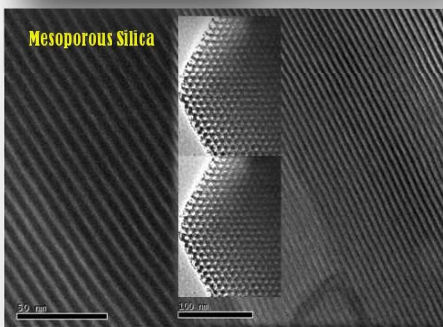


Platinum Nanoparticles



Mesoporous Silica



High Pressure Batch reactor



High Pressure Microreactor



Photoreactor

VISION/ MISSION/ OBJECTIVES

Emerge as the Premier National Centre for Catalysis focusing on Building Human Resource and Knowledge Capital | Establishing Advanced R & D activities | Initiating Research Programs in Frontier Areas | Cultivating Vibrant Partnership Among the Trinity of Academy-Research-Industry with an Overall Objective is to Develop Catalytic Valorisation of lingo-cellulosic Biomass to Chemicals and Fuels | Methanol Production from Natural Gas & Butanol from Ethanol | Visible-light Driven Photocatalytic Reduction of CO₂ | Experiments and Kinetic Modeling of Catalysts for Automotive DeNO_x | Development of 250 W PEM Fuel Cell Stack Development | Pilot-scale evaluation of catalytic processes | High-Pressure H₂ and CO₂ Adsorption | Gas Separation.

TOP 5 TECHNOLOGIES DEVELOPED

- Strategic High-Performance Fuel (JP-10) for DRDO
- Adsorptive Dehydrosulphurization process for CPCL
- Synthesis of mesoporous carbon materials for SHELL
- Alumina with defined textural properties for IOCL
- Selective hydrogenation of nitrobenzene for Granules India Ltd.

TOP 5 APPLICATIONS

- Petroleum and Petrochemical Industry
- Pharmaceutical and Food Industry
- Fine-Chemicals and Polymer Industry
- Pollution Control Technology - both Mobile and Stationary
- Alternative Energy including Hydrogen, Fuel Cell and Batteries

POSSIBLE AREAS OF COLLABORATIONS

Novel Catalysts | Nano-, Nanoporous & Hierarchical Materials | Zeolites | MOF | Porous Metal Oxides/Sulphides | Heterogeneous Catalysis | Energy Conversion Processes | Energy Storage & Production | Environmental Remediation | Sustainable Fuels & Chemicals | CO₂ Utilization | Methane Activation | Dimerization of Ethanol | Solar Hydrogen | Biomass Conversion.

EDUCATION & TRAINING

MTech (Catalysis Technology) | Orientation Program for Catalysis Researchers | GIAN Courses | Capsule Courses for Industry | Catalysis Society of India – Head Courters | National Symposium/Workshop on Catalysis | Summer and Winter Schools on Special Topics in Catalysis for Industry and Academics.

COLLABORATORS

Government Agencies: DST, DBT, CSIR, MNRE, DRDO, SERB | **Industrial Partners:** IOCL, BPCL, HPCL, CPCL, Reliance, Tata Chemicals, Granules India, Nagarjuna Fertilizers, Cummins, SABIC, P & G, SHELL, NISSON | **Institutes/Universities:** The University of Manchester (UK), Cardiff University (UK), Leeds University (UK), University of Surrey (UK), University of Nevada (USA), University of Delaware (USA), The University of Queensland (Australia), Western Sydney University (Australia), Tohoku University (Japan), Kumamoto University (Japan), Dublin City University (Ireland), Hungarian Academy of Sciences (Hungary), Boreskov Institute of Catalysis (Russia), Zelinsky Institute of Organic Chemistry (Russia), University of Stuttgart (Germany), University of Leipzig (Germany), University of Erlangen (Germany), Université Claude Bernard Lyon 1 (France), Institut Charles Gerhardt Montpellier (France) & Several Universities, Institutes and National Laboratories across the Country

STATISTICS

Projects: 10 | Patents: 30 (15 Granted, 15 Provisional) | Publications: 300, Books: 5 | Cover Page Articles: 6; Startups/Spinoffs: Under Discussion | Students/Staff: 25 | Faculty: 20 (5 CY; 9 CH; 2 BT; 1 EE; 1 Overseas Visiting Faculty; 2 Adjunct Faculty | 5 International Exchange Students).

Contact : Professor P. Selvam

T : +91-44-2257-4235/4200

E : selvam@iitm.ac.in

W : <http://nccr-iitm.com/>

Advisor : Professor B. Viswanathan

T : +91-44-2257-4242/5212

E : bvnathan@iitm.ac.in

W : <http://nccr-iitm.com/>



Key Funding Agency:
DST – 18 cr
Others including
Industry – 14 cr