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PhD Studentships in Molecular Dynamics and/or Monte-Carlo Simulations of an Ion-channel, University of Warwick, UK

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Warwick School of [Engineering](#) and Centre for Scientific Computations

PhD studentship

Stipend: £13,290 plus home tuition fees (£3400)

Commencing 1 October 2009 for 3,5 years

A PhD studentship is available for developing [molecular dynamics](#) and/or Monte-Carlo simulations of an ion-channel, explicitly including a relatively small patch of surrounding membrane and exterior water. The work will lead to a PhD in Engineering supervised by Dr Igor Khovanov, but will involve close collaboration with the departments of Physics (Prof M. P. Allen) and Chemistry (Prof P. M. Rodger) through the Centre for [Scientific Computing](#). The successful applicant will have the opportunity to get involved with the state-of-the-art [computational](#) techniques, in particular molecular dynamics, as well as with high-performance parallel computing. The work involves close collaboration with [Lancaster University](#) and Rush Medical Center (Chicago), as well as the analysis of experimental data from Oxford, Rush, Groningen, and Chapel Hill. There will be opportunities for travel to conferences and between the participating centres.

The studentship is a part of joint Lancaster-Warwick project "Nonlinear dynamics of selectivity, conductivity, and gating in biological ion channels" aimed at cracking the enduring problem of how ions permeate through ion channels in biological membranes. The importance of progress in this area can hardly be over-estimated, given [its](#) centrality to physiological processes at the cellular level and that that most drugs are targeted directly or indirectly at ion channels. The investigations bring new ideas from non-equilibrium physics to focus on long-standing problems that are of central importance in biology.

This studentship has been funded by EPSRC. The studentship is available to UK, EU and [International](#) candidates. However, funds are only available to cover UK/EU Tuition Fees. International candidates (outside EU) would be required to pay the difference between UK/EU Tuition Fees and International Tuition Fees.

You must have a good honours degree in Engineering, Chemistry, [Mathematics](#), Physics, [Computer Science](#) or similar. You should have a strong interest in computer simulations and program [development](#).

Informal enquires may be made to Dr Igor Khovanov, e-mail: i.khovanov@warwick.ac.uk

For more information please visit our website: <http://scholarshipsbank.com/phd-studentships-in-molecular-dynamics-andor-monte-carlo-simulations-of-an-ion-channel-university-of-warwick-uk/>

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