

**Announcement of a Postdoctoral Research Associate Position
In Structural Health Monitoring
Texas A&M University at Qatar**

A research project funded by Qatar National Research fund is anticipated to begin shortly. The project was proposed by the Structural Health Monitoring Laboratory (SHML) in the Mechanical Engineering Program at Texas A&M University at Qatar (TAMUQ). The overall objective of the proposed research is to develop robust mathematical techniques for blade crack detection that can be incorporated into a condition-based maintenance and monitoring program in gas turbines. The specific aims of this project are as follows: (1) Develop physics-based models for crack initiation and propagation due to high cycle fatigue in gas turbine blades; (2) Model the effect of cracks on the response of blades, such as blade tip timing, blade lengthening, natural frequency shift, mistuning etc. (3) Design and build test rigs to validate the models developed for both undamaged and damaged bladed disks (blisks). (4) Develop robust identification techniques, capable of extracting relevant features associated with blade cracks. (5) Validate the developed models based on experimental data.

SHML-TAMUQ anticipates the opening of one postdoctoral position in connection with this project. The starting date is somewhat flexible, beginning as soon as possible and remaining open until the position is filled. This is a full-time position; the initial appointment will be for one year but can be extended up to three years. TAMUQ is a branch campus of Texas A&M University in College Station, Texas.

SHML-TAMUQ is looking for highly motivated candidates with a strong background in one or more of the following areas: (a) Mathematical analysis and applied mathematics techniques; (b) Continuum mechanics; (c) Numerical methods such as the finite element method; (d) Experience in experimental work; (e) Computer programming especially Fortran, Matlab, Maple and Mathematica.

Candidates should have a PhD in Applied Mechanics or Mechanical or Civil Engineering or a closely related field. The successful candidate will join a very productive research team and is expected to work independently, to plan and to organize multi-disciplinary tasks, to have excellent communication skills in English, both written and spoken, to write journal papers and research proposals and to supervise junior researchers.

The candidate that will fill this position will work closely with the Principal Investigators of the project: Professor Sami EL-BORGI at TAMU Qatar and Professor Michael FRISWELL at Swansea University, UK. Interested candidates are encouraged to send a complete application package, including curriculum vita, a cover letter describing research interests and goals, grade transcripts, journal publication list, pdf copies of journal papers, scanned copies of diplomas, and the names and email addresses of three references to (Each email should not be more than 10 MegaBytes; if it is larger, please send your application in more than one email):

Professor Sami EL-BORGI

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Texas A&M University at Qatar offers a very competitive salary and excellent benefits. The benefit package includes furnished housing and utilities at no cost, health insurance, transportation allowance and dependent education allowance.