



## PostDoc Job Opportunity



DUBLIN CITY UNIVERSITY	First Name	Last Name	email	Institute	Address
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School:	Electronic Engineering				
Research Centre / group affiliation:	RINCE Institute, RF Modelling and Simulation				
Research group / centre website:	<a href="http://www.rince.ie">www.rince.ie</a> and <a href="http://elm.eeng.dcu.ie/~brennanc/research/research.htm">http://elm.eeng.dcu.ie/~brennanc/research/research.htm</a>				

### Brief summary of research group / centre activity:

The DCU RF modelling and simulation group has a 20 year track record of developing efficient accurate numerical models for electromagnetic wave scattering and propagation. Applications involve propagation modelling for mobile radio and wireless systems as well as radar cross section modelling, remote sensing and imaging

### Description of postdoctoral project on offer:

Wind energy promises to be a significant part of the solution to the world's future energy needs. However the installation of large wind turbines can adversely affect the operation of wireless systems in their vicinity as the electromagnetic signals can scatter from the turbine blades and tower producing significant levels of interference. To date efforts to quantify this interference have suffered due to the scale of the problem. Turbines are very large structures and the models used to describe EM scattering from them have had to be correspondingly simple in order to remain computationally tractable. This project will apply recently developed models (some developed by ourselves) which can significantly reduce the computational burden associated with so-called full-wave models while retaining their high accuracy. These scattering models will be combined with state of the art propagation models (to compute the fields impinging on the turbine) to produce a working software solution which can predict interference levels for affected radar, broadcast systems etc. The project will also investigate methods for interference mitigation including tower-shaping.

### Please indicate the core skills or disciplines that are required for this position:

Mathematical skills particularly numerical methods, knowledge of electromagnetics and wireless systems, programming skills (Matlab, C++). Good communication and technical writing skills also.