

Joint PhD Project and Scholarship

Macquarie University (Sydney, Australia) and the University of Strathclyde (Glasgow, UK) are inviting applications from EU citizens for a Joint PhD with scholarship in the area of Lasers and Nonlinear dynamics.

A Joint PhD enables students to simultaneously enrol in a doctoral degree at two universities and submit a single thesis for joint recognition. Students will be guided by supervisors from each university and spend 18 months on campus at each institution, benefitting from the resources and expertise of each partner. One thesis is submitted for joint examination, and upon meeting the requirements of both institutions, a single diploma is issued bearing the crests of both universities. Scholarships are available to eligible candidates.

Project title: Dynamics in spatially extended semiconductor lasers

Project description:

Semiconductor lasers are high performance devices which are an enabling technology for the modern information society. Their complex dynamics have been a subject of huge scientific interest for decades. Particular interest is emerging for systems with many degrees of freedom, either because the system is spatially extended or contains many coupled elements, in addition to complex temporal dynamics. The project is aimed at promoting the understanding of the complex dynamics of spatially extended systems by combining the expertise of the Strathclyde and Macquarie groups.

At Strathclyde we will use spatial cavity solitons as a building block for more complex structures. The project will study whether and how their intensity dynamics can also synchronize and we will analyse the complexity of this dynamics with methods developed by the Macquarie group. At Macquarie University complementary experimental studies on nonlinear semiconductor-laser-based systems will search for coupling between spatial and temporal dynamics. Complexity analyses will target discovering systematic variations in observability of temporal as compared to spatial measurands.

Required qualifications and competences:

Suitable applicants for this PhD position will have achieved a Master Degree by research or 2-year Master by coursework with a major research component in experimental physics (or related discipline with equivalence) at First Class/High Distinction level or equivalent. Applicants with other research-focused qualifications or a combination of qualifications and relevant research experience (eg, a record of publications) may also be considered.

Further information and contacts:

Please download full information from <http://photonics.phys.strath.ac.uk/thorsten-ackemann/>

For further information, please contact Professor Deborah Kane (deb.kane@mq.edu.au) and Professor Thorsten Ackemann (thorsten.ackemann@strath.ac.uk).

Applications for this Joint PhD project close on **23 June 2014**. The project is expected to commence on 1 Oct. 2014.