

MACROCENTER PRESENTATIONS



Professor Dieter Schlüter

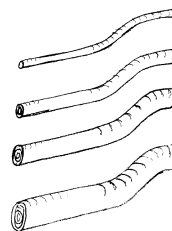
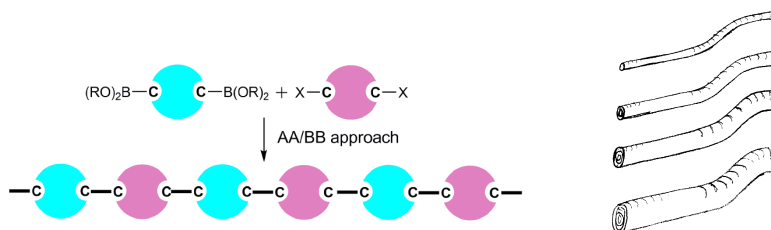
The ETH Chair of Polymer Chemistry

Zurich, Switzerland

“POLYMERS GOING RIGID AND THICK”

MONDAY, MARCH 14TH, 2011 | LEIGH 309, 4:00PM | CHEMISTRY

After a brief excursion into the discovery of Suzuki polycondensation in 1988, some of the very recent exciting findings using this powerful method for the synthesis of polyarylenes will be described. One of them shows the Nobel-prize winning Suzuki cross-coupling reaction to be arguably the best method for CC bond formation.^[1] In a second part it will be discussed how conventional polymer chains can be systematically thickened to the degree that they attain a persistent cylindrical shape and turn into molecular objects. A particular representative, a fifth generation dendronized polymer, is the largest ever synthesized macromolecule with structure precision. Quite some emphasis will be placed upon the aspect why thickening of polymer chains makes sense and to which applications this can lead.^[2]



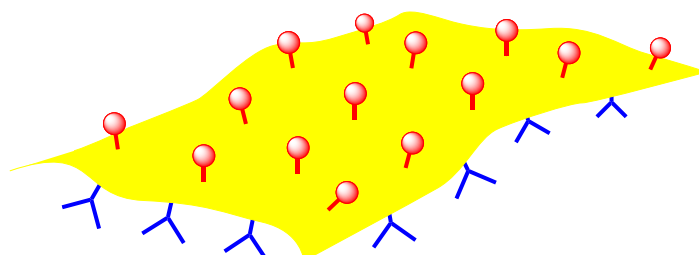
[1] R. Kandre, K. Feldman, H. E. H. Meijer, P. Smith, A. D. Schlüter, *Angew. Chem. Int. Ed.* **2007**, *46*, 4956-4959.

[2] B. Zhang, R. Wepf, K. Fischer, M. Schmidt, S. Besse, P. Lindner, B. T. King, R. Sigel, P. Schurtenberger, Y. Talmon, Y. Ding, M. Kröger, A. Halperin, A. D. Schlüter, *Angew. Chem. Int. Ed.* **2011**, *50*, 737-740.

“POLYMERS GOING Laterally INFINITE”

TUESDAY, MARCH 15TH, 2011 | NPB 1001, 4:05PM | MATERIALS SCIENCE ENGINEERING

The present interest in graphene, a naturally occurring two-dimensional polymer, makes clear that there is no synthetic method available that would allow accessing a covalently bonded molecular sheet with internal periodicity and a thickness of one monomer unit only.^[1] After a brief overview of “organic” and “polymer” approaches performed so far, the concepts will be presented which are presently being pursued in the author’s laboratory. They rest upon carefully designed monomers, interfacial as well as single crystalline ordering, and both metal-complexation and light-induced polymerizations. The lecture will provide a state-of-the-art picture including the not yet published first solution to the problem.



[1] J. Sakamoto, J. van Heijst, O. Lukin, A. D. Schlüter, *Angew. Chem. Int. Ed.* **2009**, *48*, 1030-1069