MANIPAL UNIVERSITY JAIPUR

International Winter School-Manipal University Jaipur [IWSMUJ]-2023

[Offline Mode]

Project Overview

Name of Project: Novel porous monoliths with tailorable porous structures: Synthesis and Characterization.

Name of Mentors: Dr. Anees Y. Khan
Session: Jan.-Feb. 2023
Language of instruction: English
Number of contact hours: 75
Credit awarded: 03

Objectives of the project

Porous materials find enormous applications such as in healthcare, water treatment, catalysis and biosensing. In the proposed work, porous monolithic materials will be synthesized with interconnected or closed pore structures. The work involves synthesis of aminoclay and emulsion preparation for obtaining macroporous monoliths with desirable pore interconnections.

The objectives of the work are as follows:

1. To synthesize aminoclay and characterize it for porous monolithic materials
2. To synthesize monoliths from aminoclay with interconnected or closed pore structures.

Organization of the project

Total contact hrs 75		
1st week:	20 hrs (Lab work)	**Task 1:** Synthesis of aminoclay **Task 2:** Literature review (will continue till the end of the project)
2nd week:	20 hrs (Lab work)	**Task 3:** Use emulsion templating method to produce monoliths with interconnected porous structure and perform necessary characterizations. **Task 4:** Midterm exam will be in the form of a presentation
3rd and 4th week:	35 hrs (Lab work)	**Task 5:** Use emulsion templating method to produce monoliths with closed pores and perform necessary characterizations. **Task 6:** End term exam will be in the form of a presentation

Mode of conduction of the project: **Offline**

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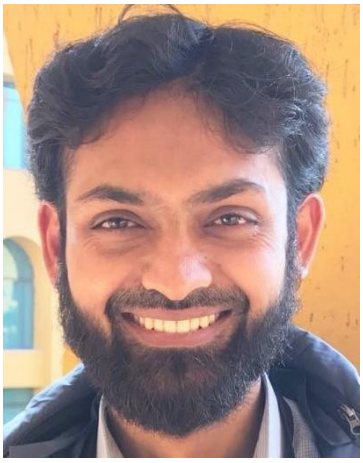
Brief profile of the instructor



Dr. Anees Y. Khan is working as associate professor and head of the department of Chemical Engineering at Manipal University Jaipur (MUJ). He did is masters in chemical engineering from Birla Institute of Technology and Science (BITS) Pilani (India) and PhD from Indian Institute of Technology (IIT) Bombay (India). He focused on mesoporous silica for applications in biosensing, and catalysis during his PhD. Post PhD he worked in National Chemical Laboratory Pune (India) as Research Associate on monolithic materials. He has established Porous Materials Laboratory at MUJ where he is focusing on making a wide range of porous materials for water treatment and healthcare applications.

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