

# SPOTLIGHTS ...

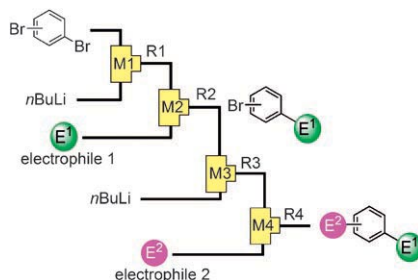
## Micro Flow Synthesis

A. Nagaki, Y. Tomida, H. Usutani,  
H. Kim, N. Takabayashi, T. Nokami,  
H. Okamoto, J.-i. Yoshida\*

### Integrated Micro Flow Synthesis Based on Sequential Br–Li Exchange Reactions of *p*-, *m*-, and *o*-Dibromobenzenes

*Chem. Asian J.*

DOI: 10.1002/asia.200700231



**On... and on... and on...** A variety of *p*-, *m*-, and *o*-disubstituted benzenes can be synthesized based on the Br–Li exchange reaction of the corresponding dibromobenzene by using a micro flow system. This method allows the use of much higher temperatures than are required for conventional macro batch systems.

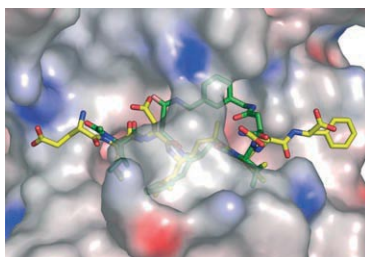
## Inhibitors

A. Barazza, M. Götz,  
S. A. Cadamuro, P. Goettig,  
M. Willem, H. Steuber, T. Kohler,  
A. Jestel, P. Reinemer, C. Renner,  
W. Bode, L. Moroder\*

### Macrocyclic Statine-Based Inhibitors of BACE-1

*ChemBioChem*

DOI: 10.1002/cbic.200700383



**Hitting BACE.** A 23-membered macrocyclic inhibitor of BACE-1 containing statine as a transition state analogue in the ring structure (green) was found to bind with the peptide backbone in an extended conformation to the active-site cleft, in a manner almost identical to that of a substrate-derived linear hydroxyethylene-octapeptide (yellow), without steric clashes with the flap domain.

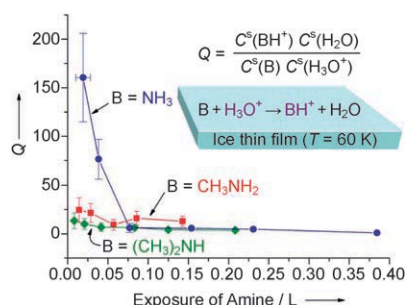
## Acid/Base Chemistry

S.-C. Park, J.-K. Kim, C.-W. Lee,  
E.-S. Moon, H. Kang\*

### Acid–Base Chemistry at the Ice Surface: Reverse Correlation Between Intrinsic Basicity and Proton-Transfer Efficiency to Ammonia and Methyl Amines

*ChemPhysChem*

DOI: 10.1002/cphc.200700489



**On thin ice:** A surface-sensitive mass spectrometric method quantifies the efficiency of proton transfer from the hydronium ion to amine molecules (B) at the ice surface. The proton-transfer efficiency defined by reaction quotient *Q* (see figure), exhibits the order  $\text{NH}_3 > (\text{CH}_3)\text{NH}_2 = (\text{CH}_3)_2\text{NH}$ , which opposes the trend of amine basicity in the gas phase or aqueous solution.

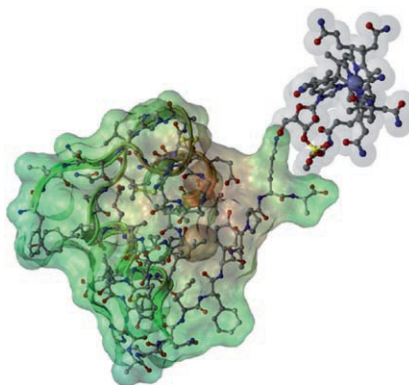
## Bioconjugates

A. K. Petrus, A. R. Vortherms,  
T. J. Fairchild,\* R. P. Doyle\*

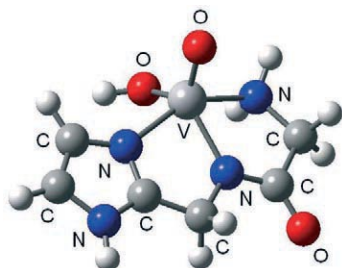
### Vitamin B<sub>12</sub> as a Carrier for the Oral Delivery of Insulin

*ChemMedChem*

DOI: 10.1002/cmdc.200700239



**The noninvasive delivery of insulin** continues to be a major goal for the treatment of diabetes mellitus. Oral–enteric administration would make insulin delivery easier and more effective, as higher patient compliance and improved glycemic control are likely; yet the oral–enteric pathway has been unfeasible owing to insulin’s susceptibility to proteolytic degradation and inefficient enteric uptake. Herein we show that a noninvasive oral delivery route for insulin is possible through the vitamin B<sub>12</sub> uptake pathway. In diabetic rat models, insulin–B<sub>12</sub> conjugates can significantly lower blood glucose levels when administered orally.



Simple bis(imidazol-2-yl) derivatives form mono- and bis-chelate complexes under acidic and neutral conditions with the  $V^{IV}O$  ion. The bis-chelates show *cis-trans* isomerism. With bis(imidazol-2-yl) amino acid derivatives the complexation process takes place also in the basic pH range with the deprotonation and coordination of the amide nitrogen to give  $VOLH_1$  and  $VOLH_2$ .

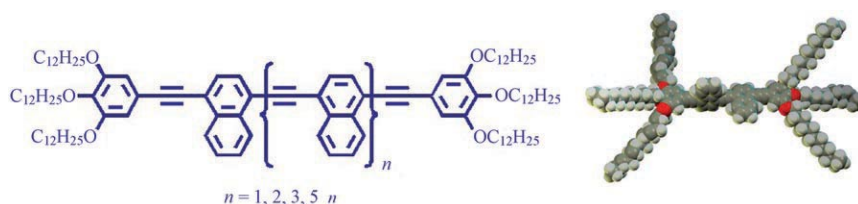
#### Vanadium Coordination Chemistry

K. Várnagy, T. Csorba, D. Kiss, E. Garribba,\* G. Micera,\* D. Sanna

#### $V^{IV}O$ Complexes of Bis(imidazol-2-yl) Derivatives: A Potentiometric, Spectroscopic and DFT Study

*Eur. J. Inorg. Chem.*

DOI: [10.1002/ejic.200700502](https://doi.org/10.1002/ejic.200700502)



**Spare the rod but don't spoil the triplet!** Increasing the length of supposedly highly conjugated molecular rods does not necessarily lead to a lowering

of their spectroscopic triplet energies. The synthesis and characterization of molecular rods, such as depicted, is also described.

#### Conducting Polymers

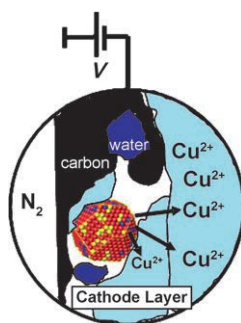
A. C. Benniston,\* A. Harriman,\* D. B. Rewinska, S. Yang, Y.-G. Zhi

#### On the Conjugation Length for Oligo(ethynynaphthalene)-Based Molecular Rods

*Chem. Eur. J.*

DOI: [10.1002/chem.200701235](https://doi.org/10.1002/chem.200701235)

**Getting rid of copper:** A class of ternary Pt–Cu–Co electrocatalysts for the reduction of oxygen in polymer electrolyte membrane fuel cells shows unprecedented activity improvements over state-of-the-art Pt catalysts. The active phase of the catalysts is synthesized by selective electrochemical dissolution (dealloying, see picture) of Cu-rich alloy-particle precursors, resulting in Pt-enriched core-shell particles.



#### Electrocatalysis

R. Srivastava, P. Mani, N. Hahn, P. Strasser\*

#### Efficient Oxygen Reduction Fuel Cell Electrocatalysis on Voltammetrically Dealloyed Pt–Cu–Co Nanoparticles

*Angew. Chem. Int. Ed.*

DOI: [10.1002/anie.200703331](https://doi.org/10.1002/anie.200703331)



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