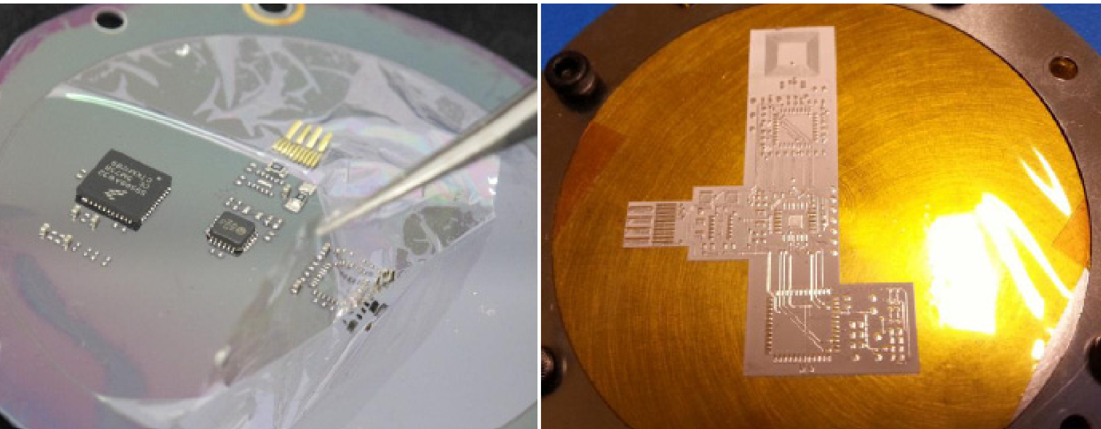
Hes·so
Haute Ecole Spécialisée
de Suisse occidentale
Fachhochschule Westschweiz
University of Applied Sciences
Western Switzerland



POUSSYERE

Platform for Ubiquitous Smart Systems for Embedded Recording of Events

Project Summary

Realization of an innovative technology for the assembly of at least 4 standard dies or encapsulated chips in miniature housings like "Micro Leadframe Package" (MLP). 3 technologies has been developed:

- Multilayer PCB on parylene,
- Pad Printing (Tampography),
- Template Synthesis.

A demonstrator 7mmx7mmx3mm with 5 circuits stacked has been developed.

However, the developed technology should allow to build much smaller systems, for example 2x2x2mm or less!

The long-term vision of this project is to open a field of research that, in the future, enable the HES-SO to have a technology to make portable systems size less than mm3!

Valorisation

The know-how and the proof of feasibility are particularly relevant to our region where the microtechnology is an economic force and a pillar of innovation. Several companies have shown a real interest in our activities

During the project, some activities were conducted with industrial partners very interested in our technology: Codman (Johnson & Johnson) in Le Locle and Hybrid in Chez-le-Bart (NE). Other companies have expressed their interest (Phonak, Hightech, etc.).

A patent application is pending. To our knowledge, there is no industrial technology to such a level of integration. For example, our multilayer parylene technology allow significant progress in terms of miniaturization compared to a state-of-the-art technology like HiCoFlex® of the HIGHTEC company in Lenzburg. (http://www.hightec.ch/).

Contact / Mario Dellea (mario.dellea@he-arc.ch)
Authors / René Beuchat, Andreas Hogg, Philippe Passeraub, Laurent Gravier, Marco Mazza, Medard Rieder

This project has been carried out by the group “Sensors” of the RCSO ISYS in collaboration with HE-Arc, hepia, HEIG-VD, HES-SO Valais-Wallis and EIA-FR.

ISYS · haute école arc ingénierie · hepia Haute école du paysage, d'ingénierie et d'architecture de Genève · heig-vd Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud · Hes·so Valais Wallis · Ecole d'ingénieurs et d'architectes de Fribourg Hochschule für Technik und Architektur Freiburg