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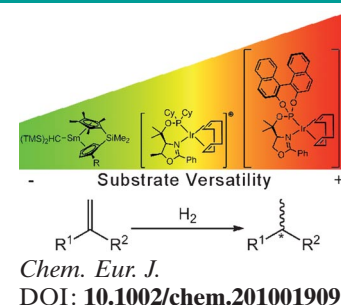


### Asymmetric Synthesis

O. Pàmies, P. G. Andersson, M. Diéguez\*

#### Asymmetric Hydrogenation of Minimally Functionalised Terminal Olefins: An Alternative Sustainable and Direct Strategy for Preparing Enantioenriched Hydrocarbons

**Chiral hydrocarbons through hydrogenation:** This minireview highlights the progress made in the preparation of chiral hydrocarbons through asymmetric hydrogenation of minimally functionalised terminal olefins (see scheme).

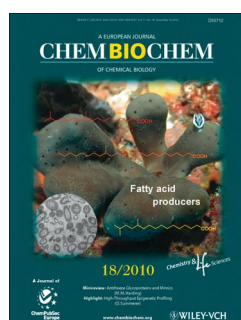
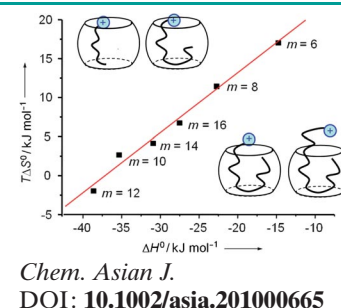


### Host-Guest Systems

Y. H. Ko,\* Y. Kim, H. Kim, K. Kim\*

#### U-Shaped Conformation of Alkyl Chains Bound to a Synthetic Receptor Cucurbit[8]uril

**This guest is bent on fitting in:** Alkyltrimethylammonium and cucurbit[8]uril (CB[8]) form 1:1 host-guest complexes with a high binding constant ( $K \approx 10^6 \text{ M}^{-1}$ ). A short hexyl chain can be fully encapsulated in an extended conformation inside the CB[8] cavity while for longer aliphatic chains, from octyl to cetyl, the alkyl tails take on a U-shaped conformation inside the cavity, which follows the enthalpy-entropy compensation rule commonly observed in molecular recognition systems.

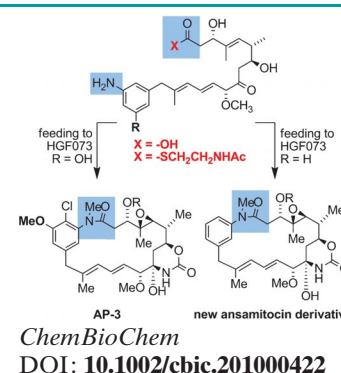


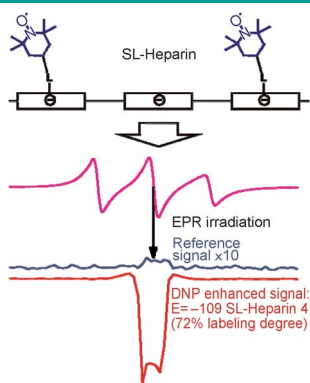
### Total Synthesis

K. Harmrolfs, M. Brünjes, G. Dräger, H. G. Floss, F. Sasse, F. Taft, A. Kirschning\*

#### Cyclization of Synthetic *seco*-Proansamitocins to Ansamitocin Macrolactams by *Actinosynnema pretiosum* as Biocatalyst

**Ring closure is possible** with *seco*-proansamitocin and two activated SNAC esters, which can be processed to ansamitocin P3 and 19-deschloro-20-demethoxy AP-3, respectively, by an AHBA-blocked mutant of *Actinosynnema pretiosum*. This work sheds light on the synthetic potential of macrolactamizing amide synthases. The new ansamitocin derivative showed similar to enhanced antiproliferative activity against several cancer cell lines relative to AP-3.





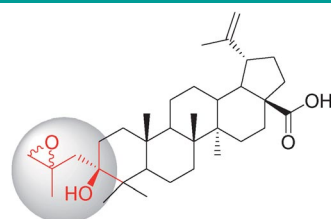
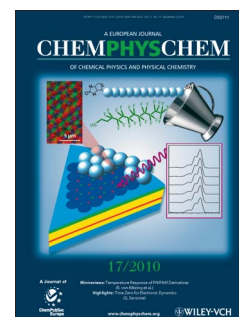
ChemPhysChem  
DOI: 10.1002/cphc.201000559

### Dynamic Nuclear Polarization

B. C. Dollmann, A. L. Kleschyov, V. Sen, V. Golubev, L. M. Schreiber, H. W. Spiess, K. Münnemann,\* D. Hinderberger\*

#### Spin-Labeled Heparins as Polarizing Agents for Dynamic Nuclear Polarization

**Enhanced signals:** Spin-labeled (SL) heparins are introduced as a class of polarizing agents for Overhauser-type dynamic nuclear polarization (DNP). All presented SL-heparins show high  $^1\text{H}$  DNP enhancement factors up to  $E = -110$ . These high enhancements—despite broad continuous-wave electron paramagnetic resonance (CW EPR) lines—are achieved by using heterogeneously distributed (along the heparin backbone) spin labels.



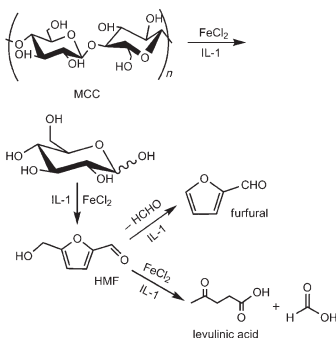
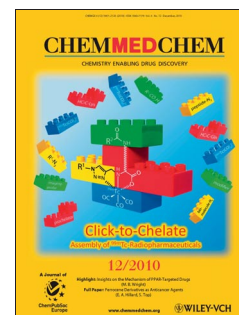
ChemMedChem  
DOI: 10.1002/cmdc.201000329

### Structure–Activity Relationships

C. Genet, C. Schmidt, A. Strehle, K. Schoonjans, J. Auwerx, R. Saladin, A. Wagner\*

#### Redefining the TGR5 Triterpenoid Binding Pocket at the C-3 Position

**A defining characteristic:** Syntheses of potent TGR5 agonists were used to characterize binding interactions. A series of C-3 modified betulinic acid derivatives were synthesized and evaluated. Among them, epoxide **15** showed nanomolar activity.



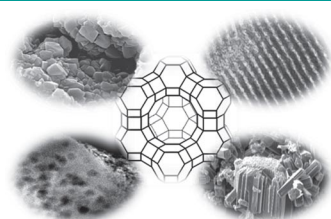
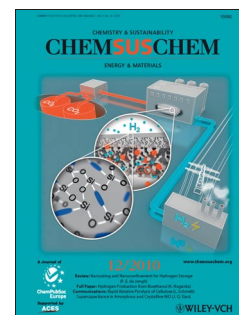
ChemSusChem  
DOI: 10.1002/cssc.201000184

### Renewable Resources

F. Tao, H. Song, L. Chou\*

#### Hydrolysis of Cellulose by Using Catalytic Amounts of $\text{FeCl}_2$ in Ionic Liquids

**The use of  $\text{FeCl}_2$**  as catalyst in an ionic liquid, 1-(4-sulfonic acid) butyl-3-methylimidazolium hydrogen sulfate (IL-1), is found to be effective for the hydrolysis of microcrystalline cellulose (MCC). The conversion reaches  $>84\%$ , and yields of 5-hydroxymethylfurfural (HMF) and furfural of 34% and 19%, respectively, are achieved; small amounts of levulinic acid and total reducing sugars are also generated.



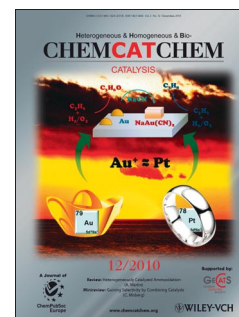
ChemCatChem  
DOI: 10.1002/cctc.201000158

### Industrial Catalysis

R. Chal, C. Gérardin, M. Bulut, S. van Donk\*

#### Overview and Industrial Assessment of Synthesis Strategies towards Zeolites with Mesopores

**Industrial zeolite and magic:** The accessibility of zeolites (see figure) is of paramount importance to capitalize on their effectiveness in industrial catalysis. The variety of synthesis strategies proposed today for the preparation of 'hierarchical' zeolite materials combining micro- and mesoporosity is discussed.



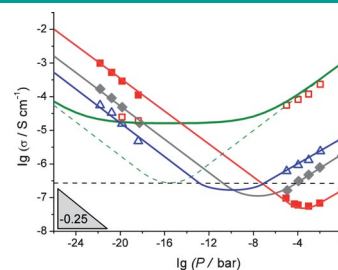


### Solid-State Conduction

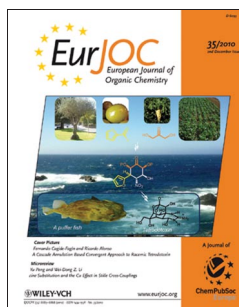
P. Lupetin, G. Gregori,\* J. Maier

#### Mesoscopic Charge Carriers Chemistry in Nanocrystalline SrTiO<sub>3</sub>

**Impressive size effect:** The conductivity of nanocrystalline SrTiO<sub>3</sub> as a function of oxygen partial pressure is reported and is compared with the properties of the coarsened, microcrystalline material. Electron-, hole-, and oxygen vacancy-type conduction differ by several orders of magnitude (see plot), critically depending on the grain size of the sample.



Angew. Chem. Int. Ed.  
DOI: 10.1002/anie.201003917

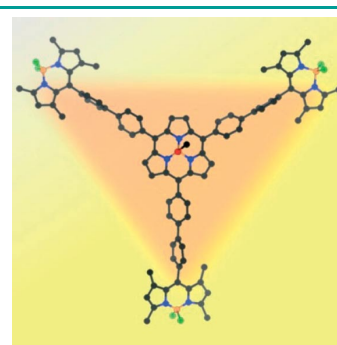


### Porphyrinoids

H. Sugimoto, M. Muto, T. Tanaka, A. Osuka\*

#### Synthesis of BODIPY-Appended Subporphyrins

Intramolecular excitation energy transfer in BODIPY-appended subporphyrins was found to occur from the subporphyrin to the BODIPY part. Fluorescence from BODIPY follows the intrinsic fluorescence properties of BODIPY references. *meso*-Oligo(1,4-phenylene) substituents can interact electronically with the subporphyrin core to cause redshifted absorption bands and to increased fluorescence quantum yields.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201001188

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