



Post Doctoral Openings - COHMAS Laboratory

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 the Composite and Heterogeneous Material Analysis and Simulation Laboratory (COHMAS, <http://cohmas.kaust.edu.sa>).

Field of study

Post doctoral openings are available in the following fields:

- (1) **Computational and Theoretical Mechanics:** Peridynamics and its applications to localization, Multiphysics for remote sensing and detection,
- (2) **Material Science and Composite Engineering:** Nano-composite based sensors for various applications, conductive materials and flexible/transparent electronics,
- (3) **Measurement and Diagnosis:** Electrical Impedance Spectroscopy/Tomography, Digital Volume Based Correlation for applications in X-Ray tomography.

Qualifications

The successful candidate must hold a Ph.D. in Mechanical Engineering, Applied Mathematics, Material Science or other relevant discipline. He/She must have a strong background in one or more of the following fields: experimental solid mechanics, fracture and damage mechanics, polymeric materials, bio-inspired materials, homogenization and microstructure generation, full-field measurements, material science. For any position, 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, Masters 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

1 year, renewable up to three years 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, the successful candidate will enjoy a generous benefit package including medical insurance, on-campus free housing, K-12 schools, paid airfare (at start and end of contract) and outstanding recreational facilities.

Application Requirements

Only applications providing all application requirements will be considered further. Applicant requirements are as below. They should be numbered and attached to the application in that 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 Dr. Gilles Lubineau (gilles.lubineau@kaust.edu.sa) (with a systematic cc to xianhou.nie@kaust.edu.sa)

PLEASE USE this as the subject of your email: Post Doc Application – COHMAS 2016

About KAUST and the COHMAS laboratory

The Composite and Heterogeneous Material Analysis and Simulation Laboratory (COHMAS) is located at King Abdullah University of Science and Technology and forms part of the Physical Science and Engineering Division. It was created in 2009 as an integrated environment for composite science, with the strong desire to combine modeling and experimental expertise in a single working environment.

Our general research activities include:

- Integrity of composite materials and structures: isotropic and anisotropic damage theories, fracture mechanics, homogenization techniques bridging micro-mechanical models to meso/macro-scale models, multi-scale modeling, damage mechanisms in nano-reinforced multi-scale composites.
- Durability of composite materials and structures: modeling of aging for polymer-based CFRPs under various environments (moisture, temperature, radiation, oxidation, mechanical fatigue), aging of steel pipes in sour environments, development of multiphysics-related models (experimental, modeling and computational work).
- Inverse problems for the identification of constitutive parameters: digital image correlation- based identification techniques, identification techniques for interfaces in joints and laminates, identification techniques based on 2D (optical pictures) and 3D (tomography) image correlation.
- Multi scale coupling techniques: coupling between molecular models, non-local continuum and local continuum models, upscaling strategies for handling localized effects in large-scale simulations.

COHMAS develops and validates techniques to achieve the better design of composite materials based structures. Most of this research is done in tight cooperation with major industrial partners ensuring a high level applied research based on advanced theoretical concepts.