Cluster Nanotechnology

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nanoInk NETZWERK

Network partners

The nanoInk network started work on 1/10/14. To achieve its objectives, the network groups SMEs, large companies and scientific and research institutions. The network is managed by Nanoinitiative Bayern GmbH.

bestway | sp³c speciality product | process production | + consulting

HEIDELBERG

EZD Das Dispergier-Zentrum

KRÜSS

GCB Druckfarben Printing Inks Wahl GmbH

SKZ

GB neuhaus NANO COATING SURFACE

RAS materials + technologies

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TECHNISCHE HOCHSCHULE NÜRNBERG GEORG SIMON OHM

Cluster Nanotechnologie

PARTICLE METRIX

INM

10/2017

Objectives of the network

- Bundling of partner skills
- Interchanging of all the stakeholders along the value chain
- Cooperating in development projects
- Further-developing process technologies on a joint basis
- Further-developing special inks for industrial inkjet printing systems
- Joint PR work
- Organising specialist events
- Extending the network on a strategic basis

Become one of our partners!

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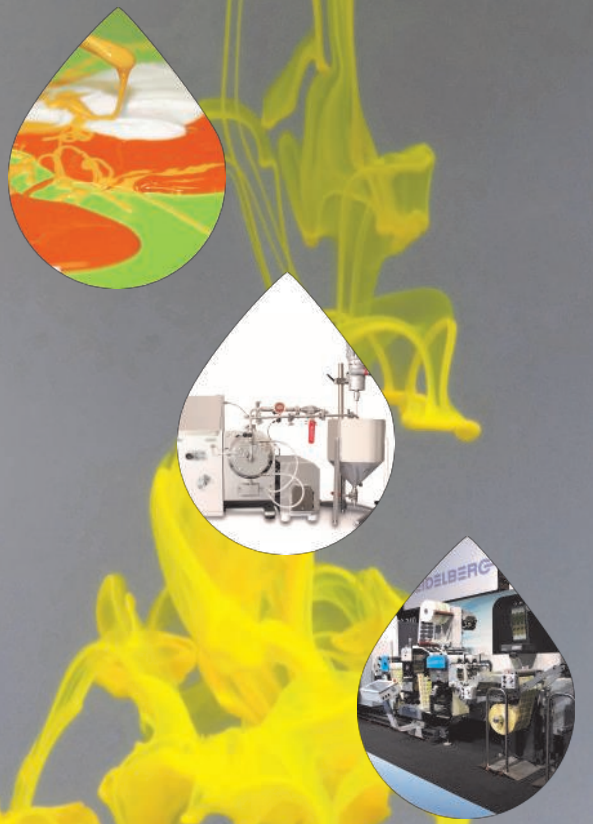
Special inks for industrial inkjet printing systems



www.nanoink.de/en



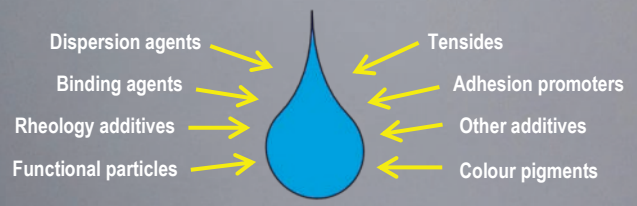



Competencies

- Synthesising and functionalising nanomaterials
- Process technology
- Formulating inks for industrial applications
- Analysing particles, dispersions and inks
- Developing customised inkjet printing systems
- Labels, advertising and packaging printing and marking technologies
- Characterising printed structures

Special inks

Many components turn one drop of ink into a highly complex, technical structure.



Nanoparticle special inks can contain inorganic pigments (e.g. titanium dioxide, carbon black or iron oxide) or organic ones (e.g. azo or polycyclic pigments). In addition to pigments, functional nanoparticles are used like nanosilver, nanocarbons, titanium dioxide, iron oxide or nanoclays, for example.

Process technology

Manufacturing nanoinks is a demanding process that generally consists of several stages. Dispersing nanoparticles, wetting and stabilising them is a crucial factor in avoiding reagglomeration, for example.

The nanoInk network has available access to a large number of mixing, dispersing and grinding processes. Modern measuring technology is also available to characterise dispersions.

Printing systems

In the media sector, there is a significant trend towards individualised and personalised low-quantity products. Digital printing is an important factor in implementing this on a cost-effective and economic basis. There is no need to create printing plates, since inkjet printing is a non-impact digital printing process.

The inkjet printing heads differ depending on the drop production process. This means that when you develop special inks it is essential to take into account the printing head technology and to adapt it if necessary.

Applications

Inkjet printing for decorative applications

The area of decorative inkjet printing has a lot of scope for nanoinks to revolutionise the colour impression. There is a market in photographic and art printing as well as in decorative printing of labels and textiles as well as printing on tiles, glass, floor panels, metal and other building materials.

Printed electronics

Printed electronics is one of the key technologies in the future development of electronic applications. Inks based on carbon nanotubes (CNTs) and silver nanoparticles, for example, can be used in electronic components. Further areas of application for conductive nanoinks include antennas (RFIDs), conducting tracks, flexible displays or photovoltaic modules.

Smart Inks

Tailor-made, conductive, magnetic or fluorescing nanoparticles and their formulations in special inks are used in forgery protection, codes and markings in the packaging sector as well as in the field of functional textiles and polymers.