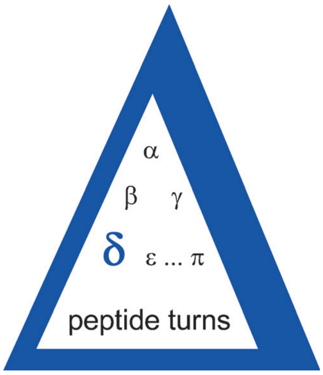
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Conformational Analysis

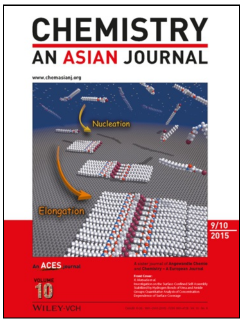
C. Toniolo,* M. Crisma, A. Moretto, C. Peggion, F. Formaggio, C. Alemán, C. Cativiela, C. Ramakrishnan, P. Balaram

Peptide δ-Turn: Literature Survey and Recent Progress

***cis*-Peptide turn, turn, turn**: Published results on peptide δ-turn conformation, characterized by a *cis*-amide bond and an intramolecularly H bonded, eight-membered pseudo-cyclic structure, are reviewed. Recent advancements in our laboratories on this rarely investigated, local folded structure are also presented.



Chem. Eur. J.
DOI: **10.1002/chem.201501467**

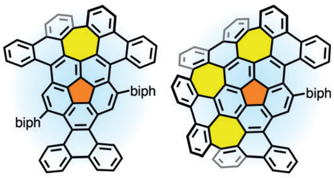


Nanocarbons

K. Kato, Y. Segawa,* L. T. Scott, K. Itami*

Synthesis, Properties, and Packing Structures of Corannulene-Based π-Systems Containing Heptagons

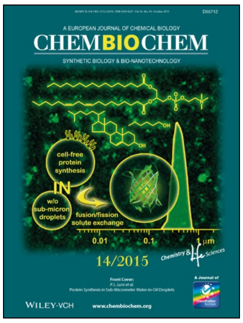
Seven beats six: We have synthesized and characterized two corannulene-based π-systems containing heptagons (**4** and **5**) as new negatively curved polycyclic aromatic hydrocarbons as well as possible intermediates in the synthesis of warped nanographene **1**. We also discovered that the mode and degree of solid-phase intermolecular π–π interaction can be altered significantly by the degree of ring closure.



5-6-7 fused π-system

intermediates of warped nanographene
fast formation of seven-membered rings
concave-convex π-π stacking

Chem. Asian J.
DOI: **10.1002/asia.201500560**

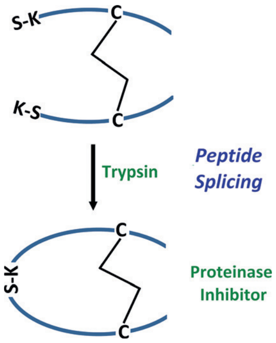


Peptide Splicing

N. Karna, A. Łęgowska,* S. Malicki, D. Dębowski, P. Golik, A. Gitlin, P. Grudnik, B. Wladyka, K. Brzozowski, G. Dubin, K. Rolka

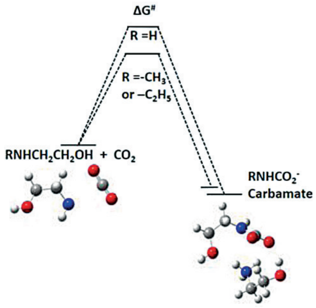
Investigation of Serine-Proteinase-Catalyzed Peptide Splicing in Analogues of Sunflower Trypsin Inhibitor 1 (SFTI-1)

We report that peptide splicing catalyzed by trypsin proceeds according to the direct transpeptidation model. We used a combination of biochemical, NMR, and X-ray crystal structure analysis. The outcome of the proteolysis depends on the amount of the enzyme.



ChemBioChem
DOI: **10.1002/cbic.201500296**

Quantum Chemistry

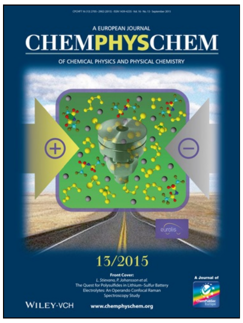


S. Gangarapu, A. T. M. Marcelis, Y. A. Alhamed, H. Zuilhof*

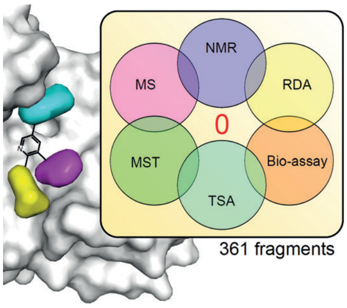
The Transition States for CO_2 Capture by Substituted Ethanolamines

Catch me while you can: Quantum chemical studies are used to understand the electronic and steric effects on the mechanisms of the reaction of substituted ethanolamines with CO_2. Carbamate formation is more favorable than bicarbonate formation for monoethanolamine (MEA), but substitution by an *N*-methyl or *N*-ethyl group on MEA leads to a lower activation barrier for both carbamate and bicarbonate formation. Therefore these compounds have significant potential as industrial CO_2 capturing solvents.

ChemPhysChem
DOI: **10.1002/cphc.201500511**



Drug Discovery

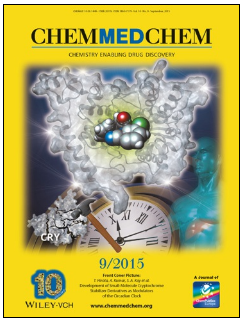


J. Schiebel, N. Radeva, H. Köster, A. Metz, T. Krotzky, M. Kuhnert, W. E. Diederich, A. Heine, L. Neumann, C. Atmanene, D. Roecklin, V. Vivat-Hannah, J.-P. Renaud, R. Meinecke, N. Schlinck, A. Sitte, F. Popp, M. Zeeb, G. Klebe*

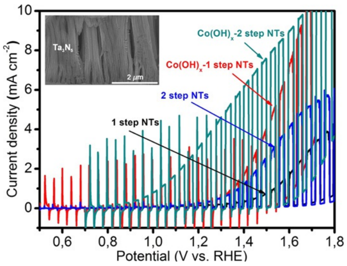
One Question, Multiple Answers: Biochemical and Biophysical Screening Methods Retrieve Deviating Fragment Hit Lists

One question, multiple answers: Fragment-based lead discovery depends on structural information about target–fragment complexes and, therefore, on reliable screening methods used to select a subset of small molecules that are analyzed by X-ray crystallography. A comprehensive screening campaign on a single protease target, however, revealed a disappointingly low overlap between the results of the six applied assays with no single common hit.

ChemMedChem
DOI: **10.1002/cmdc.201500267**



Water Splitting

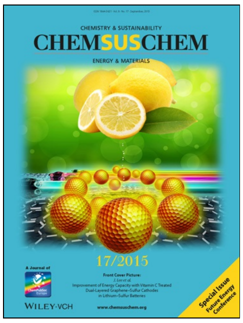


L. Wang, N. T. Nguyen, X. Zhou, I. Hwang, M. S. Killian, P. Schmuki*

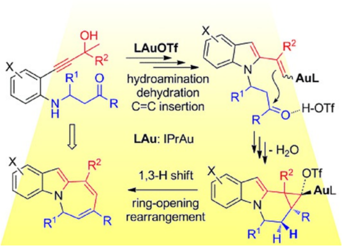
Enhanced Charge Transport in Tantalum Nitride Nanotube Photoanodes for Solar Water Splitting

Catching a Ta_3N_5: Layers of Ta_3N_5 nanotubes grown by a two-step anodization process show not only improved order and enhanced overall light absorption in the nanotube layers, but also provide a significantly reduced interface charge resistance at the nitride/metal interface due to subnitride (TaN_x) formation. Such nanotube anodes afford a 15-fold increase of the photocurrent compared with conventional nanotubular tantalum nitride electrodes under simulated sunlight conditions.

ChemSusChem
DOI: **10.1002/cssc.201500632**



Gold Catalysis

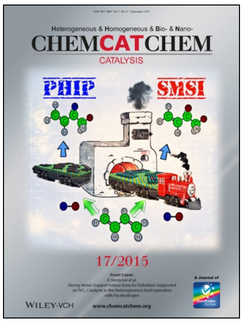


P. Giacinto, G. Cera, A. Bottoni, M. Bandini,* G. P. Miscione*

DFT Mechanistic Investigation of the Gold(I)-Catalyzed Synthesis of Azepino[1,2-*a*]indoles

Gold rings: We describe a computational DFT investigation on the mechanism of the one-pot synthesis of azepino-indoles catalyzed by [Au(IPr)Cl]/AgOTf (IPr = 1,3-bis(2,6-diisopropylphenyl-imidazol-2-ylidene) by the simultaneous construction of the pyrrolyl and seven-membered rings.

ChemCatChem
DOI: **10.1002/cctc.201500429**

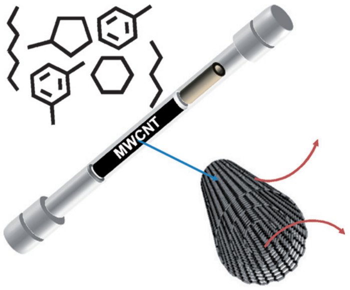


Volatile Organic Compounds

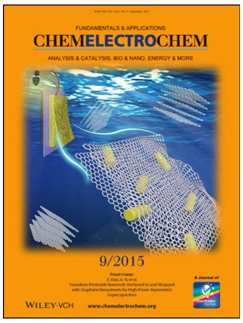
G. K. S. Wong, L. Z. Lim, M. J. W. Lim, L. L. Ong, B. Khezri,
M. Pumera, R. D. Webster*

Evaluation of the Sorbent Properties of Single- and Multiwalled Carbon Nanotubes for Volatile Organic Compounds through Thermal Desorption–Gas Chromatography/Mass Spectrometry

Reversible and irreversible adsorption: The adsorption/desorption properties of CNTs for a range of common atmospheric volatile organic compounds (VOCs) were found to be similar to standard sorbents such as Tenax TA and Carbopack X. The major exception was carbonyl-containing VOCs which underwent irreversible binding on the CNTs even at elevated desorption temperatures.



ChemPlusChem
DOI: **10.1002/cplu.201500070**

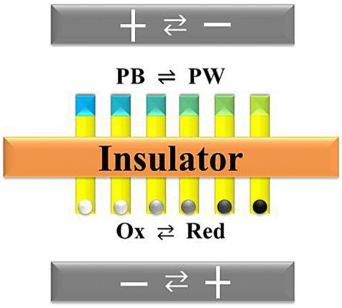


Electrocatalysis

X. Zhang, C. Shang, W. Gu, Y. Xia, J. Li,* E. Wang*

A Renewable Display Platform Based on the Bipolar Electrochromic Electrode

Pole dancer: A renewable closed bipolar electrochromic imaging platform for the high-throughput analysis of electrocatalysis is presented. The established platform can be used repeatedly, owing to the reversibility of the electrochromic reactions. With this strategy, the fast imaging analysis of several electrocatalysts for methanol and ethanol oxidation is demonstrated.



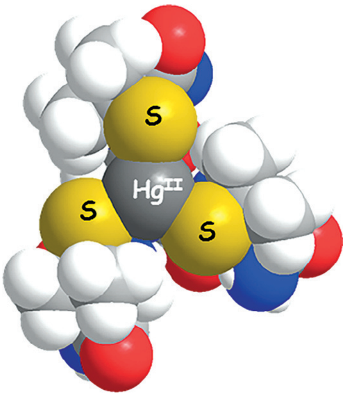
ChemElectroChem
DOI: **10.1002/celc.201500282**

Metal Chelating Agents

A.-S. Jullien, C. Gateau, C. Lebrun, P. Delangle*

Mercury Complexes with Tripodal Pseudopeptides Derived from D-Penicillamine Favour a HgS$_3$ Coordination

Tripodal pseudopeptides anchored on a nitrilotriacetic chemical scaffold and extended with three D-penicillamine units stabilize the unusual HgS$_3$ coordination over a large pH range in a hindered coordination environment.



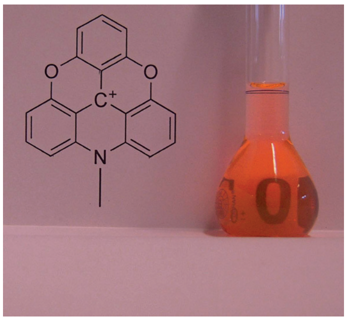
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201500421**

Fluorescent Probes

I. Bora, S. A. Bogh, M. Santella, M. Rosenberg, T. J. Sørensen,*
B. W. Laursen*

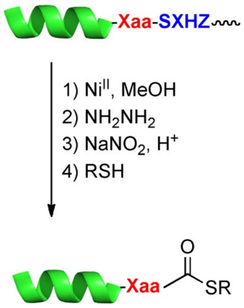
Azadioxatriangulenium: Synthesis and Photophysical Properties of Reactive Dyes for Bioconjugation

Azadioxatriangulenium or ADOTA has been synthesized with reactive groups for conjugation to amino and thiol groups of biomolecules. The long fluorescence lifetime of the red ADOTA dye allows for new developments in florescence polarization assays, enabled by the detailed account of the synthesis of four ADOTA derivatives presented here.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201500888**

Peptide Synthesis



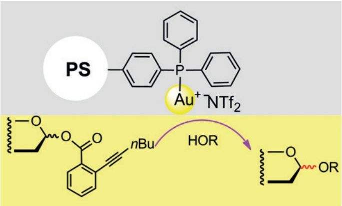
Y. Tsuda, A. Shigenaga, K. Tsuji, M. Denda, K. Sato, K. Kitakaze, T. Nakamura, T. Inokuma, K. Itoh, A. Otaka*

Development of a Chemical Methodology for the Preparation of Peptide Thioesters Applicable to Naturally Occurring Peptides Using a Sequential Quadruple Acyl Transfer System

SQATs: Peptide thioesters are an important compound class in peptide chemistry, but chemistry-based protocols to synthesize natural-peptide-based thioesters are challenging. Here, a sequential quadruple acyl transfer (SQAT) protocol is described for the preparation of thioesters. Importantly, the SQAT system can be applied to naturally occurring peptides, converting them to their corresponding thioesters without the need for an artificial chemical unit.

ChemistryOpen
DOI: **10.1002/open.201500086**

Glycosylation

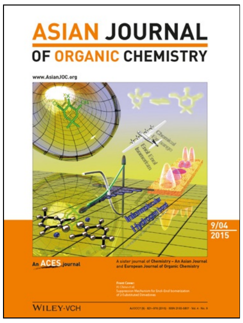


Y. Zhu, S. Laval, Y. Tang, G. Lian,* B. Yu*

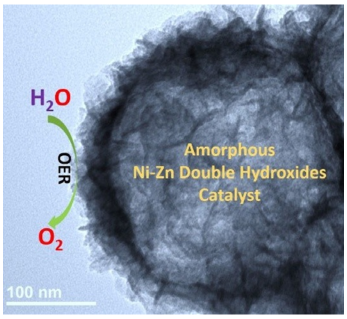
A Polystyrene-Bound Triphenylphosphine Gold(I) Catalyst for the Glycosylation of Glycosyl *ortho*-Hexynylbenzoates

Golden couple: A polystyrene-bound triphenylphosphine gold(I) catalyst has been synthesized and fully characterized. Its catalytic activity and recyclability have been demonstrated in the heterogeneously promoted glycosylation reaction with glycosyl *ortho*-hexynylbenzoate donors. High and reproducible yields were obtained and the heterogeneous catalyst could be reused for 11 cycles without significant loss of activity. Tf = trifluoromethanesulfonyl.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201500276**



Electrocatalysis



S. Wang, J. Nai, S. Yang, L. Guo*

Synthesis of Amorphous Ni–Zn Double Hydroxide Nanocages with Excellent Electrocatalytic Activity toward Oxygen Evolution Reaction

Highly efficient amorphous Ni–Zn double hydroxide nanocages as electrocatalysts for the oxygen evolution reaction were prepared through a co-precipitation method with Cu_2O nanocrystal as sacrificial templates. $Ni_{2.7}Zn(OH)_x$ with impressive activity and superior stability was the optimal composition of these samples. This research may provide a method for rational design of the composition of bimetallic hydroxides for optimal electrocatalytic performance.

ChemNanoMat
DOI: **10.1002/cnma.201500067**

Science Communication

V. Köster

Writing for Scientists

The pressure on scientists to communicate their research, publish ever more papers, and engage on social media is increasing. Training in scientific writing and communication, especially for young scientists, is essential. To celebrate *ChemistryViews.org's* five year anniversary, we showcase some of the most interesting contributions on this topic from our archives.

ChemViews magazine
DOI: **10.1002/chemv.201500078**