

## **Charge Injection, Conduction, and Polymorphism in Pentacene**

- T. Palstra (University of Groningen)

Pentacene is a molecular conductor with a band width of the order of 0.5 eV. We report four different polymorphs of this compound, characterized by various diffraction techniques. The most stable polymorph, the single crystal phase, exhibits a layer spacing of 14.1 Å. We obtained hole mobilities of the order of 1 cm<sup>2</sup>/Vs and very low trap densities of 10<sup>13</sup> cm<sup>-3</sup> using ultra clean synthesis methods. Interestingly, we predict a large anisotropy in the effective mass, resulting from frustration of the dispersion in the herringbone crystal structure.