Dr. Pankaj Kumar
Assistant Professor

Centre/School/Special Centre: School of studies of Engineering and Technology

Department: Chemical Engineering

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Qualifications

Ph.D. (Chemical Engineering)

IIT Hyderabad, Telangana, India

M. Tech. (Chemical Engineering)

IIT Hyderabad, Telangana, India.

B. Tech. (Chemical Engineering)

RTMNU Nagpur, India.

Area of Interest/Specialization

Biofuels, Biorefinery, Heterogeneous Catalysis, Reaction Engineering, Process design & Techno-economic Analysis, Pyrolysis of Biomass.

Experience (Teaching & Industrial): 3 years 5 months.

Sponsored Project:

1. ***Production of fuels and aromatics from lignocellulosic biomass: An integrated biorefinery approach.***
   Funding Agency : DBT, Govt. of India
   Approved amount (Rs): 29,63,360/-
   Project duration : 3 Years
   Role : PI

Journals

1. Anant Gaurav Kedia, Arnab Dutta, **Pankaj Kumar*,** Dimethyl Carbonate as a Cost-Effective Substitute of Methanol for Biodiesel Production via Transesterification of Nonedible Oil. *BioEnergy Research*. **2022, DOI:** 10.1007/s12155-022-10509-y.
2. Anant Gaurav Kedia, **Pankaj Kumar***, Arnab Dutta, Value added hydrocarbons from lignin derived bio-oils: Insights from process simulations. *Materials Today: Proceedings*, **2022, DOI:** 10.1016/j.matpr.2022.07.042**.**
3. Mohan Varkolu, Alekhya Kunamalla, Srinivas Aswini Kumar Jinnala, **Pankaj Kumar**, Sunil K Maity, Debaprasad Shee, Role of CeO2/ZrO2 mole ratio and nickel loading for steam reforming of n-butanol using Ni-CeO2-ZrO2-SiO2 composite catalysts: A reaction mechanism. *International Journal of Hydrogen Energy*, **2021,** 46(10), 7320-7335**,** DOI: 10.1016/j.ijhydene.2020.11.240.

4. Sudhakara Reddy Yenumala, **Pankaj Kumar**, Sunil K. Maity, Debaprasad Shee, Hydrodeoxygenation of karanja oil using ordered mesoporous nickel-alumina composite catalysts. *Catalysis Today*, **2020**, 348, 45-54. DOI:10.1016/j.cattod.2019.08.040.
5. **Pankaj Kumar**, Sunil K. Maity, Debaprasad Shee, Hydrodeoxygenation of stearic acid using Mo modified Ni and Co/alumina catalysts: Effect of calcination temperature. *Chemical Engineering Communications,***2020**, 207 (7), 904-919. DOI:10.1080/00986445.2019.1630396.
6. **Pankaj Kumar**, Sunil K. Maity, Debaprasad Shee, Role of NiMo alloy and Ni species in the performance of NiMo/alumina Catalysts for Hydrodeoxygenation of stearic acid: A Kinetic Study. *ACS Omega,* **2019**, 4 (2), 2833-2843. DOI:10.1021/acsomega.8b03592.
7. Sudhakara Reddy Yenumala, **Pankaj Kumar**, Sunil K. Maity, Debaprasad Shee, Production of green diesel from karanja oil (*Pongamia pinnata*) using mesoporous NiMo-alumina composite catalysts. *Bioresource Technology Reports,* **2019**, 7, 100288. DOI:10.1016/j.biteb.2019.100288.
8. **Pankaj Kumar**, Pramod Kumar, Peddy V C Rao, Nettem V Choudary, Gandham Sriganesh, Saw dust pyrolysis: Effect of temperature and catalysts. *Fuel,* **2017**, 199, 339-345. DOI:10.1016/j.fuel.2017.02.099.
9. **Pankaj Kumar**, Sudhakara Reddy Yenumala, Sunil K. Maity, Debaprasad Shee, Kinetics of hydrodeoxygenation of stearic acid using supported nickel catalysts: Effects of supports. *Applied Catalysis A: General,* **2014**, 471, 28-38. DOI:10.1016/j.apcata.2013.11.021.

Book chapters

1. **Pankaj Kumar***, Deepak Verma, Malayil Gopalan Sibi, Paresh Butolia, Sunil K Maity **Chapter 4**: Hydrodeoxygenation of triglycerides for the production of green diesel: Role of heterogeneous catalysis, Hydrocarbon Biorefinery Sustainable Processing of Biomass for Hydrocarbon Biofuels, Editor:Sunil K. Maity, Kalyan Gayen and Tridib Kumar, Academic Press, Elsevier, **2022,** 97-126. ISBN:978-0-12-823306-1.DOI:10.1016/B978-0-12-823306-1.00013-3.
2. Alekhya Kunamalla, Swarnalatha Mailaram, Bhushan S. Srirame, **Pankaj Kumar**, Sunil K. Maity, **Chapter 1** - Hydrocarbon biorefinery: A sustainable approach, Hydrocarbon Biorefinery Sustainable Processing of Biomass for Hydrocarbon Biofuels, Editor:Sunil K. Maity, Kalyan Gayen and Tridib Kumar, Academic Press, Elsevier, **2022,** 1-44**,** ISBN:978-0-12-823306-1. DOI:10.1016/B978-0-12-823306-1.00004-2.
3. S Mailaram, **Pankaj Kumar**, A Kunamalla, Palkesh Saklecha, SK Maity* **Chapter 3: Biomass, Biorefinery, and Biofuels, Sustainable Fuel Technologies Handbook**. Editor: Suman dutta and Chaudhery Mustansar Hussain, Academic Press, Elsevier, **2021**, 51-87. ISBN: 978-0-12-822989-7. DOI: 10.1016/B978-0-12-822989-7.00003-2.
4. Swarnalatha Mailaram, **Pankaj Kumar**, Sunil K. Maity*, **Biofuels from Triglycerides: A Review.** ***Triglycerides: An Overvie****w*. Editor: Felix J.Juhl, Academic Press, Nova Science Publishers, Inc., New York **2020**, 1-27. ISBN: 978-1-53618-134-0.
5. **Pankaj Kumar**, M Varkolu, S Mailaram, A Kunamalla, SK Maity, **Chapter 12 - Biorefinery Polyutilization Systems: Production of Green Transportation Fuels from Biomass.** ***Polygeneration with Polystorage for Chemical and Energy Hubs***, **2019**, 373-407. *Publisher: Elsevier*. DOI: 10.1016/B978-0-12-813306-4.00012-4.

Conferences

1. Anant G. Kedia, **Pankaj Kumar**, Arnab Dutta. Value added hydrocarbons from lignin derived bio-oils: Insights from process simulations. 1st International Conference on Novel Materoals and Technologies for Energy and Environemnt Applications, NMTEEA-2022, Hyderabad, India. (**Anant won best oral presentation award**).
2. **Pankaj Kumar**, Sunil K. Maity, Debaprasad Shee, Hydrodeoxygenation of stearic acid over NiMo/gamma-Al_2O_3 catalyst, American Chemical Society 255th, New Orleans, LA, March 18-22, 2018.
3. **Pankaj Kumar**, S R Yenumala, Sunil K. Maity, Debaprasad Shee, Hydrodeoxygenation of Stearic Acid Using Supported Nickel Alumina Catalysts. CHEMCON, Dr. B.R. Ambedkar National Institute of Technology, Punjab, India, 27-30 December, 2012.

(**Dr. Pankaj Kumar**)