Three post-doctoral fellow positions are available over 5 years at Cardiff University in the framework of an ERC Starting Independent Research Grant with Prof. Stéphane P.A. Bordas and Dr. Pierre Kerfriden, in collaboration with Prof. Karol Miller (University of Western Australia).

The main objective of the projects is to enable faithful simulations of surgical operations in (quasi-) real-time. This objective will be achieved by developing a modern solver based on advanced numerical methods: multiscale methods in space and time reduced order modelling and advanced discretisation techniques. Candidates with experience in either of the following topics will be considered:
- model order reduction (e.g. proper orthogonal decomposition - POD)
- advanced discretisation techniques (extended finite element methods/meshless methods)
- nonlinear solid mechanics simulations (large-deformation and fracture)
- multiscale methods (especially in relation to fracture)
- high performance computing (domain decomposition, preconditioning, multigrid algorithms, solvers, etc.)
- error estimation and adaptivity (if possible in the context of multiscale or non-linear problems more generally)
- non-rigid image registration.

The research will be performed in the group of computational mechanics led by Prof. Bordas and Dr. Kerfriden (2 post-doctoral fellows and 10 Ph.D. students) at Cardiff University. Frequent visits to our international collaborators will be organised. The minimum duration of the positions is two years. The applicant is required to have completed, or be close to completion, of a Ph.D. thesis. A significant track record must be demonstrated. We will particularly interested in candidate displaying good academic skills in their fields, an ability to work in research teams (close collaboration with other post-docs, supervision of Ph.D. and master students), and good communication skills.

The interested candidate should send a declaration of interest by email to Prof. Bordas, with a CV and a list of publications attached, and provide the name of three potential referees supporting the application.

contact:
stephane.bordas@alum.northwestern.edu
pierre.kerfriden@gmail.com (CC for all applications)

Link:
IMAM wbpage: http://www.engin.cf.ac.uk/research/resInstitute.asp?InstNo=13
Job description on Imechanica: http://imechanica.org/node/10386