

EDUCATION

University of Manchester, Manchester City, UK

Bachelor of Engineering, Chemical Engineering, 09/2017 to 06/2021

University of California, Los Angeles, Los Angeles, US

PhD Student, Chemical Engineering, 09/2024 to Current

WORK HISTORY

RESEARCH ENGINEER, RESEARCH & DEVELOPMENT CENTER, SAUDI ARAMCO,
Dhahran, Saudi Arabia 08/2021 to Current

H₂S Dissociation via Thermal Catalysis project (02/2022 to Current)

- ❖ Performed Density Functional Theory (DFT) calculations using Quantum Espresso to identify top 10 catalysts for H₂S conversion to H₂ and elemental sulfur for further experimental testing
- ❖ Developed a microkinetic model to determine the turnover frequency of hydrogen formation and benchmarked it against experimental results
- ❖ Synthesized, characterized and tested different MoS₂ catalysts in King Abdullah University of Science and Technology KAUST (11/2023 to Current)
- ❖ Proposed a new catalyst to reduce sulfur poisoning using boron-doping

Adsorbent Tail Gas Treatment Project (09/2021 to 02/2022)

- ❖ Simulated the adsorption-based chemical separation of H₂S/CO₂ using ASPEN Adsorption to identify multi-variable impact (pressure, temperature, and feed composition)

Development of Differentiable Process Digital Twins Project (10/2023 to Current)

- ❖ Initiated a project to develop an automatic differentiation-based process optimization tool (using JAX software) that enables to optimize large-network systems

Others (04/2023 to 08/2023)

- ❖ Designed and conducted lab experiment on synthesising kinetic hydrate inhibitors (polymers) for gas & oil industrial applications