



Vrije Universiteit Brussel

Faculty of Engineering Science  
Dept. Mechanics of Materials and Constructions (MeMC)



has the pleasure to invite you for the presentation:

**"Advances in Remote Condition Monitoring of High Speed  
Railway Trackbed"**

Presented by:

**Michael C. Forde**  
*University of Edinburgh, Scotland*

On Thursday, the 26th of February 2015  
10.00h-11.00h

Seminary Room Dept. ARCH  
First floor building K

The abstract and short presentation of the author follows on the next page

## Advances in Remote Condition Monitoring of High Speed Railway Trackbed

M. Lim<sup>1</sup>, S. Ivanov<sup>1</sup>, R. De Bold<sup>1</sup>, A. Giannopoulos<sup>1</sup>, M.C. Forde<sup>1</sup> & D.P. Connolly<sup>2</sup>

<sup>1</sup>University of Edinburgh, Scotland

<sup>2</sup>Heriot-Watt University, Riccarton, Scotland

Worldwide, High Speed Rail effectiveness depends on a very high reliability and availability of the track with minimal downtime. This applies to both ballasted track and slab track.

The technologies available for condition monitoring of ballasted track using Ground Penetrating Radar (GPR) will be examined. New problems related to fouling arising from tamping will be highlighted and the challenges of using conventional GPR to assess fouling will be discussed. New methods of analysis to quantify ballast fouling will be presented based upon experiments on the full scale test site at the University of Edinburgh.

Correlations will be shown between new methods of GPR signal analysis on ballast – related to fouling.



**Prof. Michael Forde** is the director of the Institute for Research in Engineering of University of Edinburgh, currently ranked #4 in the U.K. He received his Bachelor from the University of Liverpool and his PhD from the University of Birmingham. He is the editor-in-chief of the journal Construction and Building Materials and organizer of the Structural Falults and Repair, and Railway Engineering series of conferences. He has supervised a large number of PhD theses and is member of several important institutes and associations like Rilem, the British Institute of NDT (FINDT) and the American Concrete Institute (ACI).