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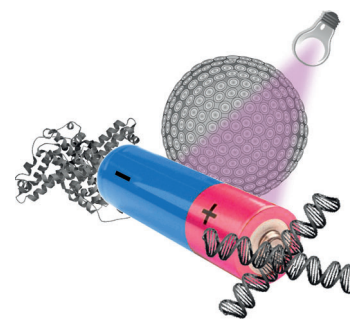


### Self-Assembly

J. Moratz, A. Samanta, J. Voskuhl, S. K. Mohan Nalluri, B. J. Ravoo\*

Light-Triggered Capture and Release of DNA and Proteins by Host–Guest Binding and Electrostatic Interaction

**Cyclodextrin vesicles** bind charged biomolecules, such as DNA or proteins, in the presence of light-responsive charged guest molecules. The complexes can be disassembled under UV-light irradiation based on *trans/cis* isomerization of the azobenzene guests (see figure).



Chem. Eur. J.  
DOI: 10.1002/chem.201405936

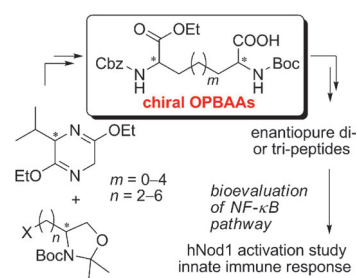


### Peptides

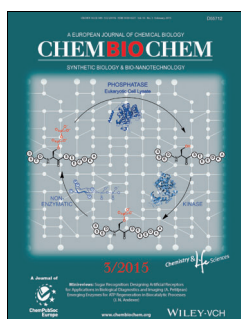
P.-T. Chen, C.-K. Lin, C.-J. Tsai, D.-Y. Huang, F.-Y. Nien, W.-W. Lin, W.-C. Cheng\*

Expeditious Synthesis of Enantiopure, Orthogonally Protected Bis- $\alpha$ -Amino Acids (OPBAAs) and their Use in a Study of Nod1 Stimulation

**Give it a nod:** A concise preparation of structurally diverse OPBAAs bearing three orthogonally protecting groups and a spacer of varied length has been developed. Using these versatile building blocks, a series of small peptides inspired from peptidoglycan fragments were synthesized and then studied for their ability to activate human Nod1 receptor in the innate immune response through the NF- $\kappa$ B pathway.



Chem. Asian J.  
DOI: 10.1002/asia.201403173

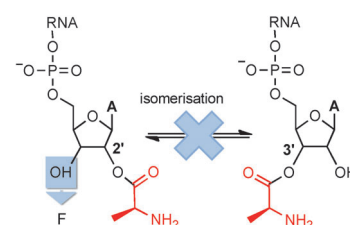


### Non-Ribosomal Peptides

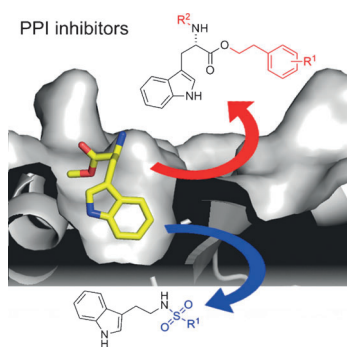
L. Iannazzo, G. Laisné, M. Fonvielle, E. Braud, J.-P. Herbeuval, M. Arthur, M. Etheve-Quelejeu\*

Synthesis of 3'-Fluoro-tRNA Analogues for Exploring Non-ribosomal Peptide Synthesis in Bacteria

**Fluorinated aminoacyl-tRNA analogues:** Semisynthetic routes to fluoro analogues of tRNA<sup>Ala</sup> and Ala-tRNA<sup>Ala</sup> have been developed. These molecules are non-isomerisable analogues of the substrates of alanyl-tRNA synthetases and FemX transferases and should provide new insight into substrate recognition by these enzymes.



ChemBioChem  
DOI: 10.1002/cbic.201402523



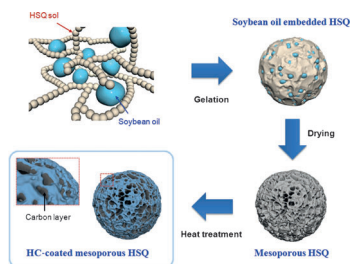
ChemMedChem  
DOI: 10.1002/cmdc.201402428

### Protein-Protein Interactions

D. E. Scott, A. G. Coyne, A. Venkitaraman, T. L. Blundell, C. Abell, M. Hyvönen\*

Small-Molecule Inhibitors That Target Protein–Protein Interactions in the RAD51 Family of Recombinases

**FxxA in the crosshairs:** Herein we report two lead series of small molecules chemically elaborated from indole-containing fragments that bind to the surface of a humanised RAD51 orthologue. Our most potent compounds possess single-digit micromolar potency and target the FxxA binding site of the protein–protein interaction with BRCA2.



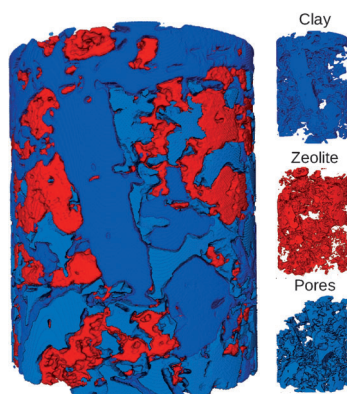
ChemSusChem  
DOI: 10.1002/cssc.201402907

### Batteries

E. Park, M.-S. Park,\* J. Lee, K. J. Kim, G. Jeong, J. H. Kim, Y.-J. Kim, H. Kim\*

A Highly Resilient Mesoporous SiO<sub>x</sub> Lithium Storage Material Engineered by Oil–Water Templating

**All's well with oil:** Carbon-coated porous SiO<sub>x</sub> is synthesized by a facile and scalable approach, that is, a sol–gel reaction of hydrogen silsesquioxane together using oil–water templating. A hydrophobic oil is used as both, a pore former inside the SiO<sub>x</sub> matrix and a precursor for carbon encapsulation on the surface of SiO<sub>x</sub>. The resulting anode material exhibits a high reversible capacity and outstanding cycling performance over 100 cycles without significant dimensional changes.



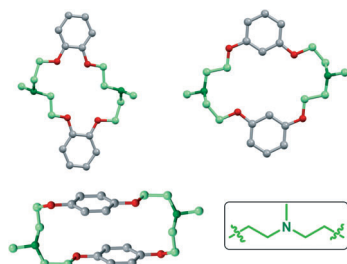
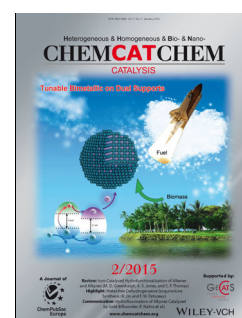
ChemCatChem  
DOI: 10.1002/cctc.201402925

### Catalyst Analysis

J. C. da Silva,\* K. Mader, M. Holler, D. Haberthür, A. Diaz, M. Guizar-Sicairos, W.-C. Cheng, Y. Shu, J. Raabe, A. Menzel, J. A. van Bokhoven\*

Assessment of the 3D Pore Structure and Individual Components of Preshaped Catalyst Bodies by X-Ray Imaging

**Catalyst bodies in 3D:** The assessment of the 3D pore structure and components of catalyst bodies in the nanoscale is crucial to understand the fluid catalytic-cracking process (FCC). Modern X-ray imaging techniques allow visualization and quantification of the 3D pore structure, as well as the material components of FCC catalyst bodies, at this critical scale. These techniques help to improve the manufacture of these catalyst bodies by tuning the pore size and connectivity in a controlled manner.



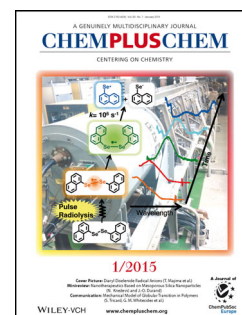
ChemPlusChem  
DOI: 10.1002/cplu.201402299

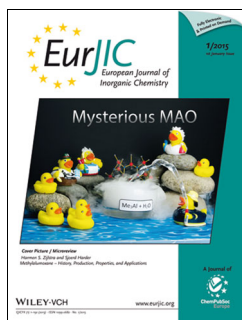
### Diaza Crown Ethers

F. Aricò,\* I. Udrea, M. Crisma, P. Tundo

Azacrown Ethers from Mustard Carbonate Analogues

**Crowning glory:** Several diazacrown ethers incorporating nitrogen mustard moieties have been prepared by treating harmless mustard carbonates with aromatic diols in the absence of any base under pseudo-high dilution conditions (see scheme). This novel synthesis relied upon the anchimeric effect of the nitrogen mustard carbonate.



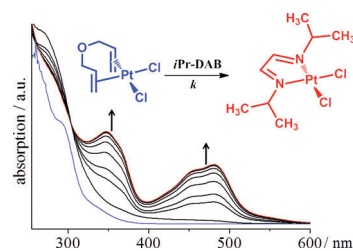


### Cytotoxic Organoplatinum Complexes

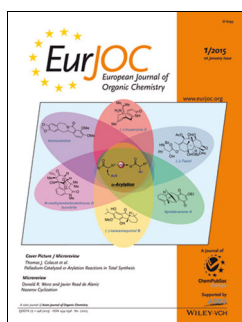
A. Lüning, M. Neugebauer, V. Lingen, A. Krest, K. Stirnat, G. B. Deacon, P. R. Drago, I. Ott, J. Schur, I. Pantenburg, G. Meyer, A. Klein\*

Platinum Diolefin Complexes – Synthesis, Structures, and Cytotoxicity

Organometallic diolefin platinum(II) complexes  $[(\eta^2\text{PtCl}_2)]$ ,  $[(\eta^2\text{Pt(R)(L)})]$  and  $[(\eta^2\text{Pt(R)}_2)]$  are synthesised and characterised. Cytotoxicity experiments (HT-29 and MCF-7 cancer cell lines) show that the introduction of labile diolefin ligands  $\eta^2$  or labile coligands does not lead to increased cytotoxicity compared with that of the established 1,5-cyclooctadiene derivatives.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201402954

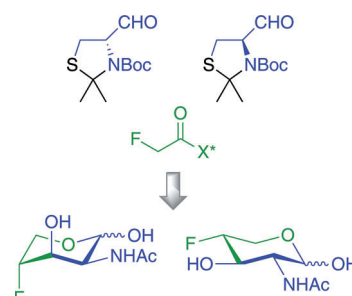


### Ti-Mediated Aldol Addition

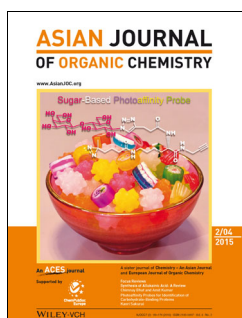
C. Albler, W. Schmid\*

From Amino Acids to Fluorine-Containing Carbohydrates: De Novo Synthesis of 2-Amino-4-Fluoroxylucose and -lyxose

Fluorinated derivatives of amino-xylose and -lyxose have been prepared by aldolization of D- and L-cysteine-derived aldehydes and a fluoroacetyl ephedrine oxazolidinone auxiliary. Photochemical Pummerer-type rearrangement followed by acidic cleavage of the protecting groups subsequently furnished the title compounds in overall yields of 47–48% over four steps.



*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201403532

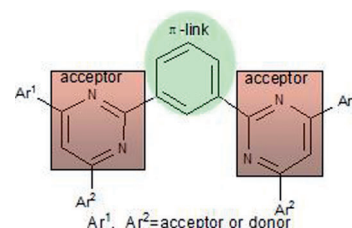


### Organic Electronics

G. Song, R. Liu, G. He, S. Yuan, H. Zhu\*

Synthesis, Photophysics, and Electronic Structures of Benzene-Linked Bispypyrimidine Compounds

**Two or tree?** Seven multidipole and multibranch benzene-linked bispypyrimidine derivatives containing a two-layer binary tree structure have been designed, synthesized, and characterized. Their photophysics and transient difference absorption properties as well as DFT calculations suggest these compounds may be used as optical limiting material.



*Asian J. Org. Chem.*  
DOI: 10.1002/ajoc.201500009



### Science Communication

Y. Liang

The Beauty of Chemistry

*ChemViews Magazine* highlights “Beautiful Chemistry”, a project that aims to display the unique beauty and wonder of chemistry. It has been created by researchers at the University of Science and Technology of China and shows stunning photos and videos of chemical reactions and structures - fascinating for both chemists and the general public.



*ChemViews magazine*  
DOI: 10.1002/chemv.201400132