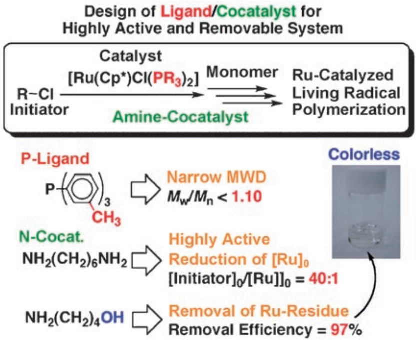
Living Radical Polymerization

M. Ouchi, M. Ito, S. Kamemoto, M. Sawamoto**

Highly Active and Removable Ruthenium Catalysts for Transition Metal-Catalyzed Living Radical Polymerization: Design of Ligands and Cocatalysts

Chem. Asian J.
DOI: **10.1002/asia.200800142**

Slim and active. The systematic search and design of phosphine ligands (PR_3) and amine cocatalysts (additives) resulted in obtaining highly active and removable catalysts, pentamethyl-cyclopentadienyl (Cp*) ruthenium(II) phosphine complexes $[RuCp^*Cl(PR_3)_2]$, for the transition metal-catalyzed living radical polymerization of methyl methacrylate (MMA).



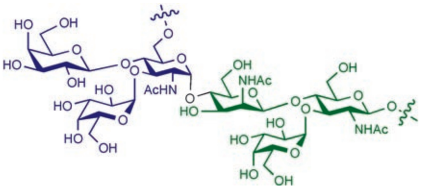
Oligosaccharides

M. Vasan, J. Rauvolfova, M. A. Wolfert, C. Leoff, E. L. Kannenberg, C. P. Quinn, R. W. Carlson, G.-J. Boons**

Chemical Synthesis and Immunological Properties of Oligosaccharides Derived from the Vegetative Cell Wall of *Bacillus anthracis*

ChemBioChem
DOI: **10.1002/cbic.200800210**

Sweet relief: Sera from rabbits exposed either to live and irradiation-killed spores of *Bacillus anthracis* Sterne $34F_2$ or immunized with *B. anthracis* polysaccharide conjugated to keyhole limpet hemocyanin (KLH) were found to contain antibodies that recognized isolated polysaccharide (shown in scheme) and two synthetic trisaccharides. This provides proof-of-concept towards the development of vegetative and spore-specific reagents for detection and targeting of nonprotein structures of *B. anthracis*.

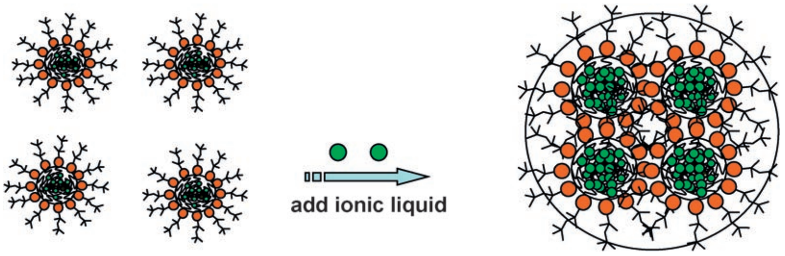


Ionic Liquids

Y. Gao, A. Voigt, L. Hilfert, K. Sundmacher*

Nanodroplet Cluster Formation in Ionic Liquid Microemulsions

ChemPhysChem
DOI: **10.1002/cphc.200800157**



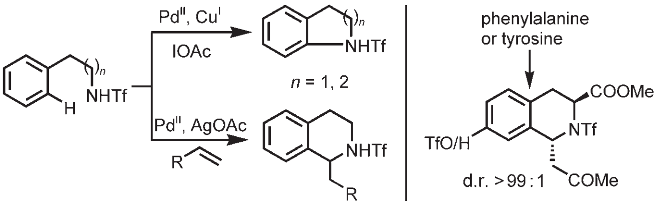
Drop by drop: A unique self-assembled cluster nanostructure is observed in reverse $bmimBF_4$-in-toluene ionic liquid microemulsions (see picture). The large nanodroplet clusters consist of small ionic liquid microemulsion droplets. These novel nanodroplet clusters may have some unusual and unique properties with a number of interesting possibilities for potential applications.

Heterocycle Synthesis

*J.-J. Li, T.-S. Mei, J.-Q. Yu**

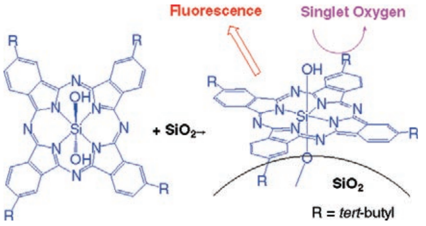
Synthesis of Indolines and Tetrahydroisoquinolines from Arylethylamines by Pd^{II}-Catalyzed C–H Activation Reactions

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200802187**



Hand in hand: A versatile C–H activation route for the synthesis of indolines, tetrahydroquinolines, and tetrahydroisoquinolines from simple arylethylamines relies on a one-pot iodination and amination reaction (see scheme, Tf = trifluoromethanesulfonyl). The natural amino acids phenylalanine, tyrosine, and tryptophan can be converted into various heterocycles using this technology.

Photoactive-Solid Phthalocyanines



Photophysical properties and surface structures of silica-gel-supported photofunctional (phthalocyaninato)silicon complexes ($SiPc-SiO_2$) have been investigated. By changing the amount of SiPcs, we have succeeded in preparing solid materials based on Pc complexes having both monomeric photophysical properties and a high ability for singlet-oxygen generation.

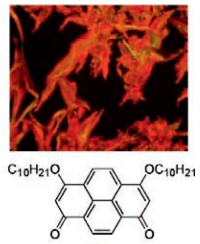
K. Ishii, Y. Kikukawa, M. Shiine, N. Kobayashi,* T. Tsuru, Y. Sakai, A. Sakoda*

Synthesis and Photophysical Properties of Silica-Gel-Supported Photofunctional (Phthalocyaninato)silicon Complexes

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200800208**

Liquid Crystals

4c



5c

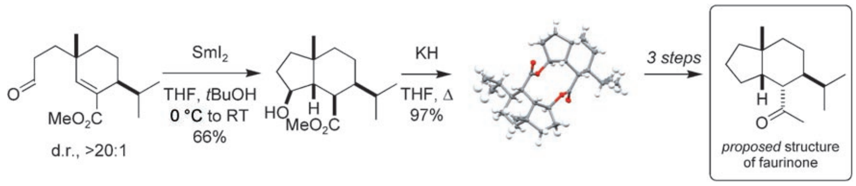
Discotic liquid crystalline π-acceptor compounds were synthesized by using *anti*- and *syn*-pyrenediones. The liquid crystalline phases were assigned to be D_{L2} from POM, DSC, and XRD measurements and single-crystal study of the model crystalline compounds.

*M. Yasutake, T. Fujihara, A. Nagasawa, K. Moriya, T. Hirose**

Synthesis and Phase Structures of Novel π-Acceptor Discotic Liquid Crystalline Compounds Having a Pyrenedione Core

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200800360**

Natural Product Synthesis



Two electrons, three new stereocentres: The *cis*-hydrindane motif is found in a number of natural products that display important biological activity. A flexible, stereoselective approach to the framework has been developed that features highly diastereoselective, SmI_2-mediated cyclisations. The strategy has been exploited in the first synthesis of the proposed structure of faurinone, a sesquiterpene ketone isolated from *Valeriana officinalis*.

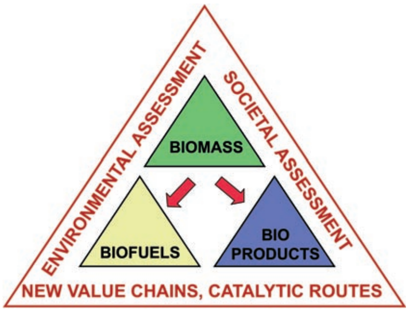
*T. J. K. Findley, D. Sucunza, L. C. Miller, D. T. Davies, D. J. Procter**

A Flexible, Stereoselective Approach to the Decorated *cis*-Hydrindane Skeleton: Synthesis of the Proposed Structure of Faurinone

Chem. Eur. J.
DOI: **10.1002/chem.200800930**

Biomass Convension

It's not easy being green! New value chains and catalytic systems must be developed to decrease the cost of biomass processing to bioproducts as those employed for hydrocarbons are not adapted to biomolecules. However, the extensive use of biomass for industrial production raises environmental and ethical issues, which in turn raise doubts on the sustainability of these processes.



*P. Gallezot**

Catalytic Conversion of Biomass: Challenges and Issues

ChemSusChem
DOI: **10.1002/cssc.200800091**

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