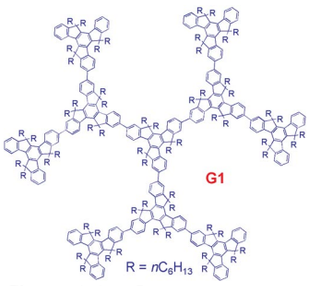
Luminescent Dendrimer Materials

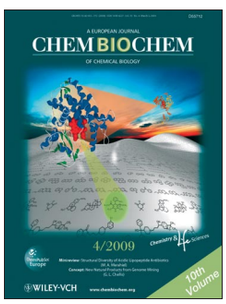
Y. Jiang, L. Wang, Y. Zhou, Y.-X. Cui, J. Wang, Y. Cao,* J. Pei*

π-Conjugated Dendrimers as Stable Pure-Blue Emissive Materials: Photophysical, Electrochemical, and Electroluminescent Properties

Bigger, stronger, better: A family of giant π-conjugated dendrimers has been developed as pure-blue active materials for organic light-emitting diodes. The dendrimer-generation number has little effect on the photophysical, electrochemical, and EL properties, and device efficiency of **G0** and **G1**. The preliminary OLED devices achieve pure-blue color with stable CIE chromaticity coordinates (0.16, 0.08) for both **G0** and **G1**.



Chem. Asian J.
DOI: **10.1002/asia.200800329**

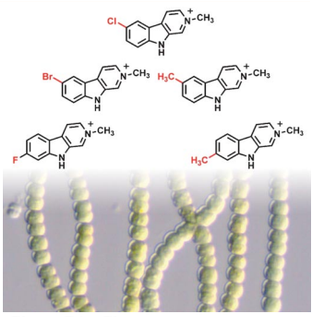


Biosynthesis

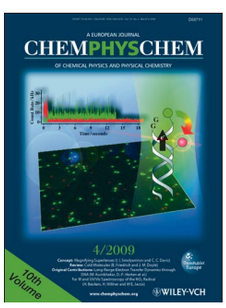
C. Portmann, C. Prestinari, T. Myers, J. Scharte,* K. Gademann*

Directed Biosynthesis of Phytotoxic Alkaloids in the Cyanobacterium *Nostoc* 78–12A

Out of the green! Precursor-directed biosynthesis allowed for the production of new nostocarboline derivatives that display phytotoxic and algicidal properties—in a phototrophic organism. The mechanism of action includes downregulation of photosynthesis, as demonstrated by chlorophyll-*a* fluorescence imaging.



ChemBioChem
DOI: **10.1002/cbic.200800837**

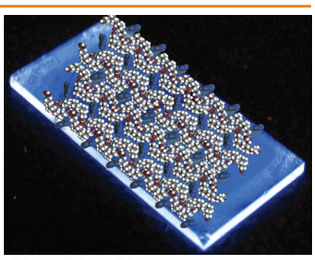


Thin Films

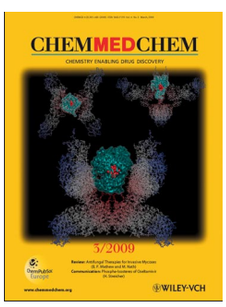
J. Moreau, U. Giovanella, J.-P. Bombenger, W. Porzio, V. Vohra, L. Spadacini, G. Di Silvestro, L. Barba, G. Arrighetti, S. Destri, M. Pasini, M. Saba, F. Quochi, A. Mura, G. Bongiovanni, M. Fiorini, M. Uslenghi, C. Botta*

Highly Emissive Nanostructured Thin Films of Organic Host–Guests for Energy Conversion

All-organic nanostructured host–guest materials (see picture) show enhanced, tunable fluorescence due to a high concentration of dyes with controlled spatial and geometrical organization that allows controlled resonant energy transfer. Homogeneous films of deoxycholic acid host–guests, provide coatings that convert near-UV light into blue light with an efficiency higher than that of the standard polymeric blends.



ChemPhysChem
DOI: **10.1002/cphc.200800682**

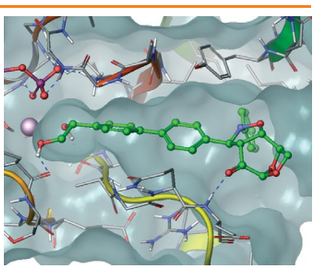


Antitumor Agents

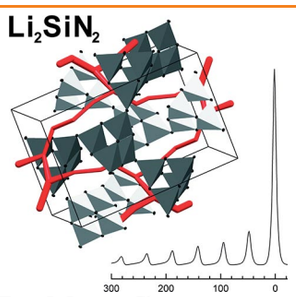
C. Müller, M. A. Gomez-Zurita Frau, D. Ballinari, S. Colombo, A. Bitto, E. Martegani, C. Airoldi, A. S. van Neuren, M. Stein, J. Weiser, C. Battistini,* F. Peri*

Design, Synthesis, and Biological Evaluation of Levoglucosenone-Derived Ras Activation Inhibitors

A panel of new potential Ras ligands was generated by decorating a tricyclic levoglucosenone-derived scaffold with aromatic moieties. Some members of the panel show in vitro inhibitory activity toward the nucleotide exchange process on Ras and are toxic to some human cancer cell lines.



ChemMedChem
DOI: **10.1002/cmdc.200800416**



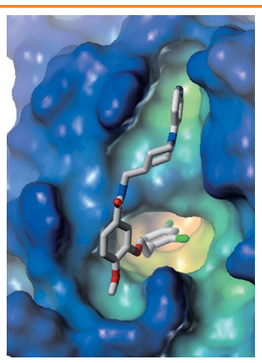
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200801168**

Lithium Nitridosilicates

S. Pagano, M. Zeuner, S. Hug, W. Schnick*

Single-Crystal Structure Determination and Solid-State NMR Investigations of Lithium Nitridosilicate Li_2SiN_2 Synthesized by a Precursor Approach Employing Amorphous "$Si(CN_2)_2$"

"$Si(CN_2)_2$" has been identified as a novel precursor for nitridosilicates. The crystal structure of the Li^+ ion conductor Li_2SiN_2 has been determined. Li_2SiN_2 consists of two interpenetrating cristobalite type nets which are made up from hetero-adamantane-like $[Si_4N_6]N_{4/2}$ groups. The ^7Li and ^{29}Si solid-state NMR spectra of Li_2SiN_2 are reported.



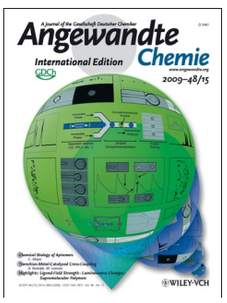
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200806219**

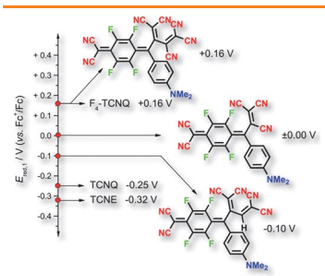
Nonbonding Interactions

H. Matter,* M. Nazaré, S. Güssregen, D. W. Will, H. Schreuder, A. Bauer, M. Urmann, K. Ritter, M. Wagner, V. Wehner

Evidence for C–Cl/C–Br···π Interactions as an Important Contribution to Protein–Ligand Binding Affinity

Attractive chlorine: Noncovalent interactions between chlorine or bromine atoms and aromatic rings in proteins open up a new method for the manipulation of molecular recognition. Substitution at distinct positions of two factor Xa inhibitors improves the free energy of binding by interaction with a tyrosine unit. The generality of this motif was underscored by multiple crystal structures as well as high-level quantum chemical calculations (see picture).





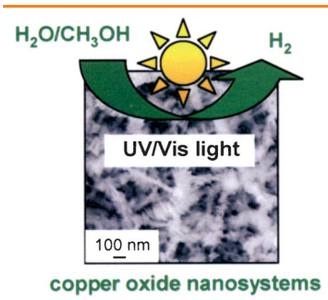
Chem. Eur. J.
DOI: **10.1002/chem.200802563**

Electron Acceptors

M. Kivala, C. Boudon, J.-P. Gisselbrecht, B. Enko, P. Seiler, I. B. Müller, N. Langer, P. D. Jarowski, G. Gescheidt, F. Diederich*

Organic Super-Acceptors with Efficient Intramolecular Charge-Transfer Interactions by [2+2] Cycloadditions of TCNE, TCNQ, and F_4-TCNQ to Donor-Substituted Cyanoalkynes

Rivaling the best one: Thermal [2+2] cycloadditions of TCNE, TCNQ, and F_4-TCNQ to *N*,*N*-dimethylanilino-substituted cyanoalkynes afforded a new class of organic super-acceptors featuring efficient intramolecular charge-transfer interactions. These acceptors rival the acceptor F_4-TCNQ in the propensity for reversible electron uptake as well as in electron affinity, which makes them interesting as p-type dopants for potential application in optoelectronic devices.



ChemSusChem
DOI: **10.1002/cssc.200900032**

Hydrogen Production

D. Barreca,* P. Fornasiero,* A. Gasparotto, V. Gombac, C. Maccato, T. Montini, E. Tondello

The Potential of Supported Cu_2O and CuO Nanosystems in Photocatalytic H_2 Production

Hy wire: Supported Cu_2O nanosystems and CuO nanowires obtained by chemical vapor deposition were used in the photocatalytic splitting of methanol/water solutions to produce hydrogen. The results obtained with these systems open appealing perspectives for the clean conversion of sunlight into storable chemical energy.