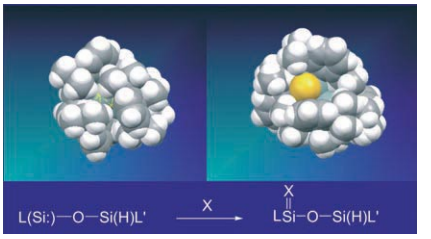
SPOTLIGHTS …

Silanoic Acid Derivatives

S. Yao, Y. Xiong, M. Brym, M. Driess*

A Series of Isolable Silanoic Thio-, Seleno-, and Telluroesters (LSi(=X)OR) with Donor-Supported Si=X Double Bonds (L = β-Diketiminate; X = S, Se, Te)

Chem. Asian J.
DOI: **10.1002/asia.200700285**



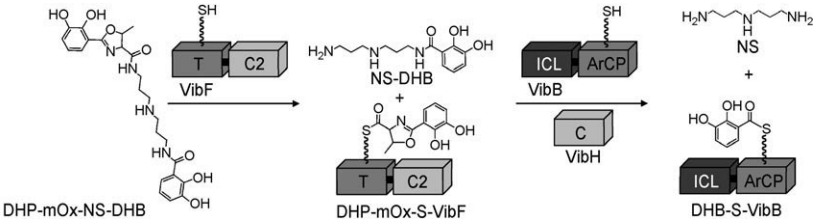
Pocket a chalcogen: Gentle oxidation of the siloxysilylene L(Si:)OSi(H)L′ (L = HC(CMe)$_2$[N(aryl)$_2$], L′ = CH-[(C=CH$_2$)CMe][N(aryl)]$_2$; aryl = 2,6-*i*Pr$_2$C$_6$H$_3$) with chalcogens (S, Se, Te) affords the respective silanoic silylesters in high yield. These silicon analogues of carbonic esters contain intramolecular N→Si donor–acceptor-supported Si=X systems and relatively strong Si=X π-bonding interactions.

Biosynthesis

C. J. Balibar, C. T. Walsh*

From Thioesters to Amides and Back: Condensation Domain Reversibility in the Biosynthesis of Vibriobactin

ChemBioChem
DOI: **10.1002/cbic.200700485**



Reloaded. In the biosynthesis of vibriobactin, the two condensation domains responsible for catalyzing amide bond formation between three catechol-containing moieties and norspermidine (NS in scheme) to yield the mature siderophore, were found to be reversible, and both were capable of reloading their cognate thiolation domains with the acyl components of their amide products.

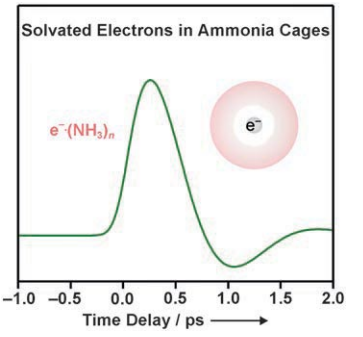
Solvated Electrons

I.-R. Lee, W. Lee, A. H. Zewail*

Dynamics of Electrons in Ammonia Cages: The Discovery System of Solvation

ChemPhysChem
DOI: **10.1002/cphc.200700562**

The dynamics of solvated electrons in ammonia cages, the two-century old discovery system of solvation, is reported. With femtosecond resolution, mass selection, and photoelectron detection, the relaxation of the cage and its coherent dynamics are captured, and the findings are related to the behavior in bulk solutions.

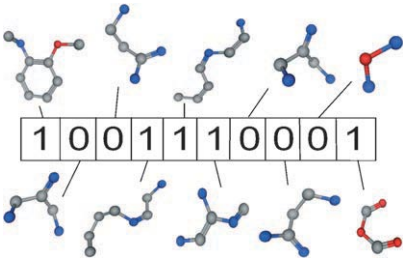


Drug Discovery

J. Batista, J. Bajorath*

Similarity Searching using Compound Class-Specific Combinations of Substructures Found in Randomly Generated Molecular Fragment Populations

ChemMedChem
DOI: **10.1002/cmdc.200700199**



Fine fingerprints. Herein, we show that combinations of randomly generated fragments are signatures of active molecules. Small sets of such fragments are encoded as bit string representations and used for similarity searching. These fingerprints are successfully applied to mine high-throughput screening data sets. Shown are randomly generated substructures encoded as a small fingerprint that were extracted from a fragment pathway specific for cathepsin B inhibitors.

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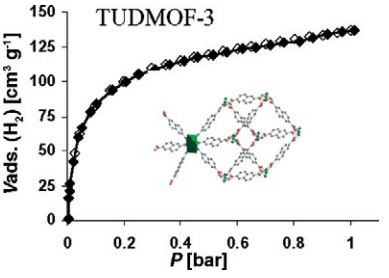


Two new magnesium 2,6-naphthalenedicarboxylate (ndc) metal–organic frameworks, $[Mg_3(ndc)_3(dif)_4]$ (**1**) (dif = *N*,*N*-diisopropylformamide) and $[Mg_3(ndc)_3(dmf)_2(CH_3OH)(H_2O)]$·(dmf) (**2** = TUDMOF-3) (dmf = *N*,*N*-dimethylformamide), have been synthesised. TUDMOF-3 has a permanent porosity with a Langmuir surface area of 632 $m^2 g^{-1}$, a specific pore volume of 0.21 $cm^3 g^{-1}$ and a hydrogen storage capacity of 1.23 wt.-% (77 K, 1 bar). Compound **1** is not porous.

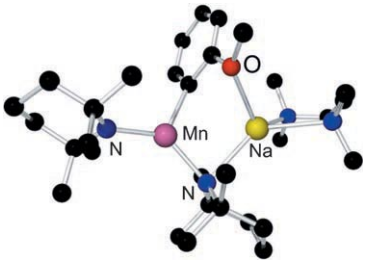
Metal–Organic Frameworks

I. Senkovska, J. Fritsch, S. Kaskel*

New Polymorphs of Magnesium-Based Metal–Organic Frameworks $Mg_3(ndc)_3$ (ndc = 2,6-Naphthalenedicarboxylate)

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200700728**

Direct approach: Circumventing the need for indirect metathetical syntheses, the first direct manganation(II) reactions of functionalised arenes using the sodium–Mn^{II} base [(tmeda)Na(tmp)(R)Mn(tmp)] (TMEDA = *N*,*N*,*N*′,*N*′-tetramethylethylenediamine, TMP = 2,2,6,6-tetramethylpiperidide, R = CH_2SiMe_3) are reported together with the conversion of the crystallographically-characterised *ortho*-manganated intermediates (see figure) thus obtained into unsymmetrical biaryls through Pd-catalysed cross-coupling reactions with iodobenzene.



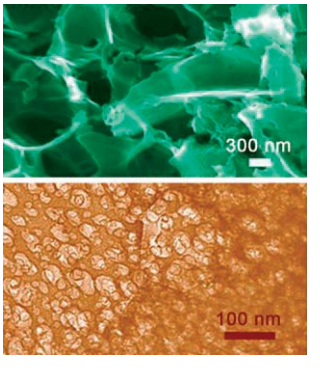
Manganation

V. L. Blair, W. Clegg, B. Conway, E. Hevia, A. Kennedy, J. Klett, R. E. Mulvey,* L. Russo

Alkali-Metal-Mediated Manganation(II) of Functionalized Arenes and Applications of *ortho*-Manganated Products in Pd-Catalyzed Cross-Coupling Reactions with Iodobenzene

Chem. Eur. J.
DOI: **10.1002/chem.200701597**

Electrochemical capacitors: A hierarchical porous graphitic carbon material, composed of macroporous ion-buffering microreservoirs, ion-transporting channels, and localized graphitic wall structures, is presented (see images; top: 3D skeleton, bottom: carbon platelet). The properties of this new material combine to overcome the electrode kinetic problems normally found in electrochemical capacitors, thus resulting in an excellent high-rate energy-storage performance.



Energy Storage

D.-W. Wang, F. Li, M. Liu, G. Q. Lu, H.-M. Cheng*

3D Aperiodic Hierarchical Porous Graphitic Carbon Material for High-Rate Electrochemical Capacitive Energy Storage

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.702721**

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