

# Center for Applied Nanotechnology

## Cosmetics

### New Ingredients for Cosmetics

Manipulation of nanostructures formed by self-organization of polymer chains is one of the main fields of interest within CAN GmbH. In-house development of **thickeners** for water and oil based personal care cosmetic products has already been done.

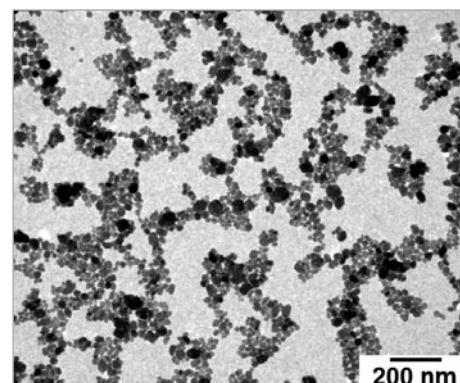
Furthermore, in polymeric based nanostructures (e.g. micelles and vesicles) drugs, nutrients, dyes and flavors can be **encapsulated** and used as carrier systems. For this purpose biocompatible homo and block copolymers are routinely synthesized and characterized within CAN GmbH.

CAN GmbH knowledge in the field of nanoparticle and polymer synthesis, their modification and combining opens up large opportunities for developing special **nanoparticle – polymer based systems**. The special procedures developed within CAN GmbH enable the nanoparticle surface modification and variation of their properties in such a manner that they can be used for different systems. Such systems will be specially developed for applications in personal care products, e.g. deodorants and hair care products.



Gels made by usage of thickeners produced in CAN. Thickeners can stabilise capsules of peeling substances (a), air bubbles and various pigments (b,c).

CAN GmbH offers companies and research institutions contract research and development services in the area of nanotechnology and participates in national and international research programs. The focus of activities is on the utilization of new findings made in chemical nanotechnology and analysis, particularly in the areas of consumables, special polymers and health care. The main areas of expertise include the production of numerous nanoparticulate materials, the encapsulation of active substances, the development of toxicity assays as well as the development of nanoparticle-based biological and medical markers.



Transmission electron microscopy image of ZnO nanoparticles used for cosmetics.

#### CAN expertise

- Nanoparticles
- Special Polymers
- Thickeners
- Micelles
- Vesicles
- Encapsulation
- Target delivery

CAN expertise in cosmetics

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