

Biotechnology | Technology Offer

Nano-Scale Monolayer Technology for Biochips

Field of Application

Nano- or microstructured layers for the protection of surfaces. Base coating for biochips.

Current Status of Technology and its Market

Nano or microstructuring of surfaces is usually produced by optical means such as for example by applying a mask followed by exposure to light.

For the manufacture of biochips additional techniques are required, which allow the structuring of the surface and the covalent binding of further substances on to this layer. The preferred type of layers is that which has amino groups exposed at the surface because these terminal groups are particularly suited for the binding of further molecules. This process generally requires a multi step, wet chemistry process which results in additional costs.

It would be most desirable for such applications to have access to a single step technique including the structuring of the surface in the nano or micro range as well as the incorporation of suitable amino groups.

Innovation

A new coating technology for monolayers has been developed at the Institute for Applied Physical Chemistry of the University of Heidelberg. The new technology and the surface-modified nano-scale layer system that it produces are based on laterally cross-linked monolayers of aromatic and/or heteroaromatic compounds which are covalently bound to the substrate by the application of an electron or photon beam.

Your Gain

The application of this novel surface layer system results in particularly thin monolayers (1-3 nm) with very high density and very high mechanical stability and temperature resistance for the structuring and the protection of surfaces. These layers can optionally be produced with amino groups by self reduction of the irradiated areas. In this way they can be further chemically modified, for example through binding of nucleic acids or proteins.

Patent Portfolio

US-Patent No. 6,764,758 and patents in Germany, Great Britain and France are granted.

Technology Transfer

The Technologie-Lizenz-Büro GmbH has been charged with the commercialisation and now offers companies the opportunity to obtain a license to apply this new and promising technology.

For further information on "Monolayer Technology for Biochips", please contact:

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