



PhD position

Ph.D. project in Mechanical Engineering, University of Iceland.

Dr. Fjola Jonsdottir, Professor in the Faculty of Industrial Eng., Mechanical Eng. and Computer Science, School of Engineering and Natural Sciences, is seeking a student for the following Ph.D. project.

Numerical Modelling of Controlled Drug Release from Medical Devices

The project is funded by the Icelandic Centre for Research Technology Development Fund as part of a European M-era.Net consortium, for a period of 3 years, starting in 2014. The project is a collaboration between the Faculty of Industrial Engineering, Mechanical Engineering and Computer Science and the Faculty of Pharmaceutical Sciences, at the University of Iceland, and partners in SurfLenses M-era.Net consortium which include Instituto Superior Technico and University of Coimbra in Portugal, and industrial partners PhysiOL in Belgium, and Altakitin in Portugal.

The study of medical devices, for which function is enhanced by embedded drug delivery systems, is an active field of research. The focus of this work is on ophthalmic drug delivery systems, more specifically intraocular and soft contact lenses. The consortium will be developing drug containing lenses where the release will be controlled for long times. Applications of such a system are, for example, treatment of ocular diseases and post-surgical infections.



PhD position -continued

The aim of the PhD project is to develop a numerical model that can be used to aid the development and design of advanced drug delivery systems. The model will be used to describe controlled release from drug loaded soft contact lenses and intraocular lenses. The proposed model will be based on coupled nonlinear partial differential equations, and hence, numerical methods are needed to obtain a solution. The model will take into account issues, such as, inhomogeneous drug dispersion, material and coating properties, and the complex geometry of the drug delivery matrix. Results will be validated by iterative comparison with experimental prototypes of drug delivery systems and experimental measurements.

Applicants should have an M.Sc. in mechanical engineering, bioengineering, materials engineering, chemical engineering or similar research experience. Experience in using relevant software for numerical modeling is preferred. The application, including a curriculum vitae, transcripts and two reference letters, should be sent to:

starfsumsoknir@hi.is reference nr. HI14060139 or to Human Resource Division, University of Iceland, Main Building, Sæmundargötu 2, 101 Reykjavík. The deadline for application is August 22nd 2014.

All applications will be answered and applicants will be informed about the appointment when a decision has been made.

For more information please contact Fjola Jonsdottir, fj@hi.is, +354-525-4915.

Appointments to the University of Iceland do take into account the Equal Rights Project of the University of Iceland