**PhD Project Proposal**

School of Electronics, Electrical Engineering and Computer Science

& ECIT Global Research Institute

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| **Proposed Project Title: Cognitive Wireless Powered Communication Networks** |
| **Principal Supervisor: Dr. E. Garcia-Palacios Second Supervisor: Dr. T. Q. Duong** |
| **Project Description:** Next generation wireless networks will be of a very high density. We can envisage a very high number of mobile terminals and sensors. These nodes will operate using different wireless technologies, will need to co-exist and will have power constraints. With an overcrowded spectrum, spectrum management becomes a key issue. However the high number of transmitters also present an opportunity for energy harvesting. Cognitive Wireless Powered Communication Networks (C-WPCN) emerge as an attractive solution in this context. These type of networks maximise spectrum access by allowing secondary users access resources as long as their interference levels to primary users is within acceptable levels. The wireless powered feature allows nodes to harvest energy from potential transmitters.  |
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