SPOTLIGHTS ...

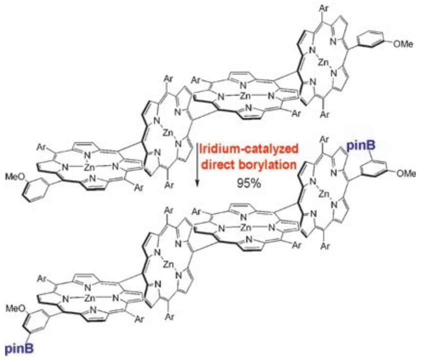
Porphyrins

H. Hata, S. Yamaguchi, G. Mori, S. Nakazono, T. Katoh, K. Takatsu, S. Hiroto, H. Shinokubo, A. Osuka**

Regioselective Borylation of Porphyrins by C–H Bond Activation under Iridium Catalysis to Afford Useful Building Blocks for Porphyrin Assemblies

Chem. Asian J.
DOI: **10.1002/asia.200700086**

The bor-on the ring: A boryl group can be selectively introduced at sterically uncongested positions in the aryl groups of porphyrin substrates whose peripheral β-positions are sterically hindered. This method can be applied to a variety of monomeric and oligomeric functional porphyrins, hence offering an efficient route to elaborate multiporphyrin-based molecular constructs. pinB = pinacolboryl.



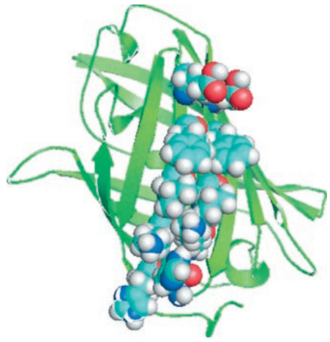
Amyloid β-Peptide

T. Takahashi, K. Ohta, H. Mihara*

Embedding the Amyloid β-Peptide Sequence in Green Fluorescent Protein Inhibits Aβ Oligomerization

ChemBioChem
DOI: **10.1002/cbic.200700108**

Against a green background. We have embedded the amyloid β-peptide (Aβ) sequence into the green fluorescent protein (GFP) structure to generate a pseudo-Aβ surface on the β-barrel (see figure); this construct was highly active in inhibiting Aβ oligomerization. One GFP variant (P13H), which mimicked the parallel β sheets of Aβ, was found to bind Aβ with high affinity and inhibit Aβ oligomerization, even though the concentration of P13H was lower than that of Aβ.

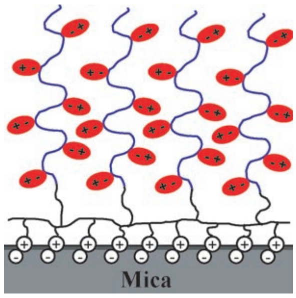


Graft Polymerization

*M. Chen, W. H. Briscoe, S. P. Armes, H. Cohen, J. Klein**

Robust, Biomimetic Polymer Brush Layers Grown Directly from a Planar Mica Surface

ChemPhysChem
DOI: **10.1002/cphc.200700131**



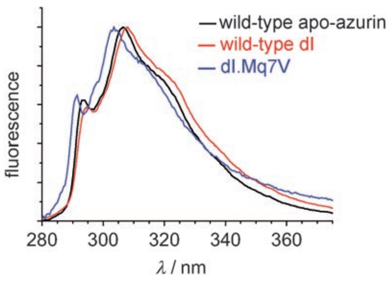
Robust polymer brushes are grown from a planar mica surface (see figure) using atom-transfer radical polymerization. The brushes are characterized by X-ray photoelectron spectroscopy, X-ray reflectometry, atomic force microscopy, optical interferometry, and surface forces.

Tryptophan Fluorescence

J. Broos, K. Tveen-Jensen, E. de Waal, B. H. Hesp, J. B. Jackson,* G. W. Canters, P. R. Callis*

The Emitting State of Tryptophan in Proteins with Highly Blue-Shifted Fluorescence

Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200700839**



Kind of blue: Tryptophan residues embedded in rigid and hydrophobic protein matrices, like azurin and domain 1 of a transhydrogenase (dI), yield blue-shifted emission spectra with vibrational fine structure. These features are typical for emission from the ^1L_b state of indole, and not the ^1L_a state. Nevertheless, these proteins are found to emit from ^1L_a, except for a mutant of domain 1 (dI.M97V), which features the most blue-shifted protein emission ever reported.

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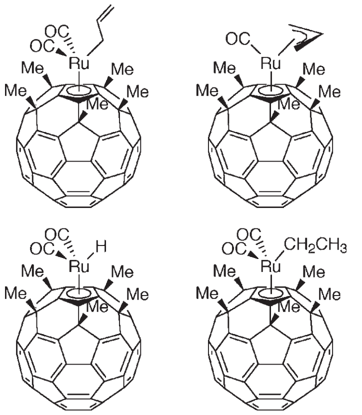
Metal–Fullerene Complexes

η^1-Allyl and η^3-allyl, ethyl, and hydrido ruthenium complexes of pentamethyl[60]fullerene, $Ru(\eta^5\text{-}C_{60}Me_5)R(CO)_2$ ($R = \eta^1$-allyl, Et, H) and $Ru(\eta^5\text{-}C_{60}Me_5)(\eta^3\text{-allyl})(CO)$, were prepared. Conversion of the η^1-allyl complex to the η^3-allyl complex and catalytic performance of the hydrido complex in the isomerization of 1-decene to internal decenes are described.

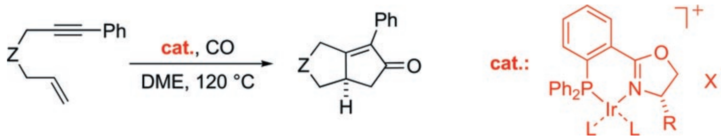


*Y. Matsuo, T. Uematsu, E. Nakamura**

Synthesis and Catalytic Activity of η^1-Allyl and η^3-Allyl, Ethyl, and Hydrido Complexes of Ruthenium–Pentamethyl[60]fullerene

Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200700013**

Asymmetric Catalysis



Iridium complexes derived from chiral phosphane–oxazolines (phox ligands) are efficient catalysts for intramolecular Pauson–Khand reactions. Under optimized conditions high yields and enantioselectivities of > 90 % *ee* were obtained with 2 mol-% of catalyst. The influence of the CO pressure and the anion were studied. The structure of a dicarbonyl(phox)iridium complex was determined by X-ray analysis.

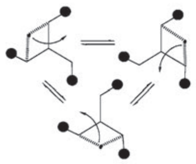
*Z.-L. Lu, E. Neumann, A. Pfaltz**

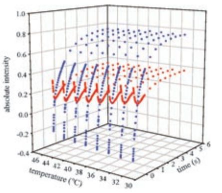
Asymmetric Catalytic Intramolecular Pauson–Khand Reactions with Ir(phox) Catalysts

Eur. J. Org. Chem.
DOI: **10.1002/ejoc.200700330**

Asymmetric Catalysis

Dynamic exchange between three symmetry-equivalent binding sites is observed for precatalysts of allylic alkylations (see scheme). The third ligating unit in the C_3-chiral stereodirecting ligands leads to superior catalyst performance compared to the bisoxazoline analogues.





C. Foltz, M. Enders, S. Bellemin-Laponnaz, H. Wadepohl, L. H. Gade**

Using a Tripod as a Chiral Chelating Ligand: Chemical Exchange Between Equivalent Molecular Structures in Palladium Catalysis with 1,1,1-Tris(oxazolinyl)ethane ("Trisox")

Chem. Eur. J.
DOI: **10.1002/chem.200700307**

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