

Electrochemistry metrology at NPL.

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Abstract

NPL is the UK's national measurement institute, with over 700 scientists working on a wide range of topics from developing fundamental measurement standards for redefining the SI units to advanced materials characterisation for engineering applications. Within the Materials division, the electrochemistry group is a dynamic team with activities in Corrosion, Photovoltaics, Organic Electronics, Nano-electrochemistry, Catalysis and Fuel Cells, with a focus on addressing measurement challenges in these areas.

I will present an overview of the research activities in the electrochemistry group at NPL, and as a case study I will discuss my own research into Polymer Electrolyte Fuel Cell degradation mechanisms using novel *in situ* techniques.

About the speaker:

Dr Edward Brightman is a Higher Research Scientist in the Electrochemistry and Corrosion group at the National Physical Laboratory, UK. He has six years' experience in fuel cell metrology, specialising in the development of innovative *in situ* electrochemical techniques for measurement of fuel cell performance, degradation, and model validation. His work extends to other electrochemical energy storage technologies such as lithium ion batteries, redox flow batteries and PEM electrolyzers. He is visiting NIMS after winning 1st Prize for Outstanding Presentation at the World Materials Research Institutes Forum (WMRIF) 3rd Young Scientists' Workshop (Thailand, August 2012).