

Simulation of microstructure and electrical properties of conductive nano-composites

The Division of Physical Sciences and Engineering at King Abdullah University of Science and Technology (KAUST) invites applications for a Postdoctoral fellow in Mechanical Engineering at the Composite and Heterogeneous Material Analysis and Simulation Laboratory (COHMAS, <http://cohmas.kaust.edu.sa>).

Job description

The successful candidate will be engaged in modeling and numerical simulation of microstructure and electrical properties of nano-composites. Candidates with experience in the following research areas are encouraged to apply:

- Computer geometric modeling,
- Multiscale computational modeling of materials,
- Large scale computing and computer programming,
- Nanotube/nanofiber/nanowire reinforced polymers,
- A strong experience in specific approaches and their numerical implementations such as finite element method, finite difference method, mesh less method, and so on.

Qualifications

The successful candidate must hold a Ph.D. in Mechanical Engineering, Applied Mathematics or other relevant discipline. He (She) must have a strong background in one or more of the aforementioned areas of research. Computer programming experience, such as C++, Fortran, etc., is required.

A high level of self-motivation, strong publication record, professional competence and a good command of oral and written English, PC skills, 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 required to deliver regular reports related to the associated grant.

Appointment

One year, renewable up to two years by mutual agreement. The candidate is expected to join the team as soon as a successful interview has been completed. The deadline for the submission of applications is the **31st of Jan. 2015**, but the position can be closed earlier if a suitable candidate is found.

Benefits

In addition to a competitive salary (no tax is paid in the Kingdom of Saudi Arabia), the successful candidate will enjoy a generous benefit package including medical/dental 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 highly 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) and Dr. Fei Han (fei.han@kaust.edu.sa)

(with a systematic cc to: xianhou.nie@kaust.edu.sa)

PLEASE USE as subject for your email: Post Doc Application – Nanocomposites

About the COHMAS laboratory in KAUST

The Composite and Heterogeneous Material Analysis and Simulation Laboratory (COHMAS) is located at the King Abdullah University of Science and Technology and forms part of the Physical Science and Engineering Division.

COHMAS develops and validates techniques to achieve the better design of composite materials based structures. Our general research activities cover:

- Multiscale damage modeling in composites: micromechanics, mesoscale damage mechanics for structural application, molecular mechanics, and homogenization
- Computational strategies for multimodel problems: gluing techniques between models at different scales
- Inverse problems for the identification of material parameters based on full-fields measurements and computed tomography
- Mechanics of multiscale reinforced composites: nanoreinforced materials, carbon nanotubes, carbon nanofibers, silver nanowires
- Aging and degradation of composite structures submitted to severe environmental conditions

Every project we undertake seeks to develop an integrated approach to material analysis including advanced experimental characterization, advanced modeling and simulation.