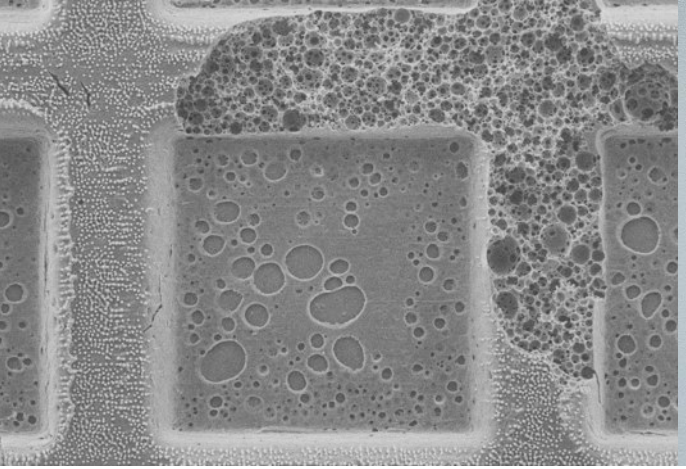

*polyHIPE spring element (Uni Vienna)*


*Prototype of harvesting device (Uni Vienna and ComCard)*

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ONE - DAY WORKSHOP
VIENNA, SEPTEMBER 19TH, 2016

# MICRO BATTERY AND CAPACITIVE ENERGY HARVESTING MATERIALS

## RESULTS OF THE MATFLEXEND PROJECT

## 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 anitratech@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

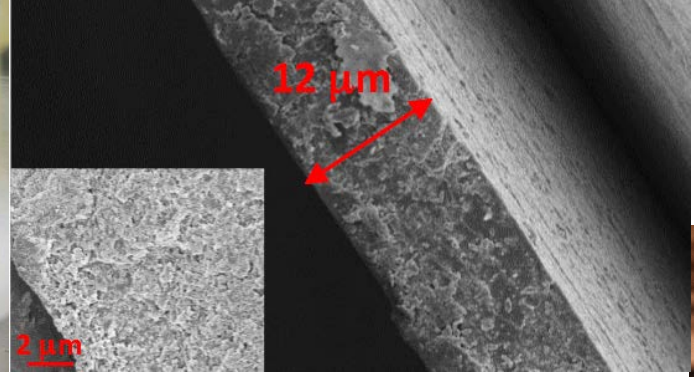
## WHO SHOULD ATTEND?

- 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

*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*

SEVENTH FRAMEWORK PROGRAMME

*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 Keppler 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 Conducing 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**

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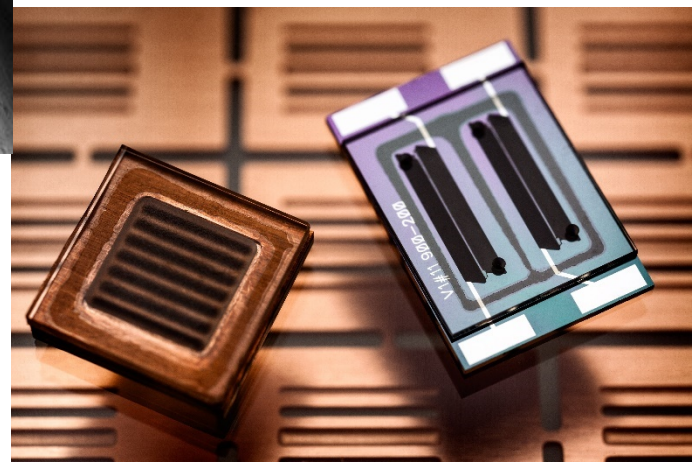
MAT FLEX END



*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**