OUR VISION

The vision of ICPT is to synthesise eco-friendly catalysts and propose sustainable technologies for petroleum industries including those for the growing bio refinery industries.

It has pleased no less than surprised me that of the many studies whereby I have sought to extend the field of general chemistry, the highest scientific distinction that there is today has been awarded for those on catalysis.

-Willhelm Ostwald

Catalysis is indispensable in chemical industries. To speed up transformations, enhance product selectivity, minimize waste and to reduce the cost of production, catalysts are important. They are the major component in petro chemical industries. Catalysis research has been initiated in National Chemical Laboratories, IITs and also in few colleges since many years. Today, we are among the top few countries processing world class calibre for catalysis development and manufacture. Anna University has acquired worldwide recognition in the area of catalysis through publications and by deputing researchers to different countries for post – doctoral programmes and research collaboration. It has been the interest of the research groups to establish a centre for catalysis and petroleum technology to represent South India, Hence the inception of ICPT in Anna University.

About Institute for Catalysis and Petroleum Technology (ICPT)

Institute for catalysis and petroleum technology (ICPT) has been approved by the syndicate and established in our University. The institute, one of our research center established in our university on par with the leading institutions like IIT, IIP- Dehradun, Pandit C Deendayal Petrole University (PDPU) and Rajiv Gandhi Institute of Petroleum Technology (RGIPT) and which will create a vibrant brigade of knowledge in the energy sector. Catalysis is a multi-dimensional (needing the skill of science, engineering, design, fabrication and control) and multi – disciplinary science covering all the four branches of chemistry, namely Physical, Inorganic, Organic and Bio in addition with chemical Engineering and Nanotechnology.

Our University is offering pioneering flagship programmes of B.Tech (4 Years) and M.Tech (2 Years) in petroleum refining and petrochemicals. The programmes are focussed mainly on the downstream processing with special emphasis on energy sector. ICPT has also plans to offer Master in Science (M.S, 5 year integrated dual degree) Doctoral Programme in petroleum, industrial Catalysis and Energy Engineering in future. Apart from the full time programmes ICPT also proposed to offer short term certificate programmes for working executives and other professionals to upgrade the skills in the latest trends to keep them abreast of the managerial and technological developments in the oil & gas sector. The institute is dedicated to cater the real time problems often faced by the industry.

Objectives of the Institute

- To develop and carry out research project and to broad cast basic and applied knowledge through publications, patents and reports to sponsored the areas of industrial catalysis and process development related to energy and chemical industries.
- To execute collaborative research with industrial partners and external clients especially to provide technical support for industrial R&D in energy and chemical industries.
- To serve as a platform for industrial and academic collaborators , externally funded research projects on catalytic material, energy conversion, energy utilization and energy trading.
- To activate fundamental research in catalysis- is the backbone of catalyst development . Development of innovativeness in industrial catalysis for sustainable, energy efficient and environmentally friendly process.
- Development of eco-friendly catalyst for pollution abatement.
- To device novel catalysts and processes for the need of globally competitive catalysts.
- To design a catalyst for petrochemical process like cracking, reforming, hydrotreating, sweetening, visbreaking, isomerisation of light paraffins and dehydrogenation of lower paraffins.
- Development of new catalyst and nano metal oxides catalyst for carbon nanotube synthesis and drug delivery.
- To design novel porous materials for adsorption and photo catalytic applications. Carbon di oxide, methane or natural gas conversion to syn gas and hydrogen production by catalytic processes.
- Periodical conduct of seminars/symposia/workshop to deliberate on the various facts of the subjects to give new directions to the next generation.
- Conduct of continuing education programmes such as short term courses for teachers and industrial personal's to keep the recent trends in area and tailor –made short- term courses for end users.

Prof .N.Nagendra Gandhi
Director

PROFILE

I welcome the viewers to the website of Institute for catalysis and petroleum technology (ICPT). This institute is an energetic research centre established under the Faculty of Technology, Anna University to bring researchers from inter-disciplinary areas to carry out research in the field of petroleum technology and catalysis.

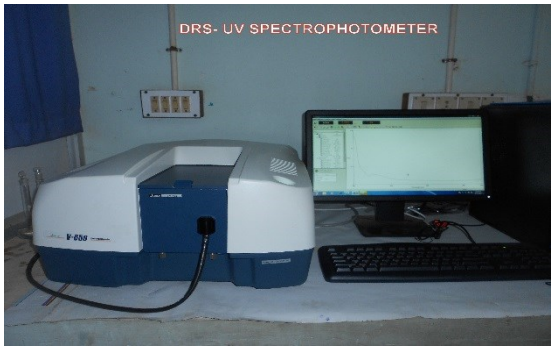
The vision of ICPT is to synthesise eco-friendly catalyst and propose sustainable technologies for petroleum industries including those for the growing bio-refinery industries. The enthusiastic commitment keeps the ICPT mission forceful and consistently moving ahead, with an outcome of strong record in research areas. ICPT focuses on applied catalysis, reaction engineering, energy conversion, energy utilization, chemical synthesis, petroleum technology and environmental protection.

Our mission is to develop and carry out research project and to disseminate basic and applied knowledge through publications, patents and reports. Further, this Institute does collaborative research with industrial Partners to provide technical support to industrial R&D. Based on the mission, the institute focuses on the development of eco-friendly catalysts for pollution abatement, innovativeness in industrial Catalysis for sustainable, energy efficient and environmental friendly process. On behalf of ICPT, I thank all the academicians, scientists, research scholars and R& D personnel for their valuable contributions and hope they shall continue to work to elevate ICPT to greater heights

Dispersive Raman Spectrophotometer

Tubular furnace (CVD)

DRS UV-Visible Spectrophotometer



Electrochemical work Station

BET-Surface area analyzer

HPLC

S.No	Title	Cost(in lakhs)	Funding Agency	Year, Status & Name of the Principal Investigator
1.	Synthesis and characterization of heteroatom doped carbon nanotubes and its use in supercapacitors	125. 036	DST, New Delhi SR/NM/NS-02/2011	2011 -2015 Dr. A. Pandurangan (PI) Dr. N. Nagendra Gandhi (Co-PI)
2.	Synthesis and characterization of heteroatom functionalized carbon nanotubes using MCM-41 molecular sieves via CCVD technique	10.668	UGC (MRP) New Delhi	2009 - 2014 Dr. A. Pandurangan
3.	Hydrodeoxygenation of lignin derived phenolic model compounds into hydrocarbons using metal supported mesoporous catalyst	12.54	DST (WOS -A)	2014 - 2017 Mrs. J. Kayalvizhi
4.	Biofuel production via hydrodeoxygenation using NiMo nonoporous silicaalumina catalysts	33.80	DRDO, ERIP/ER/1203047/ M/01/1535/2014	2014 - 2017 Dr. K. Shanthi
5.	Removal of endocrine disruptors in wastewater using visible light active photocatalytic reactor	98.00	UGC-CPEES	2010 - 2015 Dr. K. Shanthi
6.	Development of heterogeneous catalysts for the valorization of glycerol, a biodiesel byproduct, into fuels, additives and commodity chemicals	44.25	LSRB DLS/81/48222/LSR B-264/FSB/2012	2013 - 2015 Dr. K. Shanthi (Co-investigator)
7.	Development of heterogeneous catalysts for the valorization of glycerol, a biodiesel by-product, into fuels, fuel additives and commodity chemicals	44.28	DRDO-LSRB	Dr. T. Sivakumar
8.	Synthesis and characterization of quaternary ammonium salt cationic surfactant for clay modification - Its application in water remediation and effluent	7.30	UGC	2011 - 2015 Dr. M. J. Umapathy
9.	Hydrogen fuel generation by splitting of water using nano-sized metal doped layered titanates for fuel cell applications	27.577	CPRI	Dr. T. Sivakumar
10.	Development of multifunctional catalytic systems to convert abundant lignocellulose to hydrogen and liquid hydrocarbon fuels	130.00	DARL	Dr. T. Sivakumar
11	Recovery of hydrogen and elemental sulfur from hydrogen sulphide by indirect hydrolysis	US $ 37000	Petroleum Institute Abudhabi UAE	Dr. T. Sivakumar

Director
Institute for Catalysis and Petroleum Technology
Anna University
Chennai-600 025.
E-mail: nngandhi1@gmail.com & nngandhi@annauniv.edu
Phone: 044 22359180 & Mobile: 9840123290