

# ARMAAN RAIS

## M. Tech (Res) - Chemical Engineering

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## PROJECTS

### Microkinetic Modelling of Biomass Pyrolysis

#### M. Tech Project

Sep 2021 - Present

IISc, Bangalore

- The Reaction Mechanism involves large number of species and reaction. The network is simplified while maintaining their description capability.

### Microkinetic Modelling of Propane Dehydrogenation (PDH)

#### Self Project

July 2021 - Aug 2021

IISc, Bangalore

- The complex nature of PDH and side reactions (Deactivation and Cracking reactions) requires fundamental insight into the reaction mechanism, which gives a new direction to enhance catalyst design.
- Simulated Selectivity - Conversion profile for Propane Dehydrogenation Process for products using Athena Visual Studio.

### Parameter Estimation

#### Course Project: Applied Statistics

Mar 2021 - May 2021

IISc, Bangalore

- Verification of Parameter Estimated for the mechanism of Acrolein Oxidation over promoted Mo-V Oxide catalyst using Bayesian Estimation in Athena Visual Studio.

### Techno - Economic Feasibility Report on " Production of Pyridine from Acetaldehyde, Ammonia and Formaldehyde"

#### B. Tech Project

Aug 2019 - July 2020

Aligarh Muslim University, Aligarh

- Process and mechanical design of storage tanks, furnace, distillation column, pumps, heat exchangers, fluidized bed reactor.
- Economics evaluation (CapEx, OpEx, Payback Period, ROR, PBT, PAT, Depreciation).
- Material and Energy balance on various unit operations present in the flowsheet.

### Environmental Risks Pertaining to Hydraulic Fracturing for Shale Gas Production

#### Course Project: Seminar and Report Writing

Aug 2018 - Nov 2018

Aligarh Muslim University, Aligarh

## INTERNSHIP

### Oil and Natural Gas Corporation (ONGC)

June 2018 - July 2018

Dehradun

- Characterization of different types of crude oil specially waxy, asphaltic, and rheological studies for flow assurance in pipeline transportation.

## EDUCATION

### M.Tech (Res) - Chemical Engineering

#### Indian Institute of Science

2020-Present

Bangalore

CGPA: 8.8/10

### B.Tech - Chemical Engineering

#### Zakir Husain College of Engineering and Technology, Aligarh Muslim University

2016-2020

Aligarh

CGPA: 8.89/10

### Senior Secondary - CISCE Board

#### St. Vincent De Paul School

2013-2015

Budaun

Percentage: 86.67%

## SKILLS

Athena Visual

Python

MATLAB

ASPEN Plus

MS-Excel

MS-PowerPoint

## POSITIONS

### Student Placement Volunteer

#### Indian Institute of Science

Aug '21 - Present

Bangalore

### Alumni Relation Manager

#### EDC

2018 - 2019

Aligarh

### Captain Volleyball

#### Nadeem Tarin, AMU

2018 - 2019

Aligarh

## COURSES

- Chemical Reaction Engineering
- Numerical Methods
- Applied Statistics
- Numerical Computation
- Transport Phenomenon

## SOFT SKILLS

Time Management

Leadership

Adaptability

Team Work

Work Ethic