



GOVERNMENT COLLEGE OF TECHNOLOGY,
Coimbatore – 641013
Centre of Excellence for Environmental Studies
Department of Environmental Engineering



GCT is offering M.E. (Environmental Engineering) course (Full time & Part time) from 1981 onwards. Extensive research works are being carried out in the fields of solid waste management, wastewater treatment, water quality management, air quality assessment and monitoring. The department is carrying out consultancy services as a third party consultant in the Design, Commissioning and Monitoring of the Sewage Treatment Plant, Water Treatment Plant and Solid Waste Management System. Environmental Engineering as a wing of Civil Engineering has established “Centre of Excellence for Environmental Studies” (CoE-ES) under the sub-component 1.2.1 of TEQIP Phase II with the funding of Rs.5 Crores sanctioned by NPIU, Noida. The Centre for Environmental Biotechnology and Nanotechnology has a strong multidisciplinary integration of sciences and engineering team.

Thematic Area:

- Biofuel from Waste
- Nanotechnology Application in Wastewater Treatment

Specific Objectives of CoE-ES:

- Fundamental Research
- Applied research and technology transfer
- Knowledge transfer for students
- Dissemination of knowledge through Long and Short training courses, Workshops & Conferences
- Assessments and Consultancy Services for private and public organisations.
- For scientific community- publications in scientific journals
- Organizing workshops and international conferences

Team of CoE-ES:

Coordinator	: Dr. T. Meenambal, Professor of Civil Engg
Procurement & Financial Nodal Officer	: Dr. J. Jeyanthi, Associate Professor in Civil Engg
I-I-I cell Nodal officer	: Mr.S. Murugan, Assistant Professor in Civil Engg

Advisory Committee Members of CoE-ES:

1. Dr. S. Rajamani, Chairman, AIUE Commission
2. Dr. K. Thanasekaran, Retired Professor, Anna University, Chennai
3. Dr. Senthil Chinnasamy, Chief Technology Officer, M/s. Aban Infrastructure Pvt. Ltd
4. Dr. S. Rajamohan, Managing Director, Enviro Care India Pvt Ltd.
5. Dr. P. Lakshmanaperumalswamy, Emeritus Professor, Bharathiar University
6. Dr. Paramasivam, Retired Scientist, NEERI, Nagpur



GOVERNMENT COLLEGE OF TECHNOLOGY,
Coimbatore – 641013
Centre of Excellence for Environmental Studies
Department of Environmental Engineering



7. Dr. M. Isaac Solomon Jebamani, PCE, GCT, Coimbatore
8. Dr. K. Muthukumar, Professor - Chemistry, GCT, Coimbatore
9. Dr. S. Vairam, Asso.Prof - Chemistry, GCT, Coimbatore
10. Dr. N. Suriyanarayanan, Asso. Prof. - Physics, GCT, Coimbatore
11. Mrs. M. C. Ravathi, APCE, GCT, Coimbatore
12. Mrs. R. Bhuvaneshwari, APCE, GCT, Coimbatore

Teaching and Research Assistantship under CoE-ES:

Academic Year: 2016-17

1. Number of Fulltime Ph.D. receiving research assistantship – 9
2. Number of Fulltime M.E. students receiving teaching assistantship – 27

Facilities Created:

1. Establishment of Research Centres:
 - Biotechnology Research Laboratory
 - Nanotechnology Research Laboratory

Research contacts with Foreign, Indian Institutes & Research Institutes

- Michigan State University USA,
- CLRI, Chennai
- M/s. Aban Infrastructure Pvt. Ltd



BIOTECHNOLOGY RESEARCH LABORATORY



List of Equipment:

1. High Performance Liquid Chromatography:
 - Quantitative and qualitative analysis of liquid samples
2. Biodiesel Rancimat
 - Determination of the oxidative stability of biodiesel.
3. Rotary Vacuum Evaporator
 - Purification of sample after solvent extraction
4. Accelerated Solvent Extractor
 - Extraction of desired product by use of organic solvent rapidly
5. Laminar Airflow Chamber
 - Microbial transfer under sterilized condition
6. Autoclavable Fermentor
 - Culturing and harvesting of microbes using fermentation





7. Large Volume Centrifuge
 - Separation of substance based on relative density in liquid suspension.
8. Thermomixer
 - Vortexing samples under controlled temperature
9. Ultra Sonicator
 - Dispersion of liquid using ultrasonic wave bath.
10. Incubator Shaker
 - Maintenance of suspended condition for microbial growth
11. Fully Automatic Autoclave
 - Sterilization of microbial medium
12. Moisture Analyser
 - Determination of moisture content
13. Tissue Tearor
 - Disruption of microbial cell wall
14. Cold Storage Chamber
 - Preservation of waste and water sample.
15. Fourier Transform Infrared Spectrophotometer
 - Qualitative assessment of functional groups
16. TOC analyser
 - Assessment of total carbon present in liquid sample

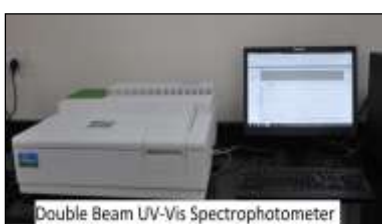




NANOTECHNOLOGY RESEARCH LABORATORY



1. Planetary Ball Mill
 - Size reduction of powder sample to nano scale
2. Double Beam UV Vis Spectrophotometer with DRS
 - Qualitative and quantitative analysis of liquid/ Powder/Paste/Thin films
3. Probe Sonicator
 - Dispersion of nano particles, degassing of liquids, disruption and speeding up dissolution.
4. Surface Area Analyser
 - Surface Area Characterization – Surface Area, Pore Diameter, Total Pore Volume.
5. Particle Size & Zeta Potential Analyser
 - Particle Size Analyser – Particle size analysis for micro and nano particles
 - Zeta Potential – Stability of nano particle, electrophoretic mobility of nanoparticle
6. CVD Chamber
 - Synthesize of Carbon Nano Tubes, Calcination of Nanoparticles, Scinterring of Nanoparticles under Inert atmosphere.
7. Atomic Force Microscope
 - Assessment of Surface topography, Surface smoothness, Particle size
8. Programmable Spin Coater
 - Substrate Preparation, Thin coat of nanoparticles,
9. Potentiostat/Galvanostat
 - Electrochemical properties of sample – IV, CV, Cyclic Voltametry
10. Water System for Ultrapure Water
 - Purification of water – HPLC grade





GOVERNMENT COLLEGE OF TECHNOLOGY,
Coimbatore – 641013
Centre of Excellence for Environmental Studies
Department of Environmental Engineering



Ongoing Researches:

1. Production of Biodiesel from Industrial wastewater
2. Energy Recovery from Solid waste
3. Alternate Resource recovery from E- waste
4. Adsorptive and Photocatalytic degradation of Dyes using Carbon Nanotubes
5. Electrocoagulation Studies using Nanoparticle Embedded Synthesized Membranes
6. Photocatalytic Studies on Endocrine Disruptors using NanoComposites
7. Treatment of Pharmaceutical Wastewater by Advanced Oxidation Process and Photocatalysis.
8. Wastewater treatment using Algal biomass.