

## **PhD STUDENTSHIP**

### **Antenna Field Scattering and Diffraction Control by Nonlinear and Holographic Patterned Metamaterial Surfaces**

#### **Laboratory of Electromagnetic Research**

This PhD investigation is intended to provide an understanding of and ways of exploiting the physical properties of wave propagation in electromagnetic metamaterials. The goal is to obtain useful radiation and scattering characteristics for the practical realisation of novel and advanced antenna systems in future wireless communication or radar systems. The research will embrace a number of inter-linked themes;

- Reconfigurable absorption and frequency selectivity.
- Formation of radiated fields and beam control on holographic lattices.
- Scanning of radiated fields and beams using active non-linear lattices.
- Polarisation diversity lattices.
- Metamaterial design and parameter optimisation using probabilistic and numerical methods.

The research builds on existing spin out technology and numerical methods developed during two previously highly successful studies funded as part of a DSTL research and development effort.

The studentship depending on qualifications and experience includes the tuition fees and tax-free maintenance stipend of £12,600 per year for three years.

Application forms can be obtained from

<http://www.cranfield.ac.uk/prospectus/apply/applicationforms.cfm>

Please send the completed application form with an extended CV to: Dr. Ivor L. Morrow, Communications and Wireless Networks Group, Department of Aerospace Power and Sensors, Cranfield University, DCMT, Shrivenham, Wilts., SN6 8LA.

For further information please contact Dr. I. L. Morrow direct at: I.L.Morrow@Cranfield.ac.uk