MATFLEXEND Newsletter #2 March 5th 2016

Partner News: Fraunhofer IZM, Berlin

15. March 2016 Announcement

Launch of the new micro battery and prototype line at Fraunhofer IZM, Berlin

Fraunhofer IZM installed a new 10-meters long battery development and assembly line that enables production of miniature, custom-designed secondary sub-micro batteries with unparalleled precision in a huge Argon glove box system. Such batteries may be used on their own, or may be affixed to a flexible (wearable) interconnect thus promising flexible Li-ion batteries with superior barrier performance. Final MATFLEXEND battery demonstrators will be assembled in this line.

The following equipment is part of that battery line: Precision screen printer for the integration of battery electrodes and solder frames for the battery sealing, substrate bonding for a secure assembly and sealing of base and top substrates and battery lid, microfluidic electrolyte injection, capable for filling several hundred micro batteries simultaneously. Additional assembly and preparation units are available such as vacuum ovens, UV-clean, RF-plasma chamber as well as dispense and jetting stations. The battery line is part of Fraunhofers own strategic investments.

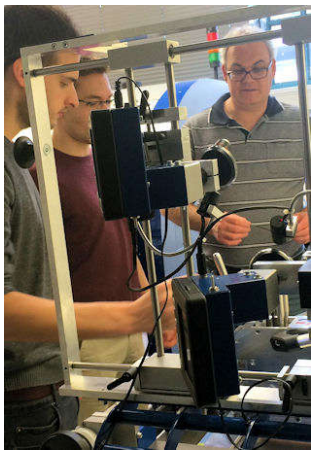
The opening of the micro battery line will be celebrated on March 15th2016. Starting at 11:00 laboratories and facilities will be presented to the public. The afternoon battery conference beginning at 1 p.m., is an opportunity to hear about new trends of micro batteries and engage in a discussion with speakers from the Fraunhofer IZM and the Technical University of Berlin.

Fraunhofer IZM micro battery prototype line

18. February 2016

Coruna delivers precision screen printer to IZM for Argon Glove box integration

One of the MATFLEXEND objectives is to print electrolyte/separator layers for flexible lithium ion batteries. This can only be done under argon inert gas condition. Fraunhofer IZM ordered a custom made high precision screen printer for use in an argon box. It is a completely new design with all hand wheels and operation panels accessible with the gloves. In addition Coruna came up with a straight forward screen transfer through the load lock system. 70 µm line and space resolution was demonstrated.

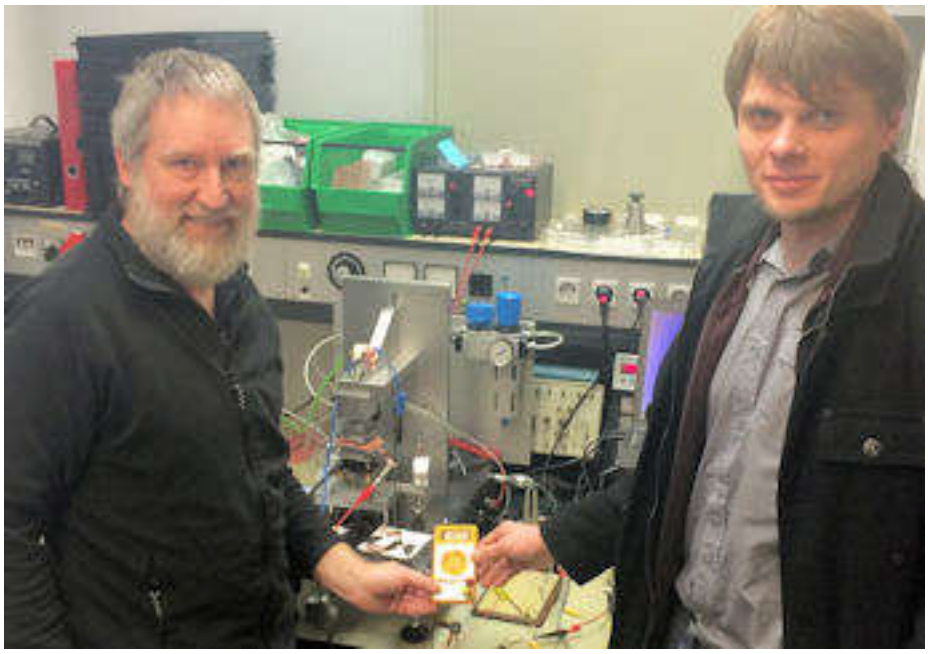


Joachim Biegel, Coruna Printed Electronics GmbH, demonstrates the printer operation prior to integration into the glove box.

27. January 2016

IMMS shows first version of MATFLEXEND harvester electronics

The extremely small and erratic current pulses generated at high voltages by the capacitive harvester are hard to measure and require a sophisticated high precision measurement setup. The German institute IMMS, a IZM subcontractor in FP7 MATFLEXEND, developed a straight forward measurement circuit that integrates the current and displays the mean harvested current. Two versions of the circuit were demonstrated with different sensitivity to the harvester leakage current. The finished module is due end of March 2016 as deliverable D55.



Björn Bieske and Gerrit Kropp (IMMS) are presenting the small energy harvesting measurement device which corresponds to MATFLEXEND deliverable D55.

25.- 29. January 2016

Transfer of EPD technology to Fraunhofer IZM

Electrophoretic deposition of lithium titanate and lithium iron phosphate electrodes is the research focus of the MATFLEXEND partner LAAS in France. This technology was now transferred to Fraunhofer IZM as part of Deliverable D36.

Amponsah Kyerematenge, LAAS (right) showed the details of electrophoretic electrode deposition to Giusseppe Elia (left) who takes care of this technology for the Berlin MATFLEXEND group.

Acknowledgments

FP7 Project 604093-2 Matflexend CP-FP is co-financed by the European Commission

Contact:

Fraunhofer IZM

Robert.Hahn@izm.fraunhofer.de

Gustav-Meyer-Allee 25

D-13355 Berlin

Line-numbers have been added to facilitate inquiries.