

## Joint PhD Aarhus-York

There are a number of established contacts and potential contacts between the two departments, and at this meeting we will discuss the potential synergies.

**Christian Aa. Diget from University of York** will present a brief overview of the York groups and the potential synergies identified already, from their perspective, as well as answer questions about the Joint PhD in general and on the specific structures and potential at York.

Below is a list of potential synergies identified from the York perspective.

**1) Nuclear Physics:** one pair of joint PhD studentships currently under way, start dates 2014. Supervisors: Hans O.U. Fynbo (AU) and Christian Aa. Diget (York).

**2) Biophysics:** contact has already been established between Prof. Mark Leake (York, Biology/Physics) and Prof. Rikke Meyer (AU, iNANO). The collaborative project is at an early stage, but the potential is clear.

**3) Fusion and extreme-scenario materials science:** Dr. Andrew Higginbotham and Prof. Howard Wilson (York) are currently exploring the synergies between the York Plasma Institute and both the materials science group at Physics, AU, and Magnetic Confinement Fusion at Engineering, AU. Both Andy and Howard work within the context of the Fusion Centre for Doctoral Training programme, which is a national (UK) PhD programme led from York. It has a substantial teaching programme included on fusion and intense-laser science. Potential Aarhus-York students could also tap into this resource and benefit from the expertise within the programme.

**4) Synchrotron-radiation:** Dr Stuart Cavill (York) has an extensive programme of research at the Diamond Light Source Synchrotron Facility (DLS, UK). He currently holds a joint position between York and Diamond. He specialises in polarized soft X-ray spectroscopies of magnetic and highly correlated systems and has already expressed an interest in developing a collaboration with key people at ASTRID2. No specific AU partners have yet been identified, but collaboration would go both ways.

**5) Surface Science:** The surface science group at York would be very interested in developing the links particularly with the STM group at AU. Potential collaborators at York include Dr Andrew Pratt and Prof Steve Tear and York has complementary facilities to that of the AU iNano centre, particularly in the area of electron spectroscopy, including a unique instrument that combines UPS and XPS with the extremely surface sensitive method of metastable-helium de-excitation spectroscopy (MDS). MDS is ideal for probing the outermost electronic structure of materials and so is very complementary to STM.

**6) Quantum technologies:** York has recently set up an interdisciplinary Centre for Quantum Technologies (YCQT): <http://www.york.ac.uk/physics/ycqt/>, with Prof. Tim Spiller (Physics, York) as director of YCQT. York also leads the UK Quantum Communications Hub: <http://quantumcommshub.net/>, a multi-university and industry collaboration, as part of the new UK National Quantum Technologies Programme. In the longer term there is potential for interaction with both the YCQT and the Hub in quantum communications.