treatment* - Nick F. Gray, p.1358, 2004, **Imperial College Press**, London, UK, ISBN 1860943322.
3. “Effect of Chemically Modified low cost adsorbents for removal of heavy metals from waste water: A Comparative Study”, *Biotechnological Approaches for Sustainable Development-* Sudhakara Reddy and Sunil Khanna p. 211, 2004, **Allied Pub.**, India, ISBN 8177646699.
4. “Anaerobic treatment of Sago waste water using a Fluidized Bed Reactor”, Chap. 23, *Industry and Environment*, - R.K. Trivedy, New Delhi, India, 540 p., 2002, ISBN 81-7035-268-1.

5. “Anaerobic transformation and bioremediation of cephalosporin antibiotic waste sludge using a fluidized bed reactor”, *Hazardous and Industrial Waste: Proceedings of the 33rd Mid-Atlantic Industrial and Hazardous Waste Conference* - Nada Assaf- Anid, pp. 298 – 306, 2001, **CRC Press**, USA, ISBN 1587161206.

6. “Environmental Issue and Waste Management in Sago Industry for Energy Production”, *Environmental Issue and Management of Waste in Energy and Mineral Production*, - Raj K. Sigal and Anil K. Mehrotra, Canada, pp. 171- 174, 2000, **Taylor & Francis Pub.**, ISBN 90 5809 085 X.

7. “Inhibition and Assessment of toxicity on anaerobic degradation of Anti-osmotic drug based pharmaceutical effluent in an up-flow anaerobic fluidized bed system”, *Hazardous and Industrial Waste: Proceedings of the 32nd Mid-Atlantic Industrial and Hazardous Waste Conference* – James (Chip) Kilduff, Simeon Komisar and Marianne Nyman, pp. 359-369, 2000, **CRC Press**, USA, ISBN 1587160269.

RECENT PUBLICATIONS

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52. R. Vasanth priya and **R. Saravanane (2007)** Anaerobic Treatment of Sago Wastewater in UASB and Hybrid UASB Reactors , **Proceedings of International Conference on Cleaner Technologies and Environmental Management**, 4-6 , January, **Pondicherry Engineering College**, Puducherry, India, 382 – 386.
53. **R. Saravanane, S. Sudalai, T. Muthukumaran (2007)** “Dechlorination Treatment And Thermal Effect On The Degradation Of Municipal Waste Plastics Contaminated With Saline Leachate In A Waste Dumping Site”, **International Conference on Sustainable Solid Waste Management**, 5-7 September 2007, Centre for Environmental Studies, Anna University, Chennai, India, pp. 393 – 397.
54. Sri B. Muruganandam, **R. Saravanane** and R. Sivacoumar (2007), ‘*Anaerobic Stabilization Of Transformed Intermediates Of Cephalosporin Anti-Biotic Waste Stream In A Fluidized Bed Reactor*’, 11 th **International Water Association (IWA), Specialist Conference on Anaerobic Digestion**, 23- 27, September, Brisbane, Australia (Accepted).
55. **R. Saravanane** and B. Radjaram (2007) ‘*Anaerobic Stabilization And Conversion of Transformed Intermediates Of Anti-Biotic Pharmaceutical Waste Sludge In A Fluidized Bed Reactor*’, *Proceedings of 10th International Conference on*

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56. V. Murugaiyan, **R. Saravanane** and T. Sundararajan (2008), ‘Influence of Pharmaceutical Effluent on the Physico – Chemical Behaviour and Geotechnical Characteristics of Cohesive Soil Systems’. *Proceedings of GeoCongress 08: Characterization, Monitoring, and Modeling of GeoSystems*, ASCE, March, 9 -12, 2008, Geo-Institute of ASCE, New Orleans, USA, pp. 76-83.
57. K. Stalin, S. Sudalai, **R. Saravanane**, M. Dheenadayalan and R. Sivacoumar and T. Muthukumaran (2008). “Effect of Nonionic Surfactants (Alcohol Ethoxylates) Recovery on Enhanced Volatile Solids Destruction for Reuse of Concentrated Black Water and Kitchen Residues from Households”. *8 th IWA Specialised Conference on Small water and wastewater systems and 2 nd IWA Specialised Conference on Decentralized Water and Wastewater International Network (DEWSIN), International Water Association (IWA), UK*, 6 – 9 February, 2008, Kumaraguru College of Technology, Coimbatore, India.
58. V. Murugaiyan, **R. Saravanane** and T. Sundararajan (2008), “Effect of Acid Effluent on the Characterization and Physio-Chemical Behaviour of Clayey and Sandy Soil” *Proceedings of GeoCongress 2008: Geotechnics of Waste Management and Remediation*, ASCE, March, 9 -12, 2008, Geo-Institute of ASCE, New Orleans, USA. pp.827- 834.
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60. S. Balasubramanian and **R. Saravanane** (2008), “Conceptual Biosensor Model for Assessment and On-Line Monitoring of Bacteriological Quality in Urban and Rural Water Supply Schemes”, *Proceedings of International Workshop on “Indo/French Technologies for Sustainable Environment”*, 10 th April 2008, Pondicherry Engineering College, Puducherry, India, Intercultural Network for Development and Peace (INDP), **India and Poitou Charentes Region, France**, pp. **78 -85**.
61. **Saravanane. R & Radjaram. B.**,(2008), Bio Hydrogen Production from Bio waste- A Review, Proceedings of the One day Workshop On “Indo French Technologies For Sustainable Environment”, Pondicherry Engg. College, Pondicherry. pp 115-121

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65. **R. Saravanane** and S. Sundararaman (2009) Effect of organic loading rate and critical flux on the removal of Cephalosporin and 7- ACA antibiotic intermediates during the operation of submerged flat Sheet membrane system treating pharmaceutical wastewater, *6th IWA Leading-Edge Conference on Water and Wastewater Technologies (LET 2009)*, 23-25 June 2009, Singapore.
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67. S. Sundararaman and **R. Saravanane** (2009) Evaluation of Critical Flux and Performance of a Submerged Membrane Bioreactor Treating Cephradine Antibiotic Industrial Wastewater. *5th IWA Specialised Membrane Technology Conference for Water and Wastewater Treatment*, 1-3 September 2009, ,Beijing, P.R.China
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69. S. Balasubramanian and **R. Saravanane** (2009) On-line Monitoring of Active Biomass Concentration in Wastewater Treatment Plant using a Potentiometric Microbial Biosensor. *The 3 rd IWA – ASPIRE Conference*, 18 th – 22 nd , October, 2009, Taiwan. .
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European Biomass Conference and Exhibition from Research to Industry and Markets, Lyon, France, 3 – 7, May 2010.

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73. B. Radjaram and **R. Saravanane**, (2010), Energy Recovery By Anaerobic Co-Digestion Of Food Industry Solid Waste And Sewage, *Ist International Conference On Recent Advances In Mechanical Engineering, Noorul Islam University, Kumaracoil, India*, pp 225-233, (*Received Best Paper Award*).
74. B. Radjaram., **R. Saravanan** and T. Sundararajan, (2010), Evaluation of optimum hydraulic retention time for biohydrogen production from pressmud, *2nd International conference on climate change & sustainable management of natural resources*, ITM Universe, Gwalior, India.
75. B. Radjaram., **R. Saravanan** and T. Sundararajan, (2011), Fermentation Of Pressmud and Identification Of Microbial Species Producing Biohydrogen, *IWA Specialist Conference on Microbes in waste water and waste treatment bioremediation and energy production , BITS-Pilani, Goa, India*, pp-67-68.
76. B.Radjaram and **R.Saravanane**, (2011), Assessment of optimum dilution ratio and microbial consortium for Biohydrogen production by anaerobic co-digestion of press mud with sewage and water- A comparative study, *World Congress on Biotechnology, (OMICS Publishing group, USA), March, 21-23, Hyderabad, India*.

III. NATIONAL JOURNALS (REFEREED)

1. (Ms) Rasmi.S.Unnithan, **R.Saravanane** and D.V.S.Murthy (1999). Treatment of dairy effluent using an anaerobic fluidized bed reactor. **Indian Chemical Engineer**, Vol. 41, No.4, 271 – 275.
2. **R.Saravanane**, T. Sundararajan and S.Sivamurthy Reddy (1998). Studies on the removal of heavy metals from wastewater using chemically modified low cost adsorbents. **Jl. Institution of Public Health Engineering**, Vol. 1998, No.2, 45-54.

3. **R.Saravanane** and B.Radjaram (1998). Integrated biomethanation system for waste management of sugar industry. **Jl. Institution of Public Health Engineering**, Vol. 1998, No.1, 22-29.
4. **R.Saravanane**, T. Sundararajan and S.Sivamurthy Reddy. Efficiency of chemically Modified low cost adsorbents for the removal of heavy metal from wastewater: A comparative study. **Indian Journal of Environmental Health, NEERI**, Vol. 44, No. 2, pp. 78 – 87.
5. **R.Saravanane**, S.Sivamurthy Reddy and M.A.Sivasankaran (1999). Integrated biomethanation system for waste management of sugar industry and municipal sewage plant. **Jl. Institution of Public Health Engineering**, Vol. 1999, No. 1, 34 - 41.
6. **Saravanane, R.**, M.A. Sivasankaran, S. Sundaraman and R. Sivacoumar (2004). “Anaerobic sustainability for integrated biomethanation of sugar mill waste and municipal sewage, **Journal of Environmental Science and Engineering, NEERI**, Vol. 46 (2), pp. 116-122.
7. **R.Saravanane**, M.A.Sivasankaran and S.Sundararaman, (2005) Anaerobic Pretreatment and Increased Solid Destruction of Organic Municipal Solid Waste and Secondary sewage sludge for Reuse and Recovery. **Journal of Institution of Engineers**, Environmental Engineering Division, Vol. 86, pp. 7 -9.
8. Sri B. Muruganandam, **R. Saravanane** M. Lavanya and R. Sivacoumar (2008) Effect of Inoculum –substrate ratio on acclimatization of pharmaceutical effluent in an anaerobic batch reactor. **Journal of Environmental Science and Engineering, NEERI**, Vol. 50 (3), pp. 191-196.
9. Manda Chitti Babu, **R. Saravanane** and R. Sivacoumar (2009). Anaerobic pretreatment and increased solid destruction for vegetable solid waste codigested with cattle slurry, **Journal of Environmental Science and Engineering, NEERI**, Vol. 51 (1), pp. 67-72
10. Manda Chitti Babu, **R. Saravanane** and R. Sivacoumar (2009) Anaerobic Co-digestion and Increased Solid Destruction for Organic Fraction of Municipal Solid

Waste with Cattle Slurry, **Journal of Environmental Engineering Division, Institution of Engineers (India)**, Vol. 90, pp. 3-7. [Awarded **Shrimati Saroma Sanyal Memorial Prize (2010)** at the *25 th Indian Engineering Congress, Kochi, India December 2010*]

11. **R. Saravanane** (2009), Application of sodium hypochlorite as disinfectant for municipal water and wastewater, **WATER Digest**, Vol.III (6), 81-84.
12. A. Darwin, S.S. Sundarvel. **R. Saravanane** and N. Ramesh, (2010), Studies on seasonal variation in the dispersion of suspended particulate matter from a point source, **Nature Environment and Pollution Technology**, Vol. 9 (2), 389- 398.
13. **R. Saravanane**, Tamijevendane and Ravikumar (2009). Assessment, Evaluation and treatment of Municipal solid waste leachate under Indian Scenario. **Indian Journal of Environmental Protection**, Vol.29 (9), pp. 817-823.
14. S. Tamijevendane , **R. Saravanane**, R. Rajesh and R. Sivacoumar (2011). Anaerobic stabilization and conversion of transformed intermediates of pharmaceutical effluent in a fluidized bed reactor. **Journal of Environmental Science and Engineering, NEERI** (In press).

IV NATIONAL CONFERENCES / SEMINARS (REFEREED)

1. **R.Saravanane** and P.Selvapathy (1993). Heavy metals removal from wastewater using Water hyacinth. **National Seminar on Clean Environment, Strategies and Planning**, November, pp. 251-260, Lucknow, India. (**Received a Cash Award for the best Paper Presented**).
2. **R.Saravanane**, D.V.S.Murthy and K.Krishnaiah (1999). Anaerobic treatment of sago wastewater using a fluidized bed reactor. **CHEMCON '99**, Dec. 20-23, Chandigarh, India.
3. **R.Saravanane** and D.V.S.Murthy (1999). Treatment of dairy effluent and the effect of micronutrient on the performance of Anaerobic fluidized bed reactor. **Indian Association for Environmental Management (IAEM), Annual Conference**, Dec. 17-18, Nagpur, India.
4. **R.Saravanane**, D.V.S.Murthy and K.Krishnaiah (1999). Studies on Anaerobic treatment of sago wastewater using a fluidized bed reactor. **National Conference on Industry and Environment**, Dec. 28-30, Karad, India.

5. **R. Saravanane**, AR. Ganesh (2005). Nutrient Management in Municipal Secondary Sludge by Chemical Oxidation using Hydrogen Peroxide(H_2O_2). **National Conference on “Sludge waste and waste water management and treatment Technologies”**, Bharath Institute of Higher Education, Chennai, pp 62-69.
6. **R. Saravanane**, Manda Chitti Babu (2005). Co- Digestion of Municipal Solid Waste with Municipal Sewage and Cattle Slurry. **National Conference on “Sludge waste and waste water management and treatment Technologies”**, March 11, Bharath Institute of Higher Education, Chennai, pp 70-75.
7. **R. Saravanane**, G.Sam Gunasekar, B.Sri Muruganandam(2005). Reclamation and Reuse of Pharmaceutical Waste for Efficient Water Resources Management . **National Conference on “Innovative Techniques for Sustainable Development of Water Resources”**, March 24-25, Annamalai University , Chidambaram.pp 323-330.
8. **R. Saravanane**, V. Puviarasan, M.A. Sivasankaran, S. Sivamoorthy Reddy (2005). Assessment and Evaluation of Environmental Impacts on Augmentation of Depleting Ground Water Resources . **National Conference on “Innovative Techniques for Sustainable Development of Water Resources”**, March 24-25, Annamalai University , Chidambaram. pp 301-308.
9. **R. Saravanane**, M.A. Sivasankaran, M. Lavanya(2005).Innovative high Strength Effluent Recycle and Reuse for Replishment of Surface Water Resources. **National Conference on “Innovative Techniques for Sustainable Development of Water Resources”**, March 24-25, Annamalai University , Chidambaram. pp 258-265.
10. V. Murugaiyan, **R. Saravanane**, , T. Sundarararjan and V.K. Stalin (2005) Characterization and effect of industrial effluent on Clayey soil. **All India Seminar on Advances in Geotechnical Engineering (AGTE –2005)**, National Institute of Technology, Rourkela, 22 – 23 January 2005, pp. 140 – 146.
11. V. Murugaiyan, **R. Saravanane**, , T. Sundarararjan and V.K. Stalin (2005) Effect of Industrial effluent on Physio-chemical and properties of fine grained soil. **All India Seminar on Advances in Geotechnical Engineering (AGTE –2005)**, National Institute of Technology, Rourkela, 22 – 23 January 2005, pp. 157-163.

12. **Raman Saravanane** (2006) 'Water Quality Perspectives on Tsunami Prone Estuarine Systems – A Case Study'. **National Seminar on Disaster Management**. Neyveli Lignite Corporation (NLC) Ltd, Neyveli, India, 15 – 16 July 2006, pp. 183 – 186.
13. B. Radjaram, **R. Saravanane** and V. Murugaiyan (2007). Energy Recovery and Environmental Sustainability on Integrated Renewable Biomass System, *National Conference on Demand Side Management Options for Energy Sustainability (DSMES' 07)*, **Energy Society of India**, Pondicherry, 25 th October, 2007, India., pp. 87-89.
14. S. Balasubramanian and **R. Saravanane** (2008). 'On-line Instrumentation System and Monitoring of Microbiological Quality of Drinking Water for Urban and Rural Communities' *National Conference on Instrumentation Systems Measurement and Automation (CISMA'07)*, 7 – 8 th February, 2008, Pondicherry Engineering College, Puducherry, India, pp. 9- 14.
15. R. Menaka, R. Ravikumar, **R. Saravanane** and Zealakshmi (2008). 'Municipal Solid Waste Management of Puducherry – A Case Study of Leachability of Windrows Composting Yard for Reversibility', *All India Seminar on Solid Waste Management, The Institution of Engineers (India)*, 22 – 23 February, 2008, IIT Madras, Chennai, India, pp.77- 87.
16. **R. Saravanane** (2009), Special Lecture on “**Eco-friendly algae for Environmental Management**” organised by **Institution of Engineers (India) and Engineers & Scientists Association**, 30 th September 2009, **Neyveli Lignite Corporation Ltd, NLC**, Neyveli, Tamilnadu, India.
17. **R. Saravanane** (2010), Shared Technical discussion and attended training workshop on “**Development of Technology Commercialization and Transfer specialists**” Conducted by *Consultancy Development Centre (CDC)*, DSIR, *Ministry of Science and Technology*, Government of India, 24- 26, February 2010, New Delhi
18. B. Radjaram, K. Kaviarasan, **R. Saravanane** and T. Sundararajan (2011), Feasibility study of biohydrogen production from press mud and assessment of operating parameters, *National conference on Biological wastewater treatment towards Green Environment*, **National Institute of Technology Calicut**, India 28- 29 th January, 2011, pp. 70.
19. S. Sundararaman, N. Madhivanan and **R. Saravanane** (2011) Treatment of pharmaceutical wastewater using a submerged membrane bioreactor, *National conference on Biological wastewater treatment towards Green Environment*, **National Institute of Technology Calicut**, India 28- 29 th January, 2011, pp. 43.

20. Attended **ISTE Sponsored** Short – term training Program on *Nano Engineering Materials* 13th to 23rd December, 2010, Pondicherry Engineering College, Puducherry, India
21. Received **First prize by Mr. N. Madhivanan, M.Tech** (2011) (Environmental Engg, Civil Engg Dept, Pondicherry Engineering College, India) for the best technical paper titled, Effect of operating parameters on the efficiency of a membrane bioreactor treating pharmaceutical wastewater, presented at **AAKAAR 2011, Indian Institute of Technology Bombay, (IIT B), India**

Expert Lecture – Presentations

1. R. Saravanane, **Environmental Risk Assessment and Case study**, Presented for Short-term Course on ‘Environmental Impact Assessment’, for **Tamilnadu Pollution Control Board (TNPCB)** at IIT Madras, Chennai, India, 16-20, July, 2007.
2. R. Saravanane, **Environmental Risk Assessment**, Presented for Short-term Course on ‘Recent Advances in Environmental Engineering’, at NIT Trichy, India, 19-23, February, 2007.
3. R. Saravanane, **Introduction to Environmental Sanitation and its Socio economic Well Being**, Presented for ‘Capacity Building Programme on Community Managed Sanitation and Solid Waste Management’ organised by **TWAD Board Chennai**, India, 8 – 13 October, 2007.
4. R. Saravanane, Expert Lecture for Workshop on *Cleaner Production Applications in Chemical and Pharmaceutical Industries*, organised by **Cleaner Production Cell, Andhra Pradesh Pollution Control Board (APPCB)**, Hyderabad, India, 18 th July 2008.
5. R. Saravanane, Expert Lecture for Workshop on **Pollution Abatement through Science and Technology** organised by Rajeew Gandhi College of Engineering and Technology, Pondicherry , India, 26 th May 2008
6. R. Saravanane, Special Lecture on “**CO₂ – KICK THE HABIT**” for the celebration of **World Environment Day**, organised by **Institution of Engineers (India) and Engineers and Scientists Association, Neyveli Lignite Corporation Ltd, NLC**, Neyveli, India, 19 th June 2008.
7. R. Saravanane, Expert lecture on “**Research and Teaching Methodology- Environmental Engineering**”, 20th Sep. to 1st Oct. 2008, at Ecole Supérieure d'Ingénieurs de Poitiers (ESIP), University of Poitiers, Poitiers, France.

8. R. Saravanane, Expert Technical lecture on “**KICK THE CO₂ HABIT**” for celebration of “*Environment Month*”, 18 th December 2008, **Steel Authority of India Limited (SAIL)**, Salem Steel Plant, Tamilnadu, India.
9. R. Saravanane, Expert Technical discussion on “**Engineering and Environmental Issues on feasibility of secondary sewage effluent to offshore algal growth**”, International workshop on **Wind, Sea Algae–Offshore cultivation of algae for biodiesel production**, 20 - 22 April 2009, **Lolland, Copenhagen, Denmark**.
10. R. Saravanane, Guest Lecture on, “**Environmental Engineering and Sustainable Development – An Overview**”, 30 th April, 2009, **Manakula Vinayakar Institute of Technology, Puducherry, India**.
11. R. Saravanane, Special Lecture on “**Eco-friendly algae for Environmental Management**” organised by **Institution of Engineers (India) and Engineers & Scientists Association**, 30 th September 2009, **Neyveli Lignite Corporation Ltd, NLC, Neyveli, Tamilnadu, India**.
12. **R. Saravanane** (2011) Assessment of optimum dilution ratio and microbial consortium for Biohydrogen production by anaerobic co-digestion of press mud with sewage and water- A comparative study, Presented at **World Congress on Biotechnology**, (*OMICS Publishing group, USA*), *March, 21-23,2011 Hyderabad*, India.

PROJECTS

I. SPONSORED PROJECTS

1. **Principal Coordinator** for an **AICTE Sponsored Research Project** titled, **Chemically Modified Low Cost Treatment for Heavy Metal Effluent Management** Under **Thrust area Scheme**, New Delhi, India (Sanctioned for Rs. 3.00 Lakhs for Two years)
2. **Chief Coordinator** for an **AICTE Sponsored Research Project** titled project titled, “*Studies on Fuzzy Logic Decision Support System for Integrated surface water restoration and Drought prediction Application on Rural and Semi-urban Areas*”, **Under R & D Scheme**, New Delhi, India (Sanctioned for Rs. 4.20 Lakhs (2003 – 2005)
3. **Modernization of Environmental Engineering Laboratory**, Sanctioned under **MODROB Scheme-AICTE**, New Delhi, India, (Sanctioned for Rs. 8.00 Lakhs (2003 – 2005).
4. **Principal Investigator, Characterization and Monitoring of Solid Waste Dumping Sites in Puducherry Region** – Department of Science, Technology and Environment (DSTE), Puducherry, 2007 -08.

II. CURRENT RESEARCH AND FIELD/CONSULTANCY PROJECT

- **Environmental Risk Assessment (ERA) of proposed Liquefied Petroleum Gas (LPG) Bottling Plant, Capacity 12000 MTPA, Pondicherry Union Territory, Puducherry, India (Completed- Rs. 50 lakhs))**
- **In plant Modifications and Performance Evaluation for Sago and starch based factories, Salem, Southern region, India (Rs. 45 lakhs – completed))**
- **Online monitoring of Biogas Plant (Capacity : 10m³) using Computer Aided Data Acquisition and Control, INDP, Karaikal Region, Puducherry, India (Rs. 25 lakhs – completed).**
- **Solid Waste Management – Municipal Solid Waste (40 Metric Tonne per day) Toxicity Characterization (TCLP), Leachate Treatment, Refuse Derived Fuel (RDF) alternatives to plastic waste management, INDP, Karaikal Region, Puducherry, India (Rs. 50 lakhs).**
- **Design and Monitoring of STP, ETP, DEWATS, RO, DM, Industrial Air Pollution Control, Leachate treatment system**

CONFERENCES/WORKSHOPS/ TRAINING

SHORT-TERM TRAINING PROGRAMME CONDUCTED

Coordinator for an AICTE - ISTE sponsored – Short Term Training Programme on **Recent Advances in Waste Water Treatment with Emphasis on Anaerobic and Membrane Technologies, Pondicherry, India (16th to 28th , December 2002).**

WORKSHOP/SEMINAR CONDUCTED

AICTE invited applications from AICTE recognized institutions to extend financial assistance for conducting one day workshop on the theme **Programme of Environment and Pollution Awareness**. One day workshop, titled, **Innovative Pollution Control Techniques for Sustainable Environmental Development**, was conducted in **Pondicherry Engineering College, Pondicherry, India, on 17th September 2004**. – Involved as coordinator and the recommendations were recorded.

INTERNATIONAL CONFERENCE ORGANISED

- **Organiser and Technical Convener for - *International Conference on “Cleaner Technologies and Environmental Management”*, 4- 6, January 2007, Organised**

by Civil and Chemical Engineering Departments of Pondicherry Engineering College, Puducherry, India.

[Under the sponsorship of Central Pollution Control Board (CPCB), New Delhi, India; Ministry Of Environment And Forests (MoEF), New Delhi, India; Council Of Scientific And Industrial Research (CSIR), New Delhi, India; CPHEEO, Ministry of Urban Development, New Delhi, India; Department of Science, Technology And Environment, Puducherry, India]

INTERNATIONAL WORKSHOP ORGANISED

Organising Secretary and Technical Convener

International Workshop on “Indo/French Technologies for Sustainable Environment”, 10 th April 2008, Organised by Department of Civil Engineering, Pondicherry Engineering College, Puducherry, India, Intercultural Network for Development and Peace, India and Poitou Charentes Region, France.

RESEARCH COLLABORATION

1. As Expert in International workshop Journe'es Information Eaux, 23 – 25 th Septembre, 2008, ESIP, Poitiers and Research collaboration during 20th Sep. to 1st Oct. 2008, at Ecole Supérieure d'Ingénieurs de Poitiers (ESIP), University of Poitiers, Poitiers, France.

2. Expert Technical discussion on “Engineering and Environmental Issues on feasibility of secondary sewage effluent to offshore algal growth”, International Workshop on Wind, Sea Algae – Offshore cultivation of algae for biodiesel Production, 20 - 22 April 2009, Lolland, Copenhagen, Denmark (www.algaepedia.org)