

Wednesday, January 21, 2015.

We are looking for a highly motivated and enthusiastic graduate student looking to work in the area of nanoscience and contact mechanics at the University of Calgary in the Department of Mechanical and Manufacturing Engineering. The project is a combined experimental and modeling project, in which the mechanical properties of fibre-reinforced composite materials will be mapped using dynamic atomic force microscopy (AFM). These experimental measurements will be used to validate a continuum mechanics model of fibre-matrix interfacial properties. Candidates will be expected to develop highly sophisticated AFM experiments and develop routines for data analysis, while working on developing an analytical model to describe the mechanical properties of the system investigated. Preference will be given to applicants that are Canadian citizens or landed immigrants and would be eligible for a Natural Sciences and Engineering Research Council (NSERC) graduate student awards. Applicants should be available for full-time registration in the MSc or PhD program starting either in January, May, or September 2015. The Egberts Research Group at the University of Calgary is a new research group, specializing in mechanical testing and tribology, particularly at the nanometer and atomic length scales. The Sudak group has an established track record for developing novel mechanical models, bridging continuum models and atomistic theory. In particular, using non-local continuum mechanics the group established a new continuum model to understand buckling of carbon nanotubes (CNTs). This model has been used extensively by other research groups in studying vibrations and fluid flow in CNTs. Currently, the group is extending the model to study microtubules which are found in eukaryotic cells. Please contact Dr. Philip Egberts at [philip.egberts@ucalgary.ca](mailto:philip.egberts@ucalgary.ca) or Dr. Les Sudak at [lsudak@ucalgary.ca](mailto:lsudak@ucalgary.ca) if you are interested in this position. Further information can be found on the Egberts Research Group website.

**Philip Egberts, MAsc., PhD, P.Eng.**

Assistant Professor

Tel: 403-220-7678

Email: [philip.egberts@ucalgary.ca](mailto:philip.egberts@ucalgary.ca)

Website: <http://wcm.ucalgary.ca/egberts/>

**Les Sudak, PhD, P.Eng.**

Professor, Director of Undergraduate Studies

Tel: 403-220-5779

Email: [lsudak@ucalgary.ca](mailto:lsudak@ucalgary.ca)