

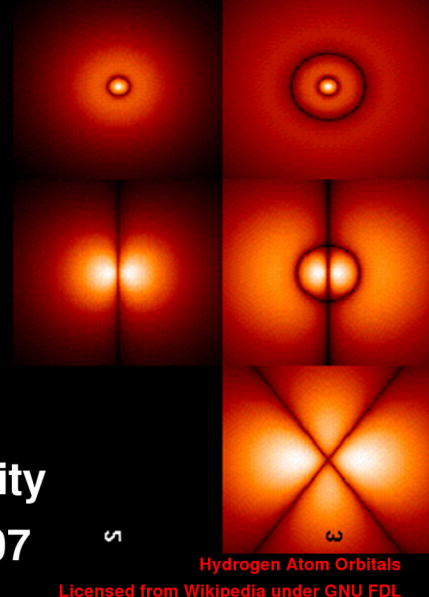
CARDIFF  
UNIVERSITY

PRIFYSGOL  
CAERDYDD

Date Saturday, 8th March 2008

Time 14:00 - 17:00

Venue School of Computer Science, Cardiff University  
5 The Parade, Cardiff, CF24 3AA, Room C/2.07



Hydrogen Atom Orbitals  
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# **Quantum Engineering**

## **Practical Applications of Quantum Physics and How these Might Transform Society**

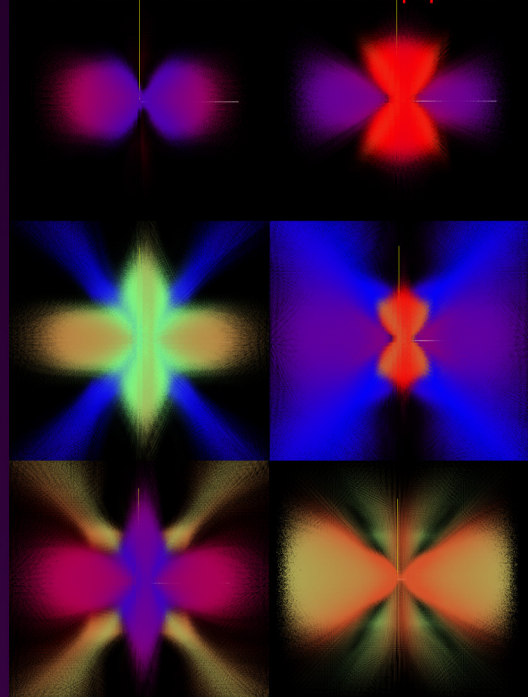


A lecture on the fundamentals of quantum physics with hands-on demonstrations and a discussion of the potential impact of quantum technology on everyone's life

The quest for miniaturisation has led to nano-scale devices consisting of only a few atomic layers exhibiting quantum effects. Quantum engineering seeks to exploit these effects to develop new applications for such devices. This remains very much a scientific and technological frontier; we perhaps can no more predict how quantum devices will change the world than the inventors of the Internet were able to envisage how it is transforming society now. Yet, quantum effects are already essential for semi-conductor technology used in everyday devices such as mobile phones and there are promising new applications in many areas of technology; from secure communication, to controlling chemical reactions, to biomedical applications, for example.

In this event, aimed at a general audience, we will embark onto a journey into "quantum land" to provide an insight into essential quantum effects enabling such applications. We will also present potential applications and discuss their impact on society with the audience.

Wavefunctions of Atomic Orbitals and their Superpositions



**Further details on the Internet at <http://www.langbein.org/quantum>**

**Free registration by e-mail [publicbookings@cardiff.ac.uk](mailto:publicbookings@cardiff.ac.uk) or phone (029) 2087 6936**

**There are a limited number of places available**

Organisers Frank Langbein, Cardiff University

Sonia Schirmer, Cambridge University

Contact E-Mail: [F.C.Langbein@cs.cf.ac.uk](mailto:F.C.Langbein@cs.cf.ac.uk), Phone: (029) 2087 0110

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**the BA**  
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advancement of science