

## **Polymers going rigid and laterally infinite**

Prof. A. Dieter Schlüter

Institut für Polymere  
ETH Zürich

The talk will concentrate on two aspects. The first deals with a synthetic method which allows to systematically increasing the cross-sectional diameter of linear polymer chains (thickness). Having a collection of the resulting products, so-called dendronized polymers, at hand, an experiment will be discussed that suggests the thickness of these chains to play a role in its surprising result. We feel this surprising result may eventually lead to the discovery of a third fundamental variable in polymer chemistry besides chain length and persistence length, namely chain thickness. The second aspect of the talk circles around the question whether synthetic procedures can be developed which allow the generation of a 2D polymer. These polymers, which have never been synthesized, are characterized by one monomer unit thick (better: thin) sheet-like structure with internal long-range order (periodicity). In light of the recent discovery of graphenes, which are naturally occurring 2D polymers, synthetic methodology that could eventually lead to sheet-like polymers is expected to have a considerable impact on the molecular sciences.