Microsystems for power generation

Final Project Workshop SBO 030288

12 September 2008

The evolution towards miniaturisation, portability and ubiquitous intelligence has created the need for miniaturised power generators that exceed batteries in energy density and compactness. The PowerMEMS project has developed (technologies for) two types of microgenerators: ultra-microgasturbines ranging from a few 100 W to ultimately 1 kW, and power scavenging microsystems in the µW range. This final workshop is organized accordingly: the first session is dedicated to ultra-microgasturbine technology and the second session to MEMS energy scavengers.

Programme

09.00 Registration - ***Session 1: Ultra-microgasturbines for power generation with hydrogen***

09.15 Welcome and introduction, Prof. D. Reynaerts, K.U.Leuven

09.30 Guest speaker: Beyond 1 000 000 rpm – Review of research on mega-speed electrical drive systems, C. Zwyssig, ETH Zuerich

10.15 Development of a high-speed micro gas turbine, Dr. J. Peirs, K.U.Leuven

10.45 Aerodynamics on a micro-scale, Prof. R. Van den Braembussche, VKI

11.15 Micro-combustion of hydrogen, Prof. P. Hendrick, RMA/ULB

11.45 Miniaturized heat exchangers, Prof. M. Baelmans, K.U.Leuven

12.15 Lunch break

13.15 High-speed electrical generators, Prof. J. Driesen, K.U.Leuven

13.45 High temperature MEMS sensors, Prof. R. Puers, K.U.Leuven

14.15 Concluding remarks

14.30 End session 1

14.30 Coffee Break - Registration - ***Session 2: MEMS energy scavengers***

15.00 Introduction, Prof. D. Reynaerts, K.U.Leuven

15.05 Guest speaker: Energy scavenging applications, Dr. R. Vullers, Holst centre

15.45 MEMS energy scavengers, Dr. P. Fiorini, IMEC

16.15 Power conditioning for MEMS scavengers, Prof. J. Driesen, K.U.Leuven

16.45 Concluding remarks

17.00 Closing drink

KATHOLIEKE UNIVERSITEIT LEUVEN

IWT

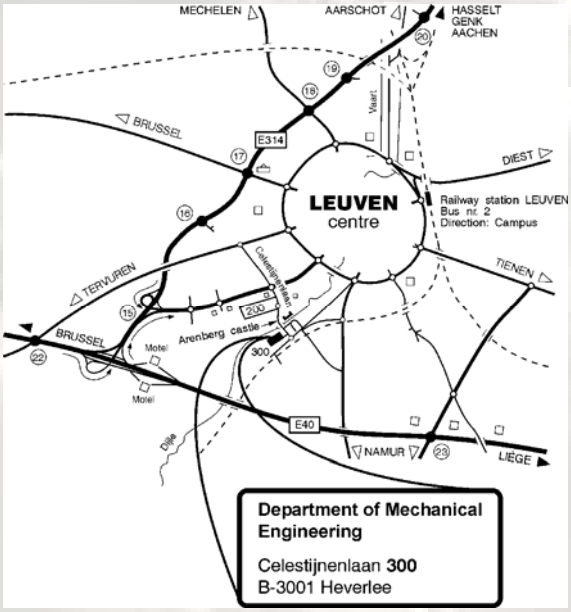
von Karman Institute for Fluid Dynamics

imec

powerMEMS

Venue

The workshop will be held in Aud. Snoeys, Dept. Mechanical Engineering, Celestijnenlaan 300, B-3001 Leuven.



Registration

Registration is for free. Please fax/mail registration data **before September 9, 2008** to:

Mrs. Karin Dewit
K.U.Leuven, PMA Division
Celestijnenlaan 300 b 2420, B-3001 Leuven
Tel. +32-16-322 480, Fax: +32-16-322 987, karin.dewit@mech.kuleuven.be

First name
Last name
Title
Company
Division
Address
Zip
City
Country
Email
Phone

Registration for (circle applicable): session 1 session 2 session 1 & 2

KATHOLIEKE UNIVERSITEIT LEUVEN

iwt

von Karman Institute for Fluid Dynamics

imec