

# Dr.-Ing. Adeem Ghaffar Rana



## Senior Research Scientist – Catalysis and Sustainable Processes

Stollngasse 2, 09599 Freiberg, Germany | +49 157 88341120 | [ranaadeem@hotmail.com](mailto:ranaadeem@hotmail.com)

LinkedIn: [www.linkedin.com/in/ranaadeem/](http://www.linkedin.com/in/ranaadeem/)

### Professional Summary

Experienced researcher and educator with expertise in heterogeneous catalysis, sustainable aviation fuels, and photocatalytic systems. Proficient in catalyst synthesis, advanced analytical techniques, and project management. Proven ability to bridge academia and industry while mentoring students and collaborating on international projects.

### Professional Experience

#### Postdoctoral Researcher

**Technical University Bergakademie Freiberg (TUBAF), Freiberg, Germany** (Aug 2023 – Present)

- Leading methanol-to-olefins (MTO) research for sustainable aviation fuel (SAF) production under the Refinery for Future (REF4FU) project.
- Conducting catalyst screening, characterization, and statistical analysis using Design of Experiments (DoE).
- Presenting findings in project meetings with industrial collaborators.

#### Research Associate

**Technical University of Munich (TUM), Freising, Germany** (Nov 2017 – Dec 2022)

- Synthesized and characterized catalysts for green hydrogen production via artificial photocatalysis.
- Developed advanced HPLC methods to analyze organic pollutants.

#### Assistant Professor

**University of Engineering and Technology (UET), Lahore, Pakistan** (Nov 2015 – Jul 2023)

- Designed and delivered courses using outcome-based education (OBE) and innovative teaching methods.
- Bridged industry-academia gaps, equipping students for real-world challenges.

#### Assistant Manager - Research and Development

**Style Textile (Pvt.) Ltd., Lahore, Pakistan** (May 2010 – Feb 2013)

- Led R&D projects ensuring compliance with NIKE, REEBOK, and ADIDAS standards.
- Managed cross-functional teams for product development and quality assurance.

### Education

#### PhD (Dr.-Ing.) in Chemical Engineering/Materials/Catalysis

**Technical University of Munich (TUM), Germany** (Nov 2017 – Dec 2022)

- DAAD Scholarship Recipient.
- Thesis: Modification of Graphitic Carbon Nitride (g-C<sub>3</sub>N<sub>4</sub>) for Redox Applications.

## MS in Chemical Engineering

King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia (Jan 2013 – May 2015)

- Saudi Government Scholarship Recipient.
- Thesis: Photocatalytic Conversion of CO<sub>2</sub> to Hydrocarbons Using Cu-Zn/TiO<sub>2</sub> Catalyst.

## BS in Chemical Engineering

University of the Punjab, Pakistan (Jan 2006 – Apr 2010)

- Distinction Scholarship Recipient.
- Research: Extraction of Rare Earth Metals from Carbonatite Rock.

---

## Key Skills

### Technical Expertise:

- Catalyst synthesis and advanced characterization (XRD, FTIR, TEM, BET).
- Analytical techniques: GC-MS, NH<sub>3</sub>-TPD, LC-MS, and HPLC.
- Statistical analysis: Design of Experiments (DoE).

### Professional Skills:

- Independent project management and teamwork.
- Academic and industrial mentoring.
- Critical thinking and problem-solving.

### Digital Tools:

- MS Office, ChemDraw, Origin, Minitab, CAD Design.

### Languages:

- English (C1), German (B1), Urdu, and Punjabi (Native).

---

## Achievements & Awards

- DAAD Scholarship for PhD at TUM, Germany (2017).
- Saudi Government Scholarship for MS at KFUPM, Saudi Arabia (2013).
- Best Nominated Public Speaker, University of the Punjab, Pakistan (2009).

## Publications & Presentations

- 11 peer-reviewed publications, including 5 during PhD research.
- Presented at Biothermodynamics Colloquium, Freising, Germany, and 4th Indo-German Workshop, Berlin.

---

## References

Prof. Sven Kureti	Professor, TUBAF, Freiberg, Germany. E-Mail: <a href="mailto:sven.kureti@iec.tu-freiberg.de">sven.kureti@iec.tu-freiberg.de</a> Contact: +49-03731-39-4551
Prof. Dr.-Ing. Mirjana Minceva	Professor, TUM, Freising, Germany. E-Mail: <a href="mailto:mirjana.minceva@tum.de">mirjana.minceva@tum.de</a> Contact: +49 8161 71-6170
Dr. Michael Schwarze	Institut für Chemie, Technische Universität Berlin, Berlin, Germany. E-Mail: <a href="mailto:michael.schwarze@tu-berlin.de">michael.schwarze@tu-berlin.de</a> Contact: +49-30-314-24097