

EINLADUNG

zum Vortrag
von

Dr. Ivan Coluzza

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Reverse engineering of proteins: sequence controlled self-knotting colloidal patchy polymers

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Dienstag, 16. April 2013, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmanngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmanngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract:

Knotted chains are a promising class of polymers with many applications for materials science and drug delivery. Here we introduce an experimentally realizable model for the design of chains with controllable topological properties. Recently, we have developed a systematic methodology to construct self-assembling chains of simple particles, with final structures fully controlled by the sequence of particles along the chain. The individual particles forming the chain are colloids decorated with mutually interacting patches, which can be manufactured in the laboratory with current technology. Our methodology is applied to the design of sequences folding into self-knotting chains, in which the end monomers are by construction always close together in space. The knotted structure can then be externally locked simply by controlling the interaction between the end monomers, paving the way to applications in the design and synthesis of active materials and novel carriers for drugs delivery.

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