

Hybrid Nanoparticles

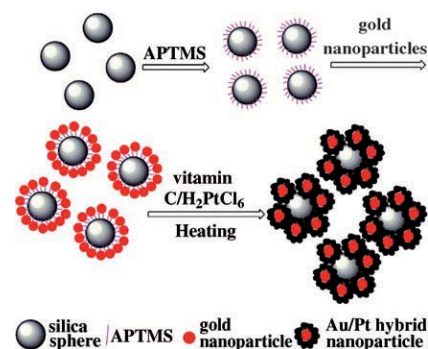
S. Guo, J. Zhai, Y. Fang, S. Dong,
E. Wang*

**Nanoelectrocatalyst Based on
High-Density Au/Pt Hybrid
Nanoparticles Supported on a Silica
Nanosphere**

Chem. Asian J.
DOI: 10.1002/asia.200700422

Good things come in small packages:

A high-efficiency nanoelectrocatalyst based on high-density Au/Pt hybrid nanoparticles supported on a silica nanosphere (Au-Pt/SiO₂) can be prepared easily by a wet chemical process. This Au-Pt/SiO₂ nanostructure exhibits a high electrocatalytic activity for oxygen reduction and methanol oxidation, making it an interesting candidate for application in fuel cells. APTMS = (3-aminopropyl)trimethoxysilane.

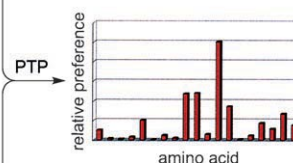


Combinatorial Libraries

S. Mitra, A. M. Barrios*

**Identifying Selective Protein Tyrosine
Phosphatase Substrates and Inhibitors
from a Fluorogenic, Combinatorial
Peptide Library**

ChemBioChem
DOI: 10.1002/cbic.200800046



Selective substrate:
Ac-FnGA-pCAP-QLEE-NH₂
Selective inhibitor:
Ac-FnGA-F₂Pmp-QLEE-NH₂

Protein tyrosine phosphatases are increasingly recognized as enzymes that exhibit exquisite substrate selectivity with important roles in cellular signaling, and have been identified as attractive therapeutic targets in human dis-

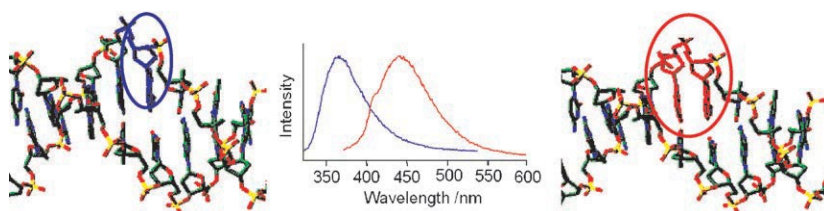
eases including autoimmunity, obesity, diabetes, and cancer. A new approach was developed to rapidly and efficiently profile the substrate selectivity of protein tyrosine phosphatase and is described herein.

DNA Dimers

E. Y. M. Bonnist, A. C. Jones*

**Long-Wavelength Fluorescence from
2-Aminopurine-Nucleobase Dimers in
DNA**

ChemPhysChem
DOI: 10.1002/cphc.200700813



Illuminating interactions: A fluorescent analogue of adenine illuminates interbase interactions in DNA. Long-wavelength spectra arise from the for-

mation of a ground-state heterodimer with an adjacent π -stacked, natural base, in addition to the familiar short-wavelength spectra (see figure).

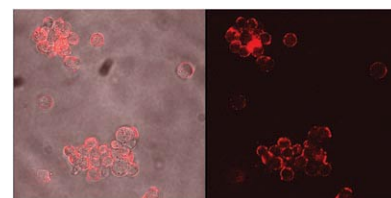
Imaging Agents

H. W. Chen, C. D. Medley, K. Sefah,
D. Shangguan, Z. Tang, L. Meng,
J. E. Smith, W. Tan*

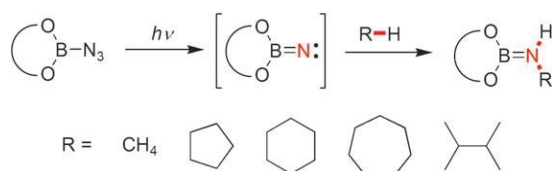
**Molecular Recognition of Small-Cell
Lung Cancer Cells Using Aptamers**

ChemMedChem
DOI: 10.1002/cmdc.200800030

Early diagnosis is the key for lung cancer survival. Novel aptamer-based molecular probes were developed for the recognition of specific small-cell lung cancer (SCLC) cell-surface molecular markers. They show high affinity and specificity in various assay formats. This approach shows the potential for early lung cancer detection.



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C–H insertion: Borylnitrenes, which are generated in situ by photolysis of azides, convert unactivated alkanes by intermolecular C–H insertion into aminoboranes (see scheme), which in turn can be reacted further to give

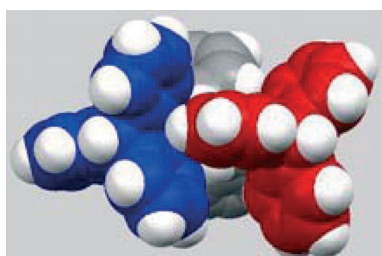
amines or amides. The boryl group serves two purposes: it converts the nitrene into a highly reactive BN vinylidene analogue, and it is easily cleaved from the product.

Alkane Activation

H. F. Bettinger,* M. Filthaus,
H. Bornemann, I. M. Oppel

Metal-Free Conversion of Methane and Cycloalkanes to Amines and Amides By Employing a Borylnitrene

Angew. Chem. Int. Ed.
DOI: [10.1002/anie.200705936](https://doi.org/10.1002/anie.200705936)



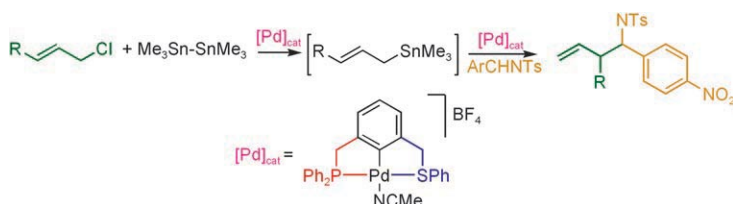
Oxidative homocoupling of lithiated 2-substituted indenenes furnishes *racemic* dimers, while radical reaction leads to a mixture of *racemic* and *meso* diastereomers. Internal rotation in these dimers was studied by NMR and molecular modelling.

Triptycenes

K. Nikitin,* H. Müller-Bunz, Y. Ortin,
W. Risse, M. J. McGlinchey*

Twin Triptycyl Spinning Tops: A Simple Case of Molecular Gearing with Dynamic C₂ Symmetry

Eur. J. Org. Chem.
DOI: [10.1002/ejoc.200800202](https://doi.org/10.1002/ejoc.200800202)



Novel catalytic features: This paper describes the development of a new unsymmetrical PCS-pincer palladium complex (see scheme) for catalytic aldol reactions and coupling of allyl chlorides and vinyloxiranes with aldehyde and imine electrophiles. The synergistic electronic effects of the phospho-

rus and sulfur side-arms of this pincer complex generate novel catalytic features, one of the most interesting of which was tandem catalytic activity found for the coupling reactions of allyl chlorides with electrophiles in the presence of hexamethylditin.

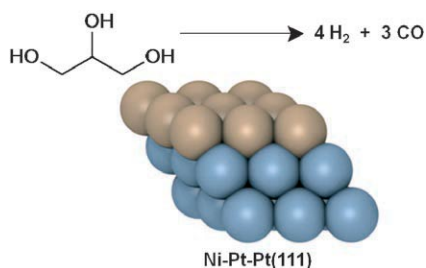
Pincer Complexes

M. Gagliardo, N. Selander,
N. C. Mehendale, G. van Koten,
R. J. M. Klein Gebbink,* K. J. Szabó*

Catalytic Performance of Symmetrical and Unsymmetrical Sulfur-Containing Pincer Complexes: Synthesis and Tandem Catalytic Activity of the First PCS-Pincer Palladium Complex

Chem. Eur. J.
DOI: [10.1002/chem.200800350](https://doi.org/10.1002/chem.200800350)

Scratching the surface: The reactions of oxygenates such as glycerol are important for the production of H₂. Temperature-programmed desorption experiments have revealed an increased production of H₂ on the Ni surface monolayer on Pt(111) (Ni-Pt-Pt(111)). Glycerol reforming activity trends are similar to previous results for ethylene glycol and ethanol, demonstrating that smaller oxygenates can be used as good models for reforming of larger, biomass-derived oxygenates.



Glycerol Conversion

O. Skoplyak, M. A. Barteau,*
J. G. Chen

Enhancing H₂ and CO Production from Glycerol Using Bimetallic Surfaces

ChemSusChem
DOI: [10.1002/cssc.200800053](https://doi.org/10.1002/cssc.200800053)