



Interdisciplinary Research Center for Refining & Advanced Chemicals (IRC-RAC)

Postdoctoral Research Position: Computational Fluid Dynamics modelling of complex chemical processes in Chemical, Process and Reactor Engineering at IRC-RAC.

Assistant Professor Christos D. Argyropoulos at the Interdisciplinary Research Centre for Refining and Advanced Chemicals (IRC-RAC) at King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia is seeking a highly motivated **Postdoctoral Researcher** with expertise in **Computational Fluid Dynamics (CFD), Chemical, Process, and Reactor Engineering** to join our cutting-edge research team under his supervision. This role offers an exciting opportunity to work at the forefront of advanced modelling and simulation of chemical processes, contribution to innovations in process optimization, reactor design and sustainable engineering solutions. The initial duration of the contract will be 2 years extendable based on performance and project duration.

Key Responsibilities:

- Develop and implement of CFD models for multiphase, reactive, and/or turbulent flows in chemical reactors.
- Perform numerical simulations to optimize reactor performance, energy efficiency and sustainability.
- Collaborate with multidisciplinary teams, including experimentalists, to validate and refine models.
- Write and contribute to publications in high-impact journals, present findings at international conferences, and assist with research proposal writing when required.

Qualifications:

- PhD in **Chemical Engineering, Mechanical Engineering**, or a closely related field with a focus on **CFD and Reactor Engineering**.
- Strong background in **numerical methods, fluid mechanics, and transport phenomena**.
- Proficiency in CFD tools such as **ANSYS FLUENT, COMSOL Multiphysics**, or equivalent software.
- Proven experience in coding and scripting languages (e.g., Python, MATLAB, Fortran, C++) for model development, data analysis, and the implementation of ML and AI algorithms.

Preferred Experience:

- Knowledge of reaction kinetics, process intensification, or advanced reactor designs (e.g., microreactors, fluidized beds)
- Experience with ML learning or optimization techniques applied to chemical processes.
- Familiarity with High-Performance Computing (HPC) environments.

What we offer:

- Competitive salary, housing allowance and benefits.
- Access to state-of-the-art computing and experimental facilities.
- A collaborative and dynamic research environment at IRC-RAC.
- Opportunities for professional development and networking in academia and industry.

Only candidates who satisfy the below criteria will be considered for the position:

- Recent graduate (2022 or later).
- PhD granting university ranked in top 200 universities as per QS Ranking.
- High GPA (preferably > 3.5/4) with no low grades (D or F) in BS, Master or PhD.
- Strong publication record in peer-reviewed journals (h index > 5).

King Fahd University of Petroleum & Minerals

RESEARCH INSTITUTE

Center for Refining & Advanced Chemicals



جامعة الملك فهد للبترول والمعادن

معهد البحوث

مركز التكرير والكيمائيات المتقدمة

How to Apply

Potential candidates can apply by sending an email to crac@kfupm.edu.sa and c.argyropoulos@kfupm.edu.sa including a recent CV, research interests and a full list of publications. Short-listed candidates will be contacted for interview and further processing.

Director, IRC for Refining and Advanced Chemicals

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