

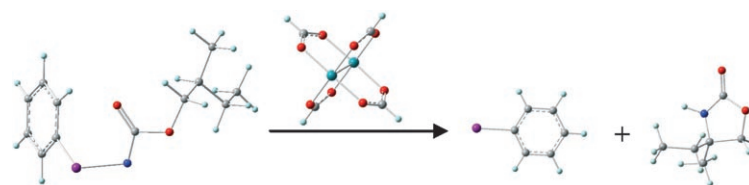
Reaction Mechanisms

X. Lin, C. Zhao, C.-M. Che,* Z. Ke,
D. L. Phillips

A DFT Study on the Mechanism of
 $\text{Rh}_2^{\text{II,II}}$ -Catalyzed Intramolecular
Amidation of Carbamates

Chem. Asian J.

DOI: 10.1002/asia.200700068



Alone yet together: DFT calculations elucidate the catalytic process of a di-rhodium tetracarboxylate catalyzed intramolecular C–H bond-amidation reaction. Out of six reaction pathways that involve

a metal–nitrene complex, the singlet concerted pathway that produces the product with retention of chirality at C is predicted to be the predominant one.

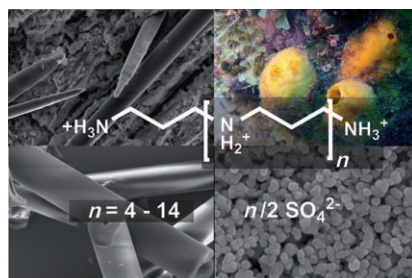
Biomineralization

S. Matsunaga, R. Sakai,* M. Jimbo,
H. Kamiya

Long-Chain Polyamines (LCPAs) from
Marine Sponge: Possible Implication in
Spicule Formation

ChemBioChem

DOI: 10.1002/cbic.200700305



LCPAs in sponge spicules relate two distinct marine organisms, diatoms and sponges, by “silica deposition”. LCPA-directed silica deposition has been proposed for the formation of silica walls in diatoms, while other chemical factors have been suggested for sponges. Here we show that LCPAs can be an additional factor involved in spiculogenesis in the sponge.

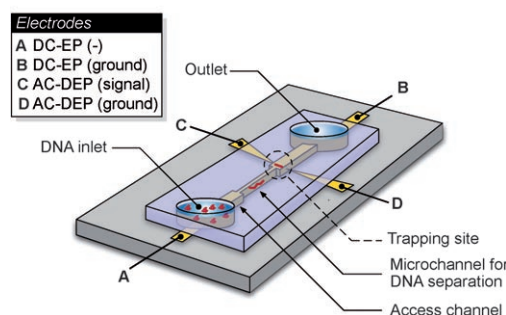
Dielectrophoretic Trapping

M. Kumemura,* D. Collard,*
C. Yamahata, N. Sakaki, G. Hashiguchi,
H. Fujita

Single DNA Molecule Isolation and
Trapping in a Microfluidic Device

ChemPhysChem

DOI: 10.1002/cphc.200700268



DNA bridges: A double stranded λ -DNA molecule is isolated by dc electrophoresis and trapped by ac dielectrophoresis between aluminium electrodes in a microfluidic chip [see device (left) in

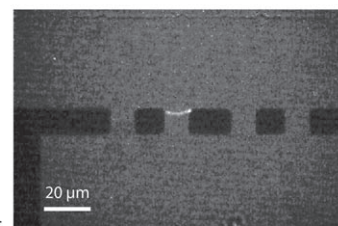


figure and DNA bridge between electrodes (right)]. This single-molecule trapping technique is highly effective, allowing long DNA fragments to be instantly captured in stretched formation.

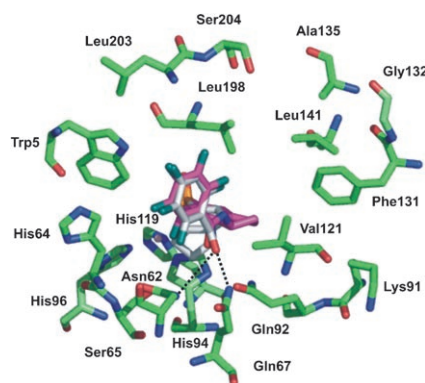
Inhibitor Design

A. Thiry,* B. Masereel, J.-M. Dogné,
C. T. Supuran, J. Wouters, C. Michaux

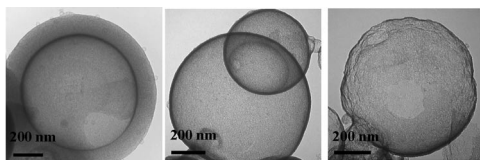
Exploration of the Binding Mode of
Indanesulfonamides as Selective
Inhibitors of Human Carbonic Anhydrase
Type VII by Targeting Lys 91

ChemMedChem

DOI: 10.1002/cmdc.200700057



The binding mode of (R)- (magenta) and (S)-1-pentafluorophenylamido-5-sulfonamide (light gray) inside the human carbonic anhydrase VII active site is shown. A shared hydrogen bond between the carbonyl group of each compound and Gln 67 and Asn 62 is observed. To increase hCA VII selectivity, structural modifications of these compounds are proposed in order to design new anticonvulsant agents.



Mesoporous Carbon

Silica

Metal Oxide hollow spheres

PF-PEO polymer blend can be used as a novel organic template to synthesize mesoporous carbon or silica hollow spheres. The mesoporous carbon hollow

spheres can act as a hard template for the preparation of mesoporous oxide hollow spheres.

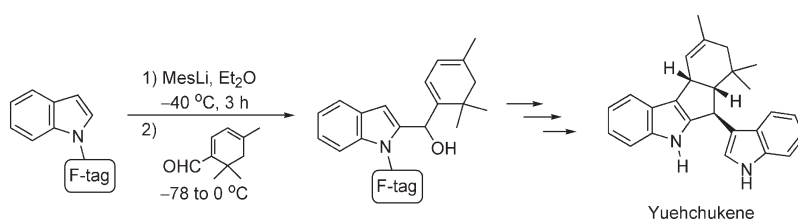
Hollow Mesoporous Spheres

C.-Y. Chang-Chien, C.-H. Hsu, T.-Y. Lee, C.-W. Liu, S.-H. Wu, H.-P. Lin,* C.-Y. Tang, C.-Y. Lin

Synthesis of Carbon and Silica Hollow Spheres with Mesoporous Shells using Polyethylene Oxide/Phenol Formaldehyde Polymer Blend

Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200700210



Mesityllithium was found to be a suitable reagent for the α -lithiation of perfluoroalkyl-tagged 1-(arylsulfonyl)indole, and

the fluorous synthesis of yuehchukene was accomplished efficiently using this method as a key step.

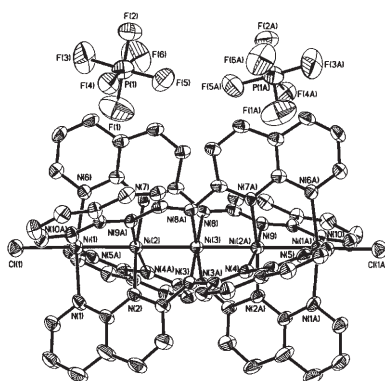
Lithiation of Fluorous-Tagged Indole

H. Naka, Y. Akagi, K. Yamada, T. Imahori, T. Kasahara, Y. Kondo*

Fluorous Synthesis of Yuehchukene by α -Lithiation of Perfluoroalkyl-Tagged 1-(Arylsulfonyl)indole with Mesityllithium

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200700525



Metal string! The first linear nickel framework in which the usual sequence of Ni^{II} atoms has been reduced by two electrons is presented. The electronic structure of the metal framework appears intermediate between a localized picture corresponding to $\text{Ni}^{\text{II}}\text{-Ni}^{\text{I}}\text{-Ni}^{\text{II}}\text{-Ni}^{\text{I}}\text{-Ni}^{\text{II}}$ and a fully delocalized model represented as $(\text{Ni}_2)^{3+}\text{-Ni}^{\text{II}}\text{-(Ni}_2)^{3+}$.

Mixed-Valent Compounds

I. P.-C. Liu, M. Bénard,* H. Hasanov, I.-W. P. Chen, W.-H. Tseng, M.-D. Fu, M.-M. Rohmer, C.-h. Chen, G.-H. Lee, S.-M. Peng*

A New Generation of Metal String Complexes: Structure, Magnetism, Spectroscopy, Theoretical Analysis, and Single Molecular Conductance of an Unusual Mixed-Valence Linear $[\text{Ni}_5]^{8+}$ Complex

Chem. Eur. J.

DOI: 10.1002/chem.200700750



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