

We are Hiring!



POSTDOCTORAL FELLOW IN INSITU MULTIPHYSICS CHARACTERIZATION OF COMPOSITES

The Division of Physical Sciences and Engineering at King Abdullah University of Science and Technology (KAUST), Saudi Arabia, invites applications for Postdoctoral fellow in Mechanical Engineering at ENERCOMP

Field of study:

This postdoctoral position focuses on the in-situ multiphysics characterization of composite materials operating in harsh environments. The research aims to integrate advanced sensing, electrical, thermal, and mechanical diagnostics to capture aging, degradation, and damage evolution under realistic service conditions. Emphasis is placed on non-destructive, real-time monitoring approaches applicable to polymer matrix composites. The outcomes will support the development of robust condition-monitoring strategies for energy, mobility, and infrastructure applications.

The project aims to contribute to this global effort by solving essential challenges faced by the oil and gas industry, where the knowledge of correlation between microstructural and mechanical properties of polymer composites after aging is very limited.

The project will be organized around 3 main activities:

- Insitu characterization of microstructural changes in polymer composites during aging.
- Insitu characterization of mechanical and fracture performance of polymer composites.
- Correlation between microstructure and mechanical changes allowing defining the root cause of mechanical degradation.

Qualifications:

The successful candidate must hold a Ph.D. in Mechanical Engineering, Material Science or other relevant discipline. He/She must have a strong background in one or more of the following fields: experimental solid mechanics of thermoplastic composites, mechanical testing, fracture, damage mechanics and polymeric materials. The candidate should also have a good knowledge of simulation on Abaqus Standard; an experience in testing at extreme conditions, high pressure and temperatures is a plus. For any appointment at MCEM, an in-depth knowledge of theoretical mechanics is a firm requirement.

A high level of self-motivation, strong publication record and a good command of oral and written English, the ability to work in a team, as well as alone and good organizational skills are essential.





Other duties:

The Postdoctoral fellow will be actively engaged in student mentoring (directed research, Master thesis students). He/She will also be in charge of developing further the facilities of the laboratory. The candidate will also be in charge of delivering regular reports related to the associated grant.

Appointment:

One year renewable by mutual agreement. The candidate is expected to join the team as soon as a successful interview has been completed.

Benefits:

In addition to a competitive salary, the successful candidate will enjoy a generous benefits package, details can be provided by Human Resources.

Application requirement:

Only applications providing all requirements will be considered further.

Applicant requirements are as below. They should be numbered and attached to the application in the following order:

1. Detailed CV including list of publications, awards, with potential start date.
2. Short statement of previous work, title of the post-doc fellowship you apply for, and a description of your vision and of your research plan on that field (the document does not need to be extensive - no more than one A4 page – but should be very high quality. It should clearly highlight a vision of the candidate in the field, a prior understanding of the related literature and the definition of key steps towards innovative results in the field. Special care should be given by the candidate to this document, which is a key element of the decision process towards recruitment).
3. Names and contact information of three referees.
4. Slides from a recent presentation in a conference or seminar.
5. Pdf of a recent publication considered by the candidate as being representative of his research work.

Interested applicants should send their complete application package to Prof. Gilles Lubineau (gilles.lubineau@kaust.edu.sa) (With a systematic cc to ahmed.abdelhady.1@kaust.edu.sa and rizwan.bajwa@kaust.edu.sa)

PLEASE USE this as the subject of your email: **Post Doc ENER-joints modeling.**

Note: Applicant will be evaluated on a rolling basis and closed as soon as the position is filled.



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Technology Consortium for Composites
Performance in Energy Applications

ENERCOMP is a technology consortium on **Composite Asset Performance in Energy Applications**. It aims at increasing confidence and enabling further penetration of composite materials in the Energy sector by availing new technologies for integrity management. Its mission is to develop innovative integrity management solutions through collaborations with industry and academia by translating fundamental research into deployable technologies.



OUR VISION

To increase confidence and enable further penetration of composites materials in the Energy sector by availing new technologies for enhancing composite performance and integrity management.



OUR MISSION

To develop innovative integrity management solutions through collaborations with industry and academia by translating fundamental research into deployable technologies.



ENERCOMP is located in **KAUST** at the **Mechanics of Composites for Energy and Mobility Laboratory (MCEM)**. Building 4, Level 2.

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MECHANICS OF COMPOSITES FOR ENERGY AND MOBILITY LAB (MCEM)

The **Mechanics of Composites for Energy and Mobility Laboratory** (Composites Lab) is located at King Abdullah University of Science and Technology and is part of the Physical Science and Engineering Division. The Composites Lab started at KAUST in 2009 and is an integrated environment for composite science combining modeling and experimental expertise in a single working environment.

OUR MISSION: Support Energy transition by providing innovative composite solutions or optimizing the usage of existing solutions in demanding Energy and Mobility applications

Our laboratory expertise incorporates three main areas:

- Design of materials in representative environments of energy applications.
- Microstructure manipulation for tailoring macroscopic response.
- Structural health monitoring (SHM) and smart structures for composite infrastructures.



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KING ABDULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY (KAUST)

Established in 2009, King Abdullah University of Science and Technology (KAUST) is a graduate research university devoted to finding solutions for some of the most pressing scientific and technological challenges in the world as well as Saudi Arabia in the areas of food and health, water, energy, environment and the digital domain. **KAUST** is a curiosity-driven, interdisciplinary problem-solving environment, with state-of-the-art labs, distinguished faculty and talented students.

KAUST brings together the best minds from around the world to advance research. More than 120 different nationalities live, work and study on campus. KAUST is also a catalyst for innovation, economic development and social prosperity, with research resulting in novel patents and products, enterprising startups, regional and global initiatives, and collaboration with other academic institutions, industries and Saudi agencies.

