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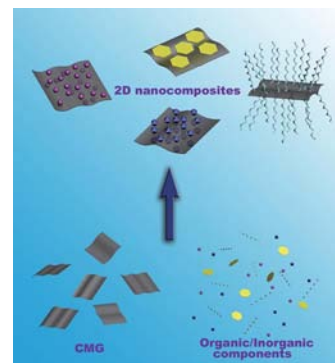


Graphene

D. Wu, F. Zhang, P. Liu, X. Feng*

Two-Dimensional Nanocomposites Based on Chemically Modified Graphene

Hello, flat world! Due to the presence of multifunctional groups and flat morphology with nm thin thickness, chemically modified graphene (CMG) is regarded as an ideal template for the construction of two-dimensional nanocomposites with various functions. This Concept article will introduce the recent achievements in the bottom-up fabrication of CMG based 2D nanocomposites, which represent the new directions in material sciences.



Chem. Eur. J.
DOI: 10.1002/chem.201101333

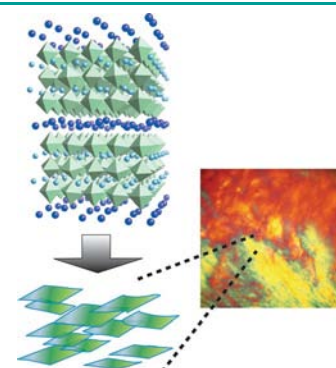


Nanosheets

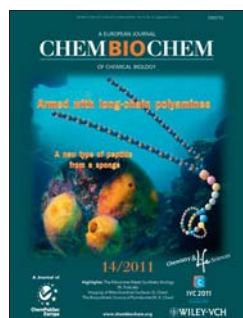
N. Miyamoto,* S. Yamamoto, K. Shimasaki, K. Harada, Y. Yamauchi

Exfoliated Nanosheets of Layered Perovskite $\text{KCa}_2\text{Nb}_3\text{O}_{10}$ as an Inorganic Liquid Crystal

Three nanosheets to the wind: A liquid-crystal phase in the condensed colloids of semiconductor nanosheets of a layered perovskite $\text{Ca}_2\text{Nb}_3\text{O}_{10}^-$ was synthesized and characterized. Their properties and functionalities are tunable for further fundamental studies and potential applications as smart soft materials.



Chem. Asian J.
DOI: 10.1002/asia.201100279

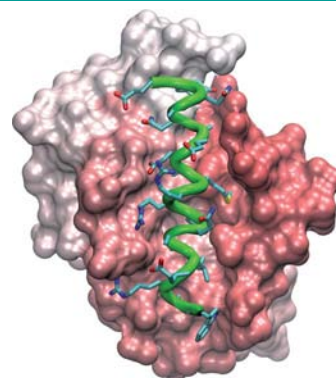


Apoptosis

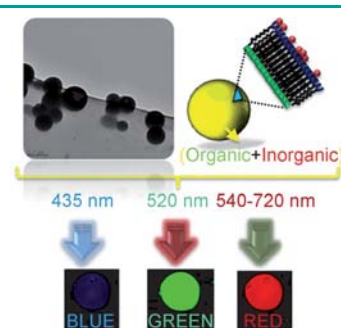
E. F. Lee, B. J. Smith, W. S. Horne, K. N. Mayer, M. Evangelista, P. M. Colman, S. H. Gellman,* W. D. Fairlie*

Structural Basis of Bcl-x_L Recognition by a BH3-Mimetic α/β -Peptide Generated by Sequence-Based Design

Killer mimetic structure: We report a crystal structure of anti-apoptotic protein Bcl-x_L bound to a BH3-mimetic oligomer composed of α - and β -amino acid residues, and complementary biochemical data. The structure reveals how an α/β -peptide, developed by using a sequence-based design, can accurately mimic an α -helical prototype (see figure).



ChemBioChem
DOI: 10.1002/cbic.201100314



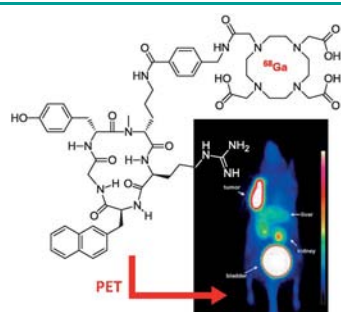
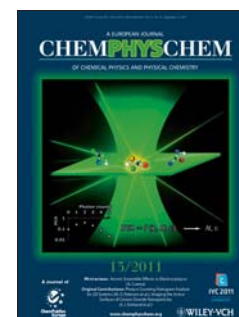
Triple Emitting Hybrid Soft Nanovesicles
ChemPhysChem
DOI: 10.1002/cphc.201100426

Luminescent Nanostructures

Y. S. L. V. Narayana, R. Chandrasekar*

Triple Emission from Organic/Inorganic Hybrid Nanovesicles in a Single Excitation

Luminescent Vesicles: Triple-color-emitting organic/inorganic nanovesicles are successfully prepared through a stepwise self-assembly approach. This innovative “bottom-up” methodology can be used to fabricate multi-luminescent soft organic/inorganic hybrid nanostructures displaying diverse colors.



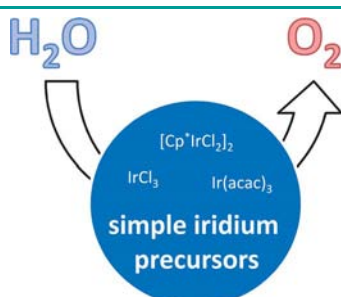
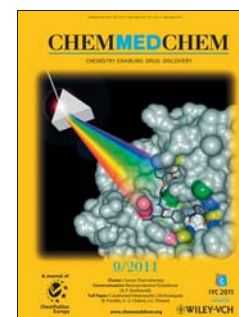
ChemMedChem
DOI: 10.1002/cmdc.201100320

Imaging Agents

O. Demmer, E. Gourni, U. Schumacher, H. Kessler,*
H.-J. Wester*

PET Imaging of CXCR4 Receptors in Cancer by a New Optimized Ligand

CXCR4 Imaging: Based on a high-affinity CXCR4 ligand, an imaging agent for CXCR4-positive tumors was developed through structure–activity relationship studies. The best compound was evaluated in vivo and shown to have excellent properties as a positron emission tomography (PET) tracer.



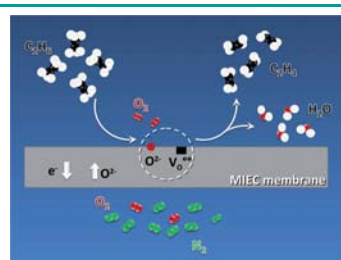
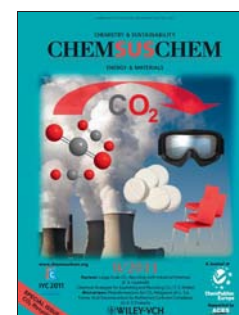
ChemSusChem
DOI: 10.1002/cssc.201100217

Water Splitting

N. Marquet, F. Gärtner, S. Losse, M.-M. Pohl, H. Junge,
M. Beller*

Simple and Efficient Iridium(III)-Catalyzed Water Oxidations

The complex made simple: Simple and commercially available iridium precursors are tested for their ability to promote water oxidation. The activity values of these precursors towards cerium(IV)-driven oxygen generation from water are comparable with values reported for more complicated iridium-based systems. A turnover frequency of 1700 h⁻¹ is achieved with IrCl₃.



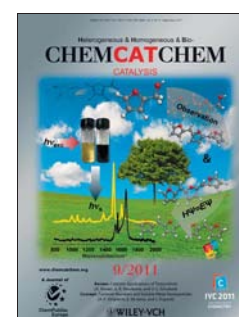
ChemCatChem
DOI: 10.1002/cctc.201100055

Dehydrogenation

M. P. Lobera, S. Escolástico, J. M. Serra*

High Ethylene Production through Oxidative Dehydrogenation of Ethane Membrane Reactors Based on Fast Oxygen-Ion Conductors

Straight on through to the other side: Catalytic membrane reactors based on solid-state oxygen conductors enabled us to achieve high ethylene productivity through the oxidative dehydrogenation of ethane. The selectivity is maximized by preventing the direct contact of molecular oxygen and hydrocarbons, by properly selecting the temperature and inlet gas flow rates, and by using methane as a diluting agent.



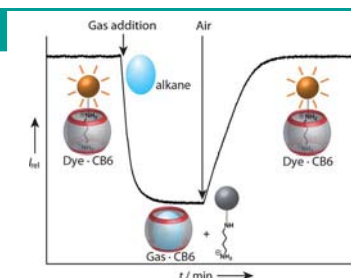


Supramolecular Chemistry

M. Florea, W. M. Nau*

Strong Binding of Hydrocarbons to Cucurbituril Probed by Fluorescent Dye Displacement: A Supramolecular Gas-Sensing Ensemble

Hydrocarbons are no longer afraid of water when they are reversibly encapsulated by cucurbituril (see picture). The pumpkin-shaped molecular container displays a high affinity and selectivity towards neutral molecules in salt-free aqueous solutions. A supramolecular sensing ensemble, composed of cucurbit[6]uril and an anchored indicator dye, is introduced as a highly sensitive fluorescence-based online detection tool for gas binding in solution.



Angew. Chem. Int. Ed.
DOI: 10.1002/anie.201104119

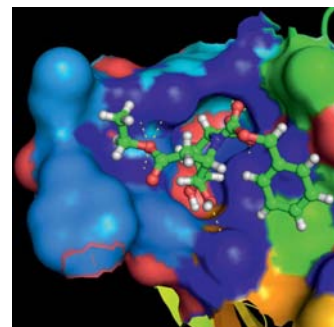


Iminosugar Inhibitors

A. Orsato, E. Barbagallo, B. Costa, S. Olivieri, L. De Gioia, F. Nicotra, B. La Ferla*

Iminosugar Analogues of Phosphatidyl Inositol as Potential Inhibitors of Protein Kinase B (Akt)

A small virtual library of iminosugar-based Akt inhibitors have been designed and evaluated by using docking calculations. Selected compounds have been conveniently synthesised, and preliminary biological evaluation identified compound **9** as a possible lead compound for further development of iminosugar-based Akt inhibitors.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201100452

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