NaPa Integrated Project - Emerging Nanopatterning Methods

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The growing importance of nanotechnology for the European Research Area is reflected in the Sixth Framework Programme Thematic Priorities. There exists increasing research activity related, for example, to polymers, bio applications, nanophotonics and molecular structures. To answer the needs in these research fields the Emerging Nanopatterning Methods (NaPa) consortium was established. The consortium integrates new patterning methods into one project, both anticipating and responding to the increasing need for nanopatterning technologies, standards and metrology required to harness the new application-relevant properties of engineered structures with nm-scale features. The NaPa project provides low-cost scalable processes and tools to cover the requirements of patterning from microelectronics through photonics to biotechnology. To achieve this, research in three technology strands is carried out. The technologies are Nanoimprint Lithography, Soft Lithography & Self-Assembly and MEMS-based Nanopatterning. The research is supported by three overarching themes required by all the strands, namely, Materials, Tools and Simulation.

The NaPa consortium brings together 35 leading academic and industrial European groups from 14 countries with a vast amount of recent know-how on nanofabrication, partly developed within projects in the EU previous Framework Programme.

The recent results obtained in the project include, for example, development of fabrication method for nanoimprinted membranes, fabrication of 3-dimensional stamps development of convective assembly deposition methods, realisation ofnanodispensing cantilevers, modelling the stresses in the cantilevers and new tools for nanoimprinting, to mention a few. In this presentation we will describe the structure of this Integrated Project and report on ongoing the activities.