



Department of Automatic Control & Systems Engineering  
would like to announce the following seminar:

***Pulse Technology for Electromagnetic Non-Destructive  
Evaluation***

***Speaker: Professor G Y Tian***  
University of Huddersfield

**Wednesday 16<sup>th</sup> November 2005  
at 14:10**

**Location: St Georges Mappin Building LT1**  
Tea and Biscuits will be served afterwards.

**ABSTRACT**

Non-Destructive Evaluation (NDE) is generally used to assess the integrity of a system or component without compromising its performance. NDE is an interdisciplinary field of study which is concerned with the development of measurement and analysis techniques, e.g. NDT & E. NDE uses sensors to acquire information about these objects and perform modelling, analysis, and conversion of the information into materials and defect parameters for performance and in-service life prediction. Detailed defect sizing, location and characterisation have become the major objective of much NDE work in progress today. To address this challenge, the NDE community has turned to novel techniques and a combination of multiple mode inspections and computer-aided data analysis. Electromagnetic pulse has distinguished advantages in terms of temporal-spectrum information and penetration due to the skin effect. Pulsed EM methods have been introduced to non-destructive evaluation in Huddersfield. After review of different non-destructive evaluations, new pulsed eddy current and pulsed magnetic flux leakage NDE are introduced. Their sensor miniaturisation, sensor arrays, signal characterisation and signal fusion with other NDE modality are discussed in the presentation. The potential applications of current projects are also presented.