3rd Energy Harvesting Research Theme Workshop – MEMS/NEMS Energy Harvesting
02 December 2011
University of Southampton, UK

The scope of this workshop covers the application of MEMS/NEMS technology to the topic of energy harvesting and in particular explores the scaling effects when reducing these devices in size. MEMS/NEMS technology is an attractive approach for the mass production of both kinetic and thermal energy harvesters which could be used to power external systems or potentially realise self-powered microelectronics. However, scaling effects will influence the fundamental energy available from such devices, the efficiency with which it can be harvested and the practical constraints of the micro/nano fabrication processes must also be considered.

The workshop will bring together expert opinion from both academia and industry so as to explore the boundaries of micro and nano scale energy harvesting and the opportunities that may arise at the nano scale (e.g. quantum effects). The key findings will form the basis of a publicly available roadmap that will illustrate technology developments and underpinning science required to realise practical MEMS/NEMS energy harvesters over the next decade.

Agenda	
9.30	Registration & coffee
10.00	Introduction - What are we trying to do and what is the process? *Professor Steve Beeby, University of Southampton*
10.05	Key Note - Fundamental energy calculations, physical transduction principles and the effect of scaling and review of existing state of the art *Professor Eric Yeatman, Imperial College London*
10.35	Power conditioning electronics & energy storage for MEMS/NEMS energy harvesters. *Dr Bernard Stark, University of Bristol*
10:55	Coffee Break
11.10	Metrology at the micro and nano scale *Professor Markys Cain, NPL*
11.30	Facilitated Workshop - Technological Advances to Realise the Vision *Small Groups*
12:30	Lunch, Tour of the Cleanroom and Networking
13:30	Key Note Talk - State of the art in micro and nano fabrication processes *Professor Rob Dorey, Cranfield University*
13:50	Thermoelectric Energy Harvesting *Professor Douglas Paul, Glasgow University*
14.10	Facilitated Workshop - Underpinning Science and Engineering to Realise the Vision *Small Groups*
15:40	Wrap up and Next Steps
15.45	Close

The workshop is by *invitation only* to ensure a high quality of interaction. To apply for an invitation, please email workshop@eh-network.org briefly saying what you would be able to bring to the discussion.