

**Mesomorphic Hexabenzocoronenes Bearing Perfluorinated Chains.** Alameddine, Bassam; Aebischer, Olivier F.; Amrein, Walter; Donnio, Bertrand; Deschenaux, Robert; Guillon, Daniel; Savary, Corinne; Scanu, David; Scheidegger, Oliver; Jenny, Titus A. Chemistry Department, University of Fribourg, Fribourg, Switz. Chemistry of Materials (2005), 17(19), 4798-4807.

### **Abstract**

Synthesis and characterization of new hexabenzocoronene (HBC) derivs. bearing perfluoroalkylated chains are described. These disk-shaped polycondensed arom. hydrocarbons are known to self-assemble by  $\pi$ -stacking into columnar architectures. The peripheral decoration with perfluorinated chains, well-known for their low van der Waals forces, leads as expected to reduced intercolumnar interactions. Powder X-ray diffraction and differential scanning calorimetry of these perfluoroalkylated HBCs proved liq. cryst. (LC) properties whose transition temps., mesophase stability, and nature depend on the detailed structure of these side chains, i.e., the ratio between aliph. and perfluorinated parts. On the other hand, the insertion of a Ph spacer between the arom. core and the lateral chains increases the LC transition temp. and, surprisingly, switches the mesophase structure from columnar to smectic.