

Newsletter

1st Edition
Autumn 2013



SMARTLAM

www.smartlam.eu

Scalable manufacturing equipment for production of mechatronic microsystems based on polymer film, laser processing and e-ink printing

Project Summary

Welcome from the project co-ordinator

Dear Reader,

In recent years additive manufacturing technologies have gained increased importance in the industrial market. Now it is clear that these technologies will become relevant to the consumer market, as they are stimulated by technological innovations in the field of nanotechnologies and advanced production.

We are at the beginning of a process, that might result in manufacturing technologies similar to the replicator, which you might know from the Star Trek sci-fi films. A pre-requisite to this is the so-called convergence of generative technologies, where the SMARTLAM project funded by the European Commission is one of the pioneering projects in this field. SMARTLAM will demonstrate how new flexible, scalable manufacturing concepts building on generative technologies can help to reduce production time at lower costs for small and medium sized enterprises. Besides the technological challenges of integration heterogeneous technologies, SMARTLAM also addresses the product development obstacles of rapid manufacturing of components with printed sensors, wiring and energy supply.

In this newsletter, we highlight the profiles of the project's industrial partners (p2&3).



Members of the SMARTLAM team

Mission:

The SMARTLAM 3D-Integration approach (3D-I) combines new material properties with state of the art, scalable 3D technologies such as aerosol jet printing or different laser based processes for combined micro milling, microstructuring and surface functionalisation, micro welding and micro cutting.

Vision:

SMARTLAM will create a new paradigm for process integration in rapid prototyping and rapid manufacturing of 3D micro products.

Impact:

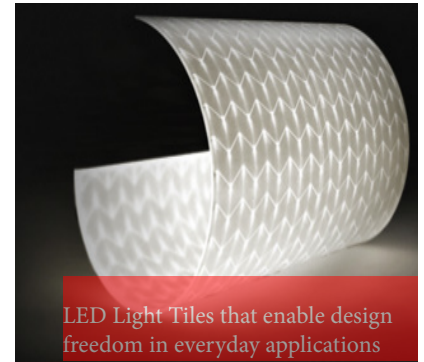
SMARTLAM will for the first time ever combine and improve state of the art 3D compatible technologies which integrates them in a innovative way in one machine, introducing ground breaking concepts for application design and technology integration.

Business Interest Group

The Business Interest Group (BIG) gathers expertise which is external to the SMARTLAM consortium. Members of the BIG are consulted about different issues, strategies and measures to be taken in the project. In order to meet the objectives of the project activities, the BIG will support the project team in the identification of relevant networks, provision of information and discussion of strategies to ensure the sustainability of SMARTLAM activities after the project.

The BIG has 4 members from the fields of materials, printing, precision assembly and fluidics. In addition to this SMARTLAM provides information to all other interested business partners by an extended BIG.

To register your interest in joining the group please contact:
tanja.Meyer@ipa.fraunhofer.de
or
christian.woegerer@profactor.at

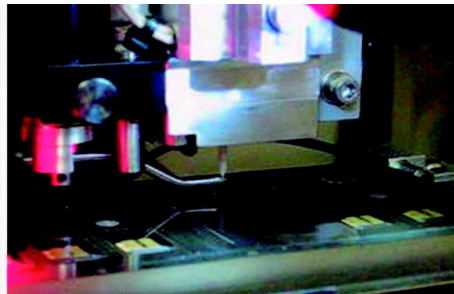
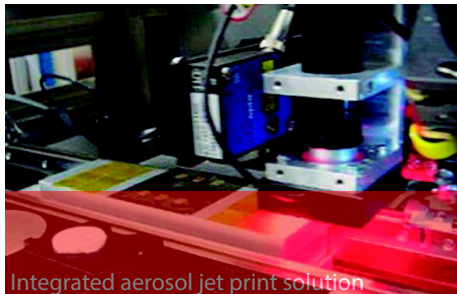


DesignLED Products Ltd

Product Demonstrator

DesignLED is a technology business, which is located near Edinburgh in Scotland and was formed in 2004. The company designs and manufactures LED lighting products using their light-guide/LED technology patent portfolio. The focus of Design LED's commercial exploitation is upon general lighting applications where the Unique Selling Point (USP) of high optical efficiency, thin/flexible panels and beam angle control, are enabling the next generation of energy efficient lighting based on LEDs. The technology also enables a wide range of other products where the thin, inexpensive, mechanically flexible, and segmented capabilities are suitable for lighting and backlighting applications in consumer electrical and electronic devices, automotive, point of sale advertising and industrial keypads.

www.designledproducts.com



Neotech Services MTP

Technology Provider

Neotech Services MTP was founded in 2001 with the aim of developing markets for new processing technologies. The company is currently the EU representative for the patented Aerosol Jet® technology and has been instrumental in its adoption by 20 European companies and institutes. The company has developed a wide network of system users in the areas of sensors, electronics, automotive, aerospace and medical technologies. In 2009, Neotech started research and development in unique processes and equipment for 3D Aerosol Jet printing. The goal of this research is to allow electronic

systems to be integrated into 3D components. The first 3D Aerosol Jet printer system, based on a 6 axis robot motion system, was built by Neotech and installed in March 2010. It is used for initial research into 3D printed circuits and sensors. In January 2011 an improved 3D Aerosol Jet printer was designed and installed based on 5 axis CNC motion. With this work, Neotech is pioneering a new market segment "3D Functional Printing". In 2012 the company will launch a range of 3D Aerosol Jet printers and also a prototyping and manufacturing service.

www.neotechservices.com



iHVStat brings the new evolution of electrophoresis systems based on microfluidic chips with amperometric detection.

Image courtesy of Micrux Instruments

Micrux Fluidic

Product Demonstrator

MicruX Technologies is an innovative technology-based company focused on the design, development and manufacture of miniaturized and portable analysis systems.

MicruX works in Lab-on-a-Chip (LOC) technologies being expert in microfluidic devices and electrochemistry fields, MicruX commercialises new technolo-

gies using the results of its wide research & development activities. The main research lines in which MicruX Technologies are involved includes microfluidic devices (development of new microchips electrophoresis with electrochemical detection), portable instrumentation (development of miniaturized and user-friendly instruments

for microchips electrophoresis), microfluidic platforms (easy-handle interfaces for the use of microchips with integrated electrodes) and end-users applications (development of end-user market applications for the microfluidic devices in health, environmental and food field).

www.micruxfluidic.com

ACI ecoTech GmbH

System Integrator

ACI ecoTec GmbH is located in South Germany and develops, builds, and integrates state-of-the-art production automation and process equipment for the Photovoltaic and Automotive industries. This includes precision robotic work-cells and turn-key production lines for assembly, micro-assembly, measurement and testing, for the production of Photovoltaic Wafers Cells and Modules, for Crystalline and Thin Film, as well as devices for electronics and automotive applications.

ACI ecoTec offers state-of-

the-art contacting systems and logistic systems for Thin Film module assembly. The contacting systems include technologies that are able to automatically dispense industry accepted conductive adhesives, contacting bus-bars and retaining / isolation strips to modules. These systems are available as full production contacting lines designed to meet the requested cycle times of industry; or available as a smaller development / laboratory unit for lower production runs where footprint is of concern. For the

laboratory units, conductive adhesive dispensing, bus-bar and retaining tape dispensing are combined into a single cell; with the full production line these processes are inline to achieve a very short cycle time for contacting. As an automation specialist, ACI ecoTec also offer high quality logistic systems for accurate transportation, stocking, feeding and positioning of modules including machine to machine software interfacing.

www.aci-ecotec.de

