



Phd Positions

University of Birmingham



We are looking for highly motivated Phd students in our group

The unprecedented control over cold atoms has resulted in extremely precise sensors such as atomic clocks and atom interferometers. Our lab has two main goals, one fundamental science and another technological development. From the scientific point of view, it aims to work on enabling concepts to asking very fundamental questions at the cutting edge of science. Technologically it utilises state-of-the-art methods with the potential to reduce the form factor of atom-based quantum sensors by at least an order of magnitude which would enable a step change towards commercial applications. These sensors are also tools for space missions, where compact, low power, ultra-high precision investigation of the local space-time manifold is required, or indeed where a distributed network of such sensors would be appropriate. In brief, applications include navigation, fundamental physics tests, quantum ICT devices, satellite/ground geodesy, oil or mineral prospecting and communication network timing.

Our lab is associated with the UK National Quantum Technology Hub in Sensors and Metrology – a ground breaking £80m collaborative project in partnership with the Universities of Glasgow, Nottingham, Southampton, Strathclyde and Sussex and in collaboration with over 70 industry partners and NPL. The QT Hub led by Prof. Kai Bongs (University of Birmingham) and is changing the way you see the brain, medical imaging, underground hazards, communicate, and even outer space beyond the capabilities of current sensor technology, boosting demand for this world-leading technology.

To create and contribute to the creation of knowledge by undertaking a specified range of activities in various projects based on ultracold Sr atoms. *The Phd topics range from Quantum Clocks in Space, Quantum Simulations using ultra cold Sr atoms to Quantum Radars in collaboration with Prof. Chris Baker at Electrical Engineering (EE).* These are fully funded positions and we are looking for highly motivated people ready to push the boundaries of the field.

Contact: You can send your queries/applications/cv to Dr. Yeshpal Singh (y.singh.1@bham.ac.uk)
Department of Physics and Astronomy, University of Birmingham, B15 2TT