

polyHIPE spring element (Uni Vienna)



Prototype of harvesting device (Uni Vienna and ComCard)



universität wien



ONE - DAY WORKSHOP
VIENNA, SEPTEMBER 19TH, 2016

WORKSHOP PROFILE

Energy harvester and rechargeable micro batteries are an enabling technology for autonomous systems such as wireless sensor nodes and medical sensors. The FP7 MATFLEXEND end-of-project workshop will present materials and device developments for energy harvesting and micro batteries, preferably for wearables.

Device work includes a novel capacitive energy converter and an integrated micro battery, as well as simulations for same. The materials work comprises novel materials for printable battery electrodes and separators, highly conductive elastomers, printable spring elements, high-k dielectrics based on doped PVDF, and the integration of SWCNTs, as well as force-spun nanofibers doped into said materials. The entire production chain, in which established industry printing and patterning methods are used, will be discussed, and prototypes will be presented. By design, the harvesters will be producible by standard continuous deposition processes.

A Round Table of Ideas will offer a platform to researchers from academia and industry to discuss device opportunities and applications of this innovative micro energy technology. We would also welcome industry input regarding the role of open access in facilitating industry innovation, in general energy harvesting but also in practical challenges to textile wearables such as electrical connectivity, durability and periodic cleaning.

REGISTRATION

Please register by Sept 5th at the latest by email at aniratech@googlemail.com
Contact: Wolfgang Bock | Phone: +49 89 916392

PARTICIPATION FEE

MATFLEXEND partners and presenters: free of charge
Academic participants 100,00 € per person
Industrial participants 250,00 € per person

VENUE

Faculty of Chemistry
Institute of Materials Chemistry & Research
Währinger Str. 42
1090 Vienna

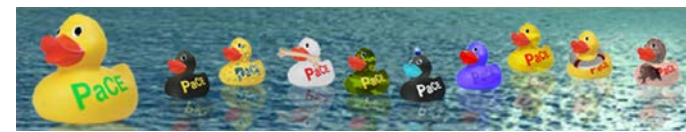
WHO SHOULD ATTEND?

- Materials researchers for rechargeable micro batteries, high-k dielectrics, compliant conductive elastomers and nano-materials for energy harvesters
- Developers of power supplies for miniaturized and wearable electronics
- Energy harvesting product and application developers and designers

MICRO BATTERY AND CAPACITIVE ENERGY HARVESTING MATERIALS

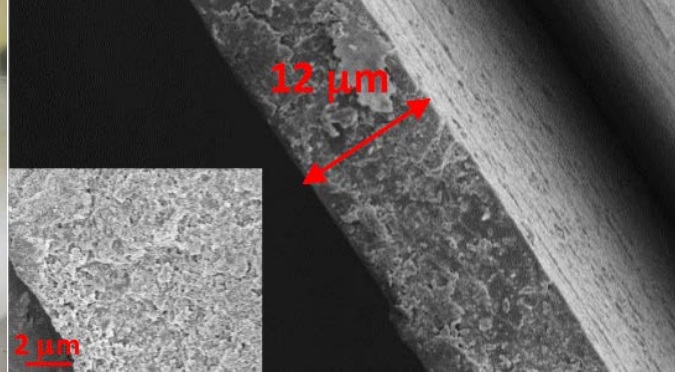
RESULTS OF THE MATFLEXEND PROJECT

FP7 MATFLEXEND is co-funded by the European Commission. The project runs from Oct. 2013 till September 2016.
www.matflexend.eu www.smart-power.de





Forcespinning spinneret (Pardam)



Cross Section of the High-k Dielectric (Imperial College London)



AGENDA

The Workshop will be moderated by Wolfgang Bock

9:00 Registration

WELCOME AND INTRODUCTION

9:30 Welcome Note

Dekan Keppeler and A. Bismarck, University of Vienna,

9:45 MatFlexEnd Concept: Energy Harvesting and Micro Batteries

R. Hahn, Fraunhofer IZM

MATERIALS

10:30 Nano Composites: High-k Dielectrics and Conducting Elastomer Development

M. Shaffer, IMPERIAL College London

10:50 Emulsion Templated Macroporous Micro-springs and *in-situ* Electrolyte filled Battery Separators

A. Bismarck, University of Vienna

11:10 Coffee Break

11:30 Nano Fibre Development for Applications in Electronics and Electrochemical Storage

J. Buk, Pardam

DEVICES

11:50 Micro Battery and Capacitive Energy Harvester Device Development for Wearable and Medical Electronics

R. Hahn, Fraunhofer IZM

PROCESSES AND APPLICATIONS FOR ENERGY HARVESTING AND STORAGE

12:10 Micro Battery Development at VARTA

M. Krebs, VARTA micro battery

12:30 3D Printing and Micro Patterning

J. Stampfl, TU Wien

13:00 Lunch Break

14:00 New Developments in Batteries

Andreas Laskos, CEST

14:30 Smart Materials for Energy Applications

To-Be-Announced, TU Graz

15:00 Coffee Break

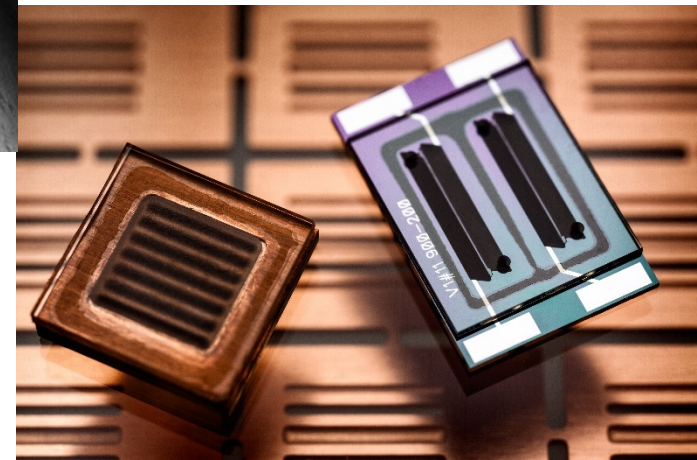
15:30 Smart Textiles for Military Use

R. Tandon, Bundeswehr Research, Smart Textiles,

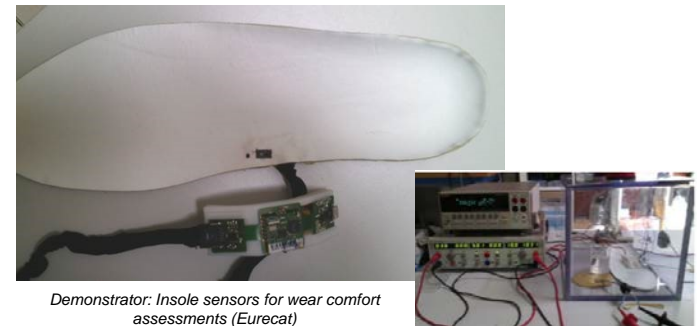
16:00 Round Table of Ideas on Future Applications

or

Visit the PaCE Laboratories



Micro Batteries with Dispense-printed Electrodes (Fraunhofer IZM)



Demonstrator: Insole sensors for wear comfort assessments (Eurecat)

POSTER SESSION

17:30 Posters of MatFlexEnd Partners and Guests and Get-together

19:30 Good Bye

