

Loughborough University

People

Prof. David Infield

David Infield has been Director of CREST (Centre for Renewable Energy Systems Technology) at Loughborough University since its foundation in 1993, and is Professor of Renewable Energy Systems. He has over 20 years research experience in renewable energy technology and his current research is focussed on the electrical integration of wind and photovoltaic generators.

Dr Simon Watson

Simon Watson has been working as a senior lecturer at CREST since 2001 and is also the Programme Director for the MSc in Renewable Energy Systems Technology. He has 16 year's experience in the field of wind energy including wind resource assessment on and offshore and condition monitoring.

Prof Roger Goodall

Roger Goodall is Professor of Control Systems Engineering and leads the Control Systems Research Group. He has a wide experience of both industrial and academic research with a focus upon control for railway and aerospace applications. He has wide experience in advanced control, estimation and fault detection concepts.

Dr Roger Dixon

Dr Dixon joined Loughborough from ALSTOM in 2003. His recent industrial experience in control and condition monitoring of actuators and gas-turbine engines (and their sensors) involving techniques which may be applied to wind turbines.

Relevant Expertise

The Centre for Renewable Energy Systems Technology (CREST) was established in 1993 and since that time has become an internationally recognised Research Group within the field of renewable energy technology, with particular expertise in wind power technology, solar photovoltaic device characterisation, electrical systems, energy storage and the integration of renewable energy into electrical networks. The Group has worked with a number of Industrial and Commercial Partners in the wind energy sector including E.ON Renewables, Shell Renewables, Garrad Hassan and Renewable Energy Systems. CREST has recently been involved in the EU- funded CONMOW project to identify and assess instrumentation and techniques for effective condition monitoring of wind turbines, particularly for the offshore environment.

The Systems and Control Group provides a centre of excellence aimed toward the more practical aspects of control and systems engineering. The focus is generally on identifying the most appropriate tools from a range of theoretical techniques to provide practical solutions for particular applications. The Group collaborates with a number of companies including Alstom, BAE Systems, Bombardier Transportation, AEA Technology Rail. It is also heavily involved in Rail Research UK, a multi-university EPSRC-funded research centre. Many of the techniques developed by the Group are appropriate for condition monitoring of wind turbines.

Technical role within the Supergen

Loughborough University's role in the Supergen – Wind Energy Technologies consortium is in the following areas:

- To collect wind turbine data for reliability and availability analysis;
- To make an analysis of expected availability for offshore wind turbines and to develop an availability model;
- To develop practical condition monitoring system based an analysis of past data and implementation of time domain, frequency domain and statistical analysis techniques;
- To review potential new drive train configurations;
- To review and recommend active load reduction strategies for large wind turbines;
- To analyse appropriate data and apply computational fluid dynamics (CFD) models to wind resource prediction in forested and offshore areas in order to provide baseline data for wind turbine availability assessment.

Loughborough University is ranked 6th in the Times Top Universities Guide and 1st in the National Students Survey

