



Tethis presents its new system for the deposition of functional coatings on microfabricated devices

Milano (Italy), Nov 21, 2008 - **Tethis** is a company active in the nanotechnology field and develops new solutions based on innovative nanostructured materials and porous coatings.

It commercializes laboratory-scale equipments for the synthesis of nanoparticles and the deposition of nanostructured thin films, and supports the research and development of new materials to be included in devices for improving performances.

In November Tethis has completed the realization of a new system for the production of nanostructured coatings. The technology used is the Supersonic Cluster Beam Deposition (SCBD). The nanoparticles are produced by mean of Pulsed Microplasma Cluster Source (PMCS), a process patented by Tethis, who also holds its industrial exploitation.

This technology allows the growth of nanoparticle assembled thin films on every kind of substrate, without the manipulation of the nanoparticles or a post processing stage before their utilization in the final device.

The PMCS operation for nanoparticle production is based on the localized microplasma erosion of a rotating conductive cathode. Thanks to the internal conditions of the source, the material vapours condense by nucleation and form the clusters that are carried up to the substrate in a process gas.

The deposition process takes place in controlled conditions which guarantee a better reproducibility of the process compared to traditional methods, without neglecting that this approach reduces at minimum the contact chances between nanoparticles and external ambient, and guarantees a major safety for the user.

The system, called Calliroe, is the new Tethis' investment for its own internal research: it has been developed within the NanoOnSi project, and it will be used for the functionalization of microfabricated substrates (silicon, glass, polymers) with nanoparticles, for their validation in different application fields.

Calliroe is the most advanced system in the PMCS-SCBD family, and allows the deposition of coatings for prototyping as well as for starting of pilot productions.

The system is compatible with batch and on-line production techniques; it will be interfaced to the clean room installed in the Tethis' laboratories.

Thanks to its characteristics Calliroe is also suitable for customized coating service for the company's clients.

The range of materials that can be deposited comprehends: transition metals and their oxides, noble metals, grafitic carbon, doped semiconductors and composite materials.

Before the installation at the Tethis' laboratories in Milano, Calliroe will be exposed at the Hi.Tech.Expo fair (Milano 25-28 November 2008, Pad. 14P, stand Tethis F46).