



**University of Pavia**

**Ph.D. School of Electrical and Electronics Engineering and Computer Science**

## **SEMINAR**

### **New Challenges in Design Optimisation of Electromagnetic Devices**

***Prof. J. K. Sykulski***

***Electronics and Computer Science, University of Southampton  
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**10 June 2016, h 11.00,  
seminar room (ex Dip. Elettronica), floor D  
Department of Electrical, Computer and Biomedical Engineering**

**Abstract:** This talk will review the state of the art and new challenges in design optimisation of electromagnetic devices. The talk will introduce the concepts of hierarchical design and no-free-lunch theorem. The notion of Pareto optimisation will be discussed and the balance between exploration and exploitation emphasised. The recent advances in kriging assisted surrogate modelling will be presented and the importance of finding the robust optimum will be stressed. The dangers of a combinatorial explosion in some types of surrogate models will be considered and possible ways of overcoming such difficulties explained.

**Bio:** Jan Sykulski (jks@soton.ac.uk) is Professor of Applied Electromagnetics at the University of Southampton, UK. His personal research is in development of fundamental methods of computational electromagnetics, power applications of high temperature superconductivity, simulation of coupled field systems and design and optimisation of electromechanical devices. He has published over 370 scientific papers and co-authored four books. He is founding Secretary of International Compumag Society, Visiting Professor at universities in Canada, France, Italy, Poland and China, Editor of IEEE Transactions on Magnetics, Editor-in-chief of COMPEL (Emerald) and member of International Steering Committees of several international conferences. He is Fellow of IEEE (USA), Fellow of the Institution of Engineering and Technology (IET), Fellow of the Institute of Physics (IoP), Fellow of the British Computer Society (BCS), Doctor Honoris Causa of Universite d'Artois, France, and has an honorary title of Professor awarded by the President of Poland. <http://www.ecs.soton.ac.uk/info/people/jks>

**Organizer**

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Seminar in English

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