Nano- and Micro-Gels for Design of Multifunctional Materials

Initiative: Lichtenberg - Professuren

Bewilligung: 03.12.2009

Laufzeit: 5 Jahre

Projekt-Website: www.dwi.rwth-aachen.de

The professorship deals with the synthesis, characterization and application of polymer colloids. The research will be focused on design of polymer nano- and microgels with tailored properties such as: controlled size and shape; availability of functional units (reactive groups, degradable segments); sensitivity to temperature, pH, organic solvents etc. The aqueous nano- and microgels represent colloidal systems that will be used for the three major research directions: 1) Nanogel-based multifunctional materials; 2) Nanogels for diagnostic and controlled release; 3) Nanogels for "Lab-on-a-Bead" technology. The research program will provide new insights into synthesis and properties of novel polymer colloids as well as the design of multifunctional materials on their basis. Furthermore, it will contribute to the development of novel hard and soft materials by considering the surface and interface phenomena, reactions in heterophase systems and transport phenomena in solid materials.

Projektbeteiligte

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