

PhD studentship in DNA biophysics

Imperial College London

Department of Chemistry, Faculty of Natural Sciences

Theory group of Professor Alexei Kornyshev

Three year stipend and tuition fee is funded by EPSRC (Engineering and Physical Sciences Research Council). It is related with a joint project with a team of mathematicians at University College London “**Theory of Chiral effects in DNA supercoiling**”.*

Requirements: Applicants should have an MSci or Masters degree, excellent training in applied mathematics /theoretical physics, or theoretical and computational chemistry.

Limitations: **only for British/EU citizens** or permanent residents of Britain; applicants must have a degree rated not lower than British 2A or its equivalent.

Preferred starting date: 1st October 2009.

The group of Alexei Kornyshev <http://www3.imperial.ac.uk/people/a.kornyshev> uses methods of condensed matter theory for solving problems in hot areas of chemical and biological physics, electrochemistry, and functionalized interfaces for energy conversion/storage, optofluidic, nanophotonic, and molecular electronic devices. The Department of Chemistry of Imperial College was a home of 5 Nobel Laureates; in its interdisciplinary setting, groups of about 50 academics focus their research groups on chemical biology, chemical physics and biophysics, complex fluids, liquid crystals, nanoscience and nanomaterials, catalysis, supramolecular chemistry, sustainable energy and green chemistry. In terms of impact, recent Times High Education analysis rated it as N3 Chemistry Institution in Europe; THE University Ranking positioned Imperial College N6 in the World. The successful applicants will be able to acquire unique experience in DNA biophysics, doing research and attending lecture courses of choice in this vibrant multidisciplinary environment. Imperial also offers to postgraduate students various career development forces. Interaction with partners at UCL will be an important part of the project and it will expand the experience of the candidate. The project will also imply interactions with partnering experimental groups in USA, Holland, and Switzerland.

DNA supercoiling is a widely spread phenomenon in nature determining various kinds of DNA activity. In the theory of this phenomenon physics, geometry and topology meet. For further details and informal enquiries contact Prof Kornyshev at a.kornyshev@imperial.ac.uk; for a review of this research area see:

A.A. Kornyshev et al, **Structure and interactions of biological helices**, *Reviews of Modern Physics*, 2007, **79**, 943 – 996.

Applications should be submitted electronically to Mrs. A. Hartley-Forbes

a.hartley-forbes@imperial.ac.uk

They must include pdf-files of the current CV, list of publications (if any), half-a-page statement of interest, and the names, full addresses, and e-mails of their (i) thesis-project supervisor and (ii) an independent reference.

Since the work will involve employment of sophisticated theoretical methods, the shortlisted candidates will be asked to take a written math/physics mini-test to be communicated via e-mail by Professor Kornyshev.

Committed to equality and valuing diversity. We are also an Athena Silver SWAN Award winner and a Stonewall Diversity Champion.