

# NITISH MITTAL

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## PROFESSIONAL EXPERIENCE

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Staff/Senior Research Engineer, <b>ExxonMobil</b> , USA	2018 – present
Engineering R&D Intern, <b>Cargill</b> , USA	May-Aug, 2017
Summer Intern, <b>Dow Chemicals</b> , India	May-July, 2011

## EDUCATION

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<b>Ph.D., Chemical Engineering (Minor: Chemistry)</b>	<b>2012 – 2018</b>
University of Minnesota, USA	GPA: 3.94/4.00
<b>B.Tech. - M.Tech., Chemical Engineering</b>	<b>2007 – 2012</b>
Indian Institute of Technology (IIT) Kanpur, India	GPA: 8.8 (Bachelors), 10.0 (Masters)/10.0

## AWARDS & ACHIEVEMENTS

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- [Hart Energy 40 under Forty Award 2021](#) (youngest among the honorees)
- Innovator of the Year Award 2020, ExxonMobil (process technology recognition)
- Global Technology Award 2020, ExxonMobil (chemical technology recognition)
- Spot Award for achieving accelerated technological readiness, ExxonMobil
- Nominated for U of MN Doctoral Dissertation Fellowship 2016-17 (among top 10% university-wide)
- Finalist (among 9 teams) in Dow Sustainability Innovation Student Challenge Award, 2016
- Engineering Innovation Fellowship, 2016 awarded by Graduate School, U of MN
- Proficiency Medal for the best academic performance in Chem. Eng., IIT Kanpur, 2012

## LEADERSHIP EXPERIENCE

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Treasurer, <b>IIT Alumni of Greater Houston</b> , 501(c)(3) organization	2022
Officer, <b>Asian Connection for Excellence (ACE)</b> , ExxonMobil	2022
Gold-badge Recipient, <b>Collaborative Leadership Seminar Series</b> , U. of Minnesota	2016-17
Advisory Member, <b>Boreas Leadership Program</b> , U. of Minnesota	2016-17
Student Representative, <b>Student Affairs Committee</b> , U of Minnesota	2014-16
Student Team Lead, <b>Career &amp; Placement Office</b> , IIT Kanpur	2010-11

## PROFESSIONAL VOLUNTEER EXPERIENCE

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Judge, 3 Minute PhD Thesis Competition, AIChE	2022
Mentor, Chemical Reaction Eng. PhD Students, AIChE	2022
Volunteer, Award Committee, AIChE South Texas Section (STS)	2022
Judge, Texas Science & Eng. Fair (K-12)	2021-present
Mentor, Chemical Eng. PhD Students, University of Minnesota	2019-present
Peer-Reviewer, Wiley/Elsevier/ACS etc Journals	2017-present
Judge, Science Bowl and Eng. Fair (K-12) , MN Academy of Science	2016-18
International Speaker, Classroom Connection (K-12), Global Minnesota	2016-18

## PATENTS

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1. Group 1 metal ion content of microporous molecular sieve catalysts, 2020
2. Calcination of microporous molecular sieve catalysts, 2020

## SELECTED JOURNAL PUBLICATIONS

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1. Zeolitic imidazolate framework membranes made by ligand-induced permselectivation, *Science*, 361, 2018
2. Environmental Evaluation of the Improvements for Industrial Scaling of Zeolite Membrane Manufacturing by Life Cycle Assessment, *ACS Sustainable Chemistry and Engineering*, 6, 2018
3. Bioethanol enrichment using zeolite membranes: molecular modeling, conceptual process design and techno-economic analysis, *Journal of Membrane Science*, 540, 2017
4. A review of biorefinery separations for bioproduct production via thermocatalytic processing, *Annual Review of Chemical and Biomolecular Engineering*, 8, 2017
5. A mathematical model for zeolite membrane module performance and its use for techno-economic evaluation of improved energy efficiency hybrid membrane-distillation processes for butane isomer separations, *Journal of Membrane Science*, 520, 2016
6. Zeolite membranes: a review and comparison with MOFs, *Chemical Society Reviews*, 44, 2015

## BOOK CHAPTER

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1. Role of Membranes and Membrane-Reactor in Hydrogen Production, *Handbook of Membrane Separation*, 3<sup>rd</sup> ed., CRC Press (accepted)

## INVITED AWARD SESSION AND TALKS

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1. *AIChE Annual Meeting 2022*, Panelist for Transition from Academic Career to a Professional
2. *International Congress on Membranes & Membrane Processes 2017*, ([NAMS award session](#))
3. *Gordon Research Conference - Membranes: Materials & Processes 2016*, ([Modeling Membrane Transport Session](#) Late breaking talk)

## SELECTED CONFERENCE PRESENTATIONS

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1. Analysis and Optimization of Cyclopentadiene Dimerization Using Reactive-Distillation Modeling, *AIChE Annual Meeting 2020*
2. Comprehensive Process Modeling for Converting Natural Gas to Lower Olefin Via Reforming and Fischer-Tropsch Process, *AIChE Annual Meeting 2020*
3. Modeling Bioethanol Enrichment Using Hydrophobic and Hydrophilic Zeolite Membranes, *AIChE Annual Meeting 2017*, *Gordon Research Conference - Nanoporous Materials & Applications 2017*
4. Conceptual Process Design and Techno-Economic Analysis of a Hybrid Zeolite Membrane/Distillation Separation System for Butane Isomer Separation, *AIChE Annual Meeting 2016*, *International Conference on Inorganic Membranes 2016*

## CONFERENCE SESSION CHAIR

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1. AIChE Annual Meeting, 2020 – present
2. AIChE Southwest Process Technology Conference, 2021 – present
3. International Symposium on Chemical Reaction Engineering, 2023
4. North American Catalysis Society Meeting, 2019