

SMARTLAM, an FP7 project - Researchers develop new micro-production-technologies. While other approaches still print components, SMARTLAM prints complete systems!

The international FP7 project SMARTLAM develops efficient technologies for the production of small series for custom made microsystems. The production of micro parts is currently dependent on expensive equipment that does not allow flexibility in production and is consequently used only for large quantities. Within the SMARTLAM project, a consortium of eight international technological research partners are conducting research in order to produce efficient high quality 3D micro-scale systems. The main aim of the project is to benefit small and medium-scale manufacturers. Current outcomes of the SMARTLAM project enable cost efficient production of micro-scale systems in small batches. The goal is accomplished with a combination of technologies from prototyping; 3D printing and nanotechnology-based surface structuring. Examples include aerosol jet printing, laser based technologies, structuring of surfaces, micro welding and micro cutting. SMARTLAM uses polymer films as the basis. Modified and/or structured polymer foils serve as a base substrate for these microsystems. Editing these films is achieved through nanoimprint lithography, inkjet or laser prints. The technique of combining multiple layers to systems is called Laminated Objects Modeling. The main focus of the project is not on high volume production, but on production of small series, up to batch size one. All processes are carried out in easily-configurable individual modules and are independently combinable. These micro-production-stations are adaptive and configurable modular cells. All processing, control, and handling modules can be compiled optionally. The industrial capability is demonstrated by means of two use-cases in the fields of life sciences (electrophoresis chip for bio-analytic) and optics (custom tailored LED systems).



Photo: Researcher develops new micro-production-technologies

FOR MORE INFORMATION

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Responsible Research and Innovation needs to go global

Horizon 2020 is the European Commission's most ambitious funding programme to date. Matching this ambition is the concept of Responsible Research and Innovation (RRI), which aims to pair scientific excellence with social awareness and responsibility. RRI is an inclusive approach to research and innovation (R&I), to ensure that societal actors work together during the whole research and innovation process.

It aims to better align both the process and outcomes of R&I, with the values, needs and expectations of European society. Today, social awareness and responsibility cannot stop at national borders. Global instruments such as the UN Convention on Biological Diversity (1992) recognise that the grand challenges of humanity affect everybody and that all relevant actors need to receive fair benefits from the innovation process. «RRI cannot succeed if it only deals with the governance of emerging technologies in affluent countries; a global perspective requires a framework for research and innovation that is linked to citizen needs and humanity's challenges» said Prof. Doris Schroeder, Co-ordinator of Progress, at ESOF 2014 in Copenhagen.

The Progress project (PROmoting Global REsponsible research and Social and Scientific innovation 2013-2016) leads debates on all continents to integrate RRI with other governance frameworks. For instance, in emerging economies such as China, India and South Africa, the concept of inclusive innovation emphasizes the role of poor citizens as contributors to and beneficiaries of innovation.



Photo: Participants at Progress RRI Workshop with traditional knowledge holders, scientists and policy makers in South Africa

FOR MORE INFORMATION

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