

Postdoctoral Fellow in Computational Cold Plasmas

Position Duration	01/Jun/2023 to 31/Dec/2023 (possibility of extension to up to 3 years)
Project Title	Cold plasma conversion of CO ₂ for in situ resource utilization applications
Contact	Dr. M. Gacesa (marko.gacesa@ku.ac.ae), Physics Department
Job code	2300009A

Apply: <https://aa255.taleo.net/careersection/ku+external+portal/moresearch.ftl?lang=en&portal=8116755942>

Position Overview

We are seeking a highly motivated Postdoctoral Fellow to work on computational cold plasma catalysis of CO₂ and its applications to in situ resource utilization in CO₂-rich atmospheres beyond Earth's orbit. The successful candidate will be tasked with investigating the efficiency of cold plasma conversion of CO₂ into fuels and breathable oxygen for different plasma sources at different physical conditions and environments. We are also interested in identifying and characterizing main physical mechanisms that could boost the cold plasma conversion efficiencies beyond that of traditional thermal processes. This will be a computational project and no laboratory work will be performed. As part of the project, the researcher will have access to state-of-the-art research equipment and facilities at the Center for Catalysis and Separation (<https://www.ku.ac.ae/cecas>) and will get an opportunity to work alongside researchers and graduate students from various backgrounds as part of a wider team. This position can be extended contingent on performance and funding availability.

Position Requirements

- Background in computational/theoretical plasma physics modeling.
- Motivation to work on the project topics is a key requirement.
- Experience using computational codes **PLASIMO**, **BOLSIG+**, **LOKI**, or similar is a big plus.
- Adhere to the University's information security and confidentiality policies and procedures, and report breaches or other security risks accordingly.
- Ability to relocate to Abu Dhabi on short notice and operate in multicultural environment.

Candidate Profile

Essential Criteria

- PhD from a reputable university in Physics (Plasma) or related discipline.
- Experience writing scientific or review papers.
- Willingness to contribute to a collaborative and supportive team culture.
- Excellent English language communication skills (verbal and written).
- Ability to work both independently and as part of a team.
- Proven ability to work on multiple tasks with competing demands and tight deadlines.
- Ability to train and mentor students and support fellow researchers.
- Highly developed reasoning and problem-solving skills.

Desired Criteria

- PhD gained from a top 200 QS or THE ranked University.
- High impact first-author publications in top 10% journals in the relevant field.

About Khalifa University

Khalifa University is ranked 181st in the QS World University Rankings 2023, and the top University in the UAE, with a range of research and academic programs designed to address the entire range of strategic, scientific, and industrial challenges facing our rapidly evolving world.

Its world-class faculty and state-of-the-art research facilities provide an unparalleled learning experience to students from the UAE and around the world. Our research and academic activities cover a broad range of disciplines in engineering, science and medicine through our three colleges.

Khalifa University's research relates to key focus sectors of relevance to the UAE's strategic economic growth and the technology platforms that serve as foundations for these sectors. The University's research priorities are addressed in two categories — "verticals" and "horizontal" — which jointly cover specific industry and sector needs, technical platforms and expertise.

KU's focus sectors are Clean and Renewable Energy, Hydrocarbon Exploration and Production, Water and Environment, Healthcare, Aerospace, and Supply Chain and Logistics. Research in these sectors is enhanced by our research platforms of Robotics, AI and Data Science, Information and Communication Technologies, and Advanced Materials and Manufacturing as well as Fundamental Sciences.