

## **Research Fellow in Wireless Communications (Level A or B), Req ID: 016LE**

**(3 years fixed term)**

The project will develop novel networking algorithms and protocols for wireless ad-hoc networks that exploit state of the art advances in physical layer communications. There have been huge advances in our recent understanding of physical layer communications, in areas such as multi-user MIMO, interference channels, cooperative communications, network coding, and multi-terminal information theory. Few of these advances have been incorporated into real-world wireless technology: At the network layer, the designs are usually based on models that trivialize the physical layer. On the other hand, much physical layer research ignores the problems of coordination in a random environment. This project will enrich networking theory and performance analysis using new physical layer models and techniques. Resource allocation algorithms will be designed which are distributed, based on locally available information, and with limited overhead requirements. Energy constraints will be incorporated into our models and algorithms, and the project will contribute to the design of “green” communications networks.

### **Essential Criteria:**

- A doctoral degree in Engineering, Computer Science, Applied Mathematics or an equivalent qualification.
- A quality research record as evidenced by research publications in good international conferences and journals.
- Good knowledge of the field of communication networks and communication theory, with expertise in wireless resource allocation, analysis and design.
- Strong mathematical and analytical skills.
- Experience with software packages such as Matlab.
- Commitment and ability to work with graduate and research students.
- Demonstrated time management skills and the ability to work to deadlines
- Good interpersonal, written and verbal communication skills and the ability to interact with University staff at all levels.
- Demonstrated ability to work effectively as part of a team.

### **In addition, for appointment at Level B:**

- A demonstrated track record in high quality research publications.
- Proven record of research independence at a senior level.

Candidates **must** address the essential criteria specifically listed in the pre screening questions, as well as provide a detailed curriculum vitae and publications list.