

TERASEL

Thermoplastically deformable circuits for
embedded randomly shaped electronics

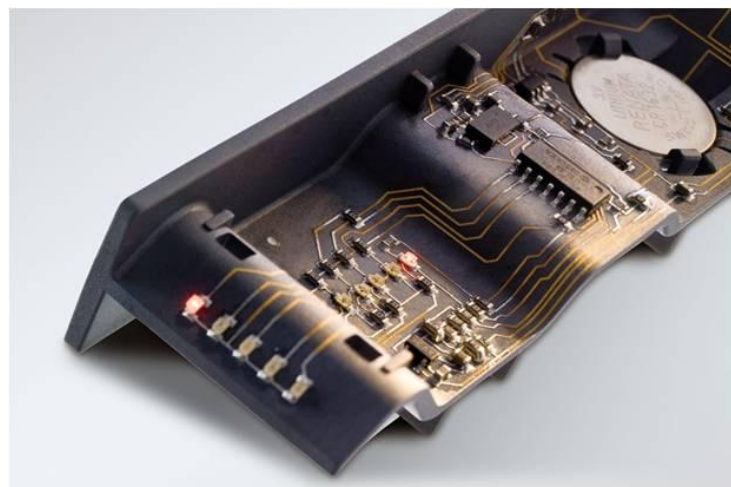


Vision & Aim

The overall aim of the **TERASEL** project is the development, the industrial implementation and the application in a wide range of domains of large area, cost-effective, randomly shaped electronics and sensor circuit technologies. More specifically the TERASEL objectives are the following :

- To develop a basic technology platform for rigid large-area randomly shaped electronic circuits. Key common features of the technologies in this platform are :
 - Electronic circuit fabrication and component assembly on flat substrates, compatible with existing equipment.
 - Application and embedding of the flat circuits in thermoplastically deformable polymers.
 - Development of high pressure, low temperature thermoforming technologies to deform the polymer embedded flat circuit into its random final functional shape.
- To set up a complete multi-competence industrial production chain for such circuits. Indeed, the goal is to achieve mature, near-to-production industrial processes for manufacturing randomly shaped circuits.
- To apply the developed technologies in a number of functional demonstrators close to products: a TV set with ambient illumination, a free-form man-machine interface, an intelligent car interior component, a 2.5D lighting device, a household appliance.

This novel technology can be developed successfully only thanks to the synergy and intensive co-operation between partners of the 2 industry sectors involved in TERASEL: the electronics circuit fabrication and assembly industry on one hand, and the polymer processing industry on the other. 6 SME's and 5 large industrial partners are complemented with 4 research institutes, thus forming a well-balanced consortium, fully capable of achieving the ambitious TERASEL goals. The merging of polymer and electronics industry competences will lead to a whole new range of products for a wide range of application domains.



Example of a 2.5D free form rigid electronic circuit

Project reference: 611439

Instrument: IP

Programme: FP7-ICT

Subprogramme area: ICT-2013.3.3

Contract type: Collaborative project

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Web site:

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Timeline:

Start Date: 01/10/2013

End Date: 30/09/2016

Budget:

Overall Cost: 7.358.915 EUR

Funding: 5.000.000 EUR

Project Partners:

- Interuniversitair Microelectronica Centrum vzw – imec, BE
- ACB NV – ACB, BE
- Centro Ricerche Fiat S.C.p.A.- CRF, IT
- Fraunhofer-gesellschaft zur Förderung der ange-wandten Forschung e.V. – IZM, DE
- Freudenberg Forschungsdienste KG – FFD, DE
- Niebling GmbH – Niebling, DE
- Nief Plastic SAS – NP, FR
- Page Electronica NV – Page, BE
- Philips Lighting BV – Philips, NL
- Association Pôle Européen de Plasturgie – PEP, FR
- plastic electronic GmbH – pe, AT
- Quad Industries NV – Quad, BE
- TNO - Nederlandse Organisatie voor Toegepast Natuur-wetenschappelijk Onderzoek – Holst, NL
- TP Vision Belgium NV – TPV, BE
- Fundico bvba – Fundico, BE