

## PROFORMA FOR BIO-DATA

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Institution : Indian Institute of Technology Kharagpur, Pin-721302, West Bengal

Courses taught: Course Name

Fuel Technology (UG 3<sup>rd</sup> year, Spring semester)  
Energy/Fuel Laboratory (UG 2<sup>nd</sup> year, Spring semester)  
Reaction Engineering (UG 3<sup>rd</sup> year, Autumn semester)  
Reaction Engineering Laboratory (UG 4<sup>th</sup> year, Autumn semester)  
M.Tech, Analytical Laboratory (M.Tech 1<sup>st</sup> year, Autumn semester)

Departmental Activity: Laboratory In-charge of Energy Laboratory  
Member of Departmental purchase committee

Professional Recognition/ Award/ Prize/ Certificate, Fellowship received

S No	Name of Award	Awarding Agency	Year
1.	Senior Research Fellowship	UGC	1996
2.	Research Associateship	C.S.I.R	2000
3.	Life Member	Catalysis Society of India	1998
4.	Life member	IChE	2000
5.	Member	American Chemical Society(awarded)	2016-2019
6.	IChE NRC Award for publication in IChE as 2 <sup>nd</sup> best paper	IChE	2008
7.	Kulur Memorial Award for the best technical paper of 2008 in Ind. Chem.Engr	IChE	2008
8.	Best oral presentation award in International Conference on New Frontiers in Chemical, Energy and Environmental Engineering.	NIT Warangal	2015

Some Selected Publications (*List of papers published in SCI Journals, in year wise descending order*)

1. Influence of different hydrocarbon components in fuel on the oxidative desulfurisation of thiophene: Deactivation of catalyst, Biswajit Saha and **Sonali Sengupta**, *Fuel*, 150, 679-686 (2015).
2. Application of La-ZSM-5 Coated Silicon Carbide Foam Catalyst for Toluene Methylation with Methanol By Debarpita Ghosal, Jayanta Kumar Basu, **Sonali Sengupta**, *Bulletin of Chemical Reaction Engineering & Catalysis*, 10(2), 201-209 (2015).
3. Characterization of Nano-alumina and H-ZSM-5 Zeolite and Comparison of their Performance by Toluene Methylation Reaction with Ceramic Foam as Catalyst Support, Debarpita Ghosal, Jayanta Kumar Basu, **Sonali Sengupta**, *Current Catalysis*, 4, 111-124 (2015).
4. Study of Solid–Liquid Phase Transfer Catalysed Reaction to Produce p-Nitroanisole Using 18-Crown-6 as Catalyst By Swamy Kurella, Jayanta Kumar Basu, **Sonali Sengupta**, *Indian Chemical Engineer*, August, 1-10 (2015).
5. Oxidative removal of dibenzothiophene from a model fuel using nanocrystalline Ti-beta catalyst, Uttam Maity, Jayanta Kumar Basu, **Sonali Sengupta**, *Journal of energy Institute*, In press, 1-9 (2015).
6. Performance study of extraction and oxidation–extraction coupling processes in the removal of thiophenic compounds, Uttam Maity, Jayanta Kumar Basu, **Sonali Sengupta**, *Fuel Processing Technol.* 121, 119–124 (2014).
7. A neural network prediction of conversion of benzothiophene oxidation catalyzed by nano-Ti-beta catalyst, Uttam Maity, Jayanta Kumar Basu, **Sonali Sengupta**, *Fuel* 113, 180–186 (2013).
8. Oxidation of Catechol using Titanium Silicate (TS-1) Catalyst: Modeling and Optimization, Debarpita Ghosal, Jayanta Kumar Basu, **Sonali Sengupta**, *Bulletin of Chemical Reaction Engineering & Catalysis*, 8 (2), 167-177 (2013).
9. Application of synthesized nano-crystalline titanium silicate-1 catalyst in the oxidation of thiophene in a kinetic approach, Uttam Maity, Rosilda Selvin, Jayanta Kumar Basu and **Sonali Sengupta**, *Journal of Nanoengineering and Nanomanufacturing*, 2, 241-247 (2012).
10. Chemical modification of H-ZSM-5 for selective methylation, Debarpita Ghosal, Prashant Kamble, Jayanta Kumar Basu and **Sonali Sengupta**, *International Journal of Chemical Reactor Engineering*, 1542, 6580 (2012).

11. Optimisation of oxidative desulphurization of thiophene using Cu/titanium silicate-1 by box-behnken design, N. Jose, **S. Sengupta**, J.K. Basu, *Fuel*, 90, 226-232 (2011).
12. Application of Alumina to Oil and Grease Removal from Refinery Effluent, Abhinav Norisetty, Jayanta Kumar Basu and **Sonali Sengupta**, *Hydrology: Current Research*, 2(4) (2011).
13. A kinetic approach to the esterification of maleic anhydride with methanol on H-Y zeolite, Shivareddy Induri, **Sonali Sengupta** and Jayanta Kumar Basu, *Journal of Industrial and Engineering Chemistry*, 16, 467-473 (2010).
14. Removal of nitrophenol from water by organoclay, Sanjay Kureel, **Sonali Sengupta** and Jayanta Kumar Basu, *International Journal of Environmental Pollution Control and Management*, 1(1), 41-53 (2009).
15. Kinetics of benzyl butyrate synthesis under solid-liquid phase transfer catalysis, **Sonali Sengupta** and Jayanta Kumar Basu, *International Journal of Chemical Reactor Engineering*, 71-15(2009).
16. Selective production of bezaldehyde by permanganate oxidation of benzyl alcohol using 18-crown-6 as phase transfer catalyst, N. Jose, **S. Sengupta**, J.K. Basu, *Journal of Molecular Catalysis A: Chemical*, 309, 153-158(2009).

#### **Papers presented in conferences and symposia:**

1. Navneet Kumayat and **Sonali Sengupta**, Desulfurisation of Model Fuel using Metal Impregnated Nano Alumina Catalyst, Energy, Materials and Nano-Technology meeting, Dubai, 1-4<sup>th</sup> April, 2016.
2. Biswajit Saha, Somaina Bramha, Jayanta Kumar Basu, **Sonali Sengupta**, Ultrasound Assisted Oxidation of Thiophene using Phase Transfer Catalyst, Chemcon, IIT Guwahati, 27-30<sup>th</sup> December, 2015.
3. Biswajit Saha, Jyoti Prakash Behera, **Sonali Sengupta**, Comparative Studies of Extraction Ability of Organic Solvents to Extract Thiophene from Model Fuel, Chemference, IIT Hyderabad, 5-7<sup>th</sup> December, 2015.
4. G. Surya Chakradhara, Biswajit Saha, **Sonali Sengupta**, Application of Titanium Catalyst in Removal of Thiophene from Model Fuel, Recent Development in Chemical and Biochemical Engineering, Golden Jubilee International Conference, NIT, Durgapur, 2-4<sup>th</sup> October, 2015.

5. Uttam Maity, Jayanta Basu and **Sonali Sengupta**, Benzothiophene oxidation using nano-crystalline Ti-beta catalyst, Chemcon-2013, Mumbai, ICT, December, 2013.
6. Debarpita Ghosal, Jayanta K. Basu, **Sonali Sengupta**, HZSM-5 and its Nb modified form as catalyst support: A comparison of different properties and catalytic activity towards toluene methylation reaction with ceramic foam as catalyst support, 3<sup>rd</sup> Nirma university international conference on engineering, NUiCON, Ahmedabad, Gujarat, December, 2012.
7. **Sonali Sengupta** and Uttam Maity, Oxidative desulfurization of benzothiophene using mesoporous titanium silicate-1 catalyst, 243<sup>rd</sup> American Chemical Society National Meeting, San Diego, CA, USA, March, 2012.
8. Debarpita Ghosal, Jayanta K. Basu, **Sonali Sengupta**, Characterisation and comparison of HZSM-5 zeolite and high surface area alumina coated ceramic foam, Chemcon-2011, Bangalore, December, 2011.
9. Uttam Maity, Jayanta K. Basu, **Sonali Sengupta**, Oxidation of thiophenic sulfur compounds by H<sub>2</sub>O<sub>2</sub> with TS-1 and Ti-beta catalysts: A comparative study, Chemcon-2011, Bangalore, December, 2011.
10. Uttam Maity and **Sonali Sengupta**, Removal of organic sulfur compounds from model fuel by oxidative desulfurization and extraction, 3<sup>rd</sup> International Conference on Chemical Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, December, 2011.
11. A. Kalyan, N. Jose, J.K. Basu and **S. Sengupta**, Oxidative desulphurization of thiophene using Cu-TS-1 catalyst, 3<sup>rd</sup> International Conference on Chemical and Bioprocess Engineering, University of Malaysia, Sabha, Malaysia, August, 2009.
12. D. Ghosal, J. K. Basu and **S. Sengupta**, Characterisation and application of zeolite-coated ceramic foam, Chemcon, at Andhra University, Vishakhapatnam, India, 2009.

Project completed:

1) Development and application of ceramic foam supported catalysis in petrochemicals, CSIR.

2) A novel approach to a selective catalytic process for reducing thiophenic sulphur content from petroleum products, CSIR.

Detail of patent: A METHOD OF EXTRACTION OF REFRACTORY SULFUR COMPOUNDS FROM FUEL, Application no. 201631023708 dated 11.07.2016.

NPTEL Course: Fuels and Combustion Technology