

CONNECT, the National Communications Research Centre in Ireland (<http://ctvr.ie/>), has **two open Ph.D. student positions starting on March 1, 2016** to conduct research within the NEMOs (Enabling Cellular Networks to Exploit Millimeter-wave Opportunities) project funded by Science Foundation Ireland.

**In the NEMOs project**, the aim is to explore the creation of networks utilizing device-to-infrastructure links to support dense, high-capacity networks, such as those required in sports arenas, theatres, and transportation hubs. Critical to these networks are high-capacity, yet uncertain links that change rapidly due to the more pronounced effects of factors such as shadowing and micro-mobility on millimetre-wave links (i.e. operating in the 30-300 GHz frequency range). Such networks demand the development of new wireless network architectures and new resource allocation techniques based on new measurement based channel propagation models and assessed against new capacity analyses.

**In these PhD projects**, the main objectives are to investigate NEMOs networks in terms of network planning and deployment, infrastructure & resource sharing mechanisms and incentives, theoretical performance bounds, and specific technology choices such as massive MIMO and dense small cell systems. In particular, the related analytical and simulative studies shall take account of the channel measurements and models that the NEMOs project will develop.

**CONNECT** is a flagship research centre for communications networking, services, applications and technologies. CONNECT is co-funded by the Irish government, through Science Foundation Ireland, and by industry. It is receiving initial funding of €50 million, which supports 165 researchers. CONNECT research areas are: Future networks, including wireless and optical technologies; Network-aware services and service-aware networks; Responsive Things (key components of the Internet of Things); Testbed-based experimentation and iterative development. CONNECT works with about **40 industry partners**.

**What we offer:**

- 3 years PhD programme.
- An excellent international working environment.
- Stipend in line to that of the Trinity College Dublin and Irish Universities standards.

**Successful candidates should have:**

- Strong mathematical skills.
- Strong programming skills.
- Basic knowledge of wireless systems simulation methodology and tools.
- Familiarity and willingness to do experimental work in a wireless testbed environment.
- Basic knowledge about wireless scenarios, requirements and network architecture.
- Basic knowledge of radio resource management and MAC protocols.
- Strong knowledge of cellular networks (especially LTE and LTE-A).
- Strong oral and written English communication skills.

**Interested candidates should submit the following via email to Dr. Nicola Marchetti ([marchetn@tcd.ie](mailto:marchetn@tcd.ie)):**

- Curriculum vitae.
- Cover letter stating motivations and qualifications.
- Names and contact details of at least two references.