

Nidhi Kushwaha

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Research Interest

Conversion of lignocellulosic biomass into value added chemicals via heterogeneous catalysis.

Utilization of agro-residue for production of platform chemicals.

Application of machine learning and other computational techniques in catalyst screening and reaction engineering.

Utilization of municipal solid waste for production of chemicals and valuable solid residue.

Education

Degree	Affiliation	Specialization	GPA or %	Year
PhD	Indian Institute of Technology, Delhi	Chemical Engineering	8.636/10	Pursuing
Master of Technology	India Institute of Technology, (ISM), Dhanbad, Jharkhand	Fuel Engineering	9.139/10	2019-2021
Bachelor of Technology	Banasthali Vidyapith, Jaipur, Rajasthan	Chemical Engineering	64.3%	2014-2018
Secondary school	Central Board of Secondary Education	Science and Mathematics	10/10	2012
Senior secondary school	Central Board of Secondary Education	Science and Mathematics	72.4%	2014

Internships

1. Company: Gail Authority of India Limited (GAIL), Vijaipur, India
Position: Intern (May 2016)
Project: Design of a preheater in LPG (Liquefied Petroleum Gas) plant unit to reduce fuel gas consumption and thereby reduction in fuel gas cost.
 2. Company: Oil and Natural Gas Corporation (ONGC), Surat, India
Position: Intern (July-August 2017)
Project: Theoretical design of a two-phase heat condenser for GSU unit gas plant
 3. Company: Engineers India Limited (EIL), India
Position: Intern (September – November 2017)
Work: Design of pump using hydraulics sheet and understanding the P&ID of petrochemical plant.
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PhD Topic

Novel catalytic materials for the transformation of bio-renewable resources into value added chemicals and fuels.

Under the supervision of:

1. Prof K.K. Pant, Director IIT Roorkee, Uttarakhand, 247667
Professor, Department of Chemical Engineering, Indian Institute of Technology (IIT) Delhi, New Delhi, India 110016
2. Prof M Ali Haider, Professor, Department of Chemical Engineering, Indian Institute of Technology (IIT) Delhi, New Delhi, India 110016
3. Prof Ejaz Ahmad, Assistant Professor, Department of Chemical Engineering, Indian Institute of Technology (Indian School of Mines), IIT(ISM), Dhanbad, Jharkhand, India 826004

Publications

1. **Nidhi Kushwaha**, Debarun Banerjee, Khwaja Alamgir Ahmad, Nagaraj P. Shetti, Tejjraj M. Aminabhavi, Kamal K. Pant, Ejaz Ahmad, “Catalytic production and application of bio-renewable butyl butyrate as jet fuel blend- A review” Journal of Environmental Management (Impact Factor: 8.91), 2022, 310, 114772, <https://doi.org/10.1016/j.jenvman.2022.114772>.
2. Debarun Banerjee, **Nidhi Kushwaha**, Kamal K. Pant, Nagaraj P. Shetti, Tejjraj M. Aminabhavi, Ejaz Ahmad “Hydrogen Production via Photo-reforming of Bio-renewable Resources”, Renewable and Sustainable Energy Reviews (Impact Factor: 16.799), <https://doi.org/10.1016/j.rser.2022.112827>.

Book Chapters

1. **Nidhi Kushwaha**, Debarun Banerjee, Shireen Quereshi, Kamal K. Pant, Ejaz Ahmad, “Insights into COVID-19 Waste Management: Sources, Composition, Disposal and Challenges” in Solid Waste Management: Chemical Approaches by CRC press (Accepted).
 2. Debarun Banerjee, **Nidhi Kushwaha**, Ejaz Ahmad, Shireen Quereshi, K.D.P. Nigam, “Eco-Design Strategies for Recycling of E-waste” in Solid Waste Management: Chemical Approaches by CRC press (Accepted).
 3. Vallari Chourasia, Nidhi Kushwaha, Neethu TJ, Aisha Noor, “Green and Sustainable routes for degradation of toxic chemicals: Carbon based hybrid metal composites” in Biodegradation of Toxic and Hazardous Chemicals by CRC press (Submitted)
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Conferences

1. **Nidhi Kushwaha**, Debarun Banerjee, Ejaz Ahmad "Beginner's Guide to Machine Learning Approaches for Application in Heterogeneous Catalysis" Poster, ACS Spring2021, April/2021.
<https://www.morressier.com/o/event/6022c0c2e8bb0500118660c6/article/609136a06e987178c2dc7b3c>
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Webinars

1. Webinar on "COVID-19 and its Socio-Economic Impact" organized by Department of Chemical Engineering, ACS International Student Chapter, IChE Regional Centre, IIT ISM Dhanbad, July/2020.
 2. National Workshop on "Solid Waste Management" organized by Delhi Research Implementation and Innovation (DRIIV), July/2021.
 3. Webinar on "Clean Energy Technologies" organized by Department of Chemical Engineering, ACS International Student Chapter, IChE Regional Centre, IIT ISM Dhanbad, September/2021.
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Awards

1. Recipient of prestigious "**Prime Minister Research Fellowship (PMRF)**" 2022 from Government of India for Doctoral Research.