

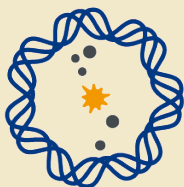


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ESSEN

Open-Minded

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CeNIDE

CENTER FOR NANOINTEGRATION
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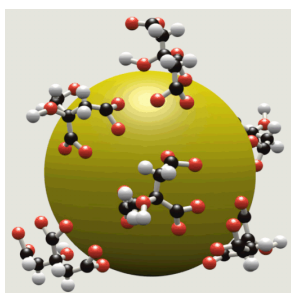
**TECHNICAL CHEMISTRY I
BARCIKOWSKI GROUP**

*Laser-Generated Functional
Nanoparticles & Materials*

We investigate laser-generated nanoparticles and materials. The research field extends from bioconjugation of gold nanoparticles to applications in medical products, an area in which the specific properties of laser-generated nanoparticles can be used to valuable effect. In this particular context, the major advantages are the high purity of the colloids, easy and economical production, the absence of hazardous or toxic chemicals, stability and the high activity of surface charged nanoparticles. Laser-generated gold nanoparticles, for instance, can be used for conjugation with biomolecules in gene and drug delivery, therapy and medical diagnostics applications and have three to five times higher activity compared to chemically produced particles.



polymer nanocomposites



scheme of a functionalized nanoparticle

The team offers...

- ligand-free nanoparticles
- customized nanoparticle-solvent combinations
- nanoparticles functionalized with biomolecules
- nanoization of unsolvable compounds (organic or inorganic)
- nanocomposites (nanoparticles in a polymer matrix)

Contact

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MEDICA, Düsseldorf, 16–19 November 2011, Hall 3 Stand D81 (8)
Joint Stand of the State of North Rhine-Westphalia