

## SEMINARI 19 DE JULIOL DE 2012

**Lloc:** Sala de Graus de la Facultat de Ciències i  
Biociències  
A les 12.00 hores

Conferència a càrrec de  
**Prof. Klaus-Richard Pörschke**

*Max-Planck Institut für Kohlenforschung  
Mülheim, Germany*

### 'Plastic Crystals in Organometallic Chemistry: The Muetterties Complexes"

Plastic crystals (dynamically orientationally disordered mesophases) are quite common in organic and inorganic chemistry, but much less so in organometallic chemistry. After a general introduction into the subject some information on the solid-state phase properties of formally five-coordinate (18-e, d<sup>8</sup>) ionic Ni-π-allyl complexes such as  $[(\pi\text{-allyl})\text{Ni}\{\text{P}(\text{OMe})_3\}_3]\text{PF}_6$  is given.<sup>1</sup> The lecture focuses on a set of 12 Muetterties complexes ( $\pi\text{-C}_3\text{H}_4\text{R}\text{ML}_3$  (R = H, 2-Me; M = Co-Ir; L = PMe<sub>3</sub>, P(OMe)<sub>3</sub>) as the neutral group-9 analogs which all form a plastically crystalline mesophase. While some complexes recrystallize sharply, others undergo substantial supercooling, and part of them pass through an additional glassy crystalline state. The phase properties and transitions have been studied by differential scanning calorimetry (DSC), solid-state NMR (SSNMR), single-crystal (XRD) and in situ powder X-ray diffractometry (PXD). A series of unusual SSNMR observations is reported.

(1) Pörschke, K.-R. et al. *Organometallics* 2006, 25, 2308-2330.

*Aquesta conferència és una activitat formativa recomanada  
per l'Estudi de doctorat en Química*



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