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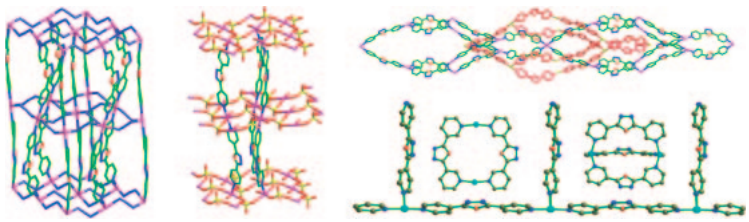
Accounts

Angular Dipyridyl Ligands 2,5-Bis(4-pyridyl)-1,3,4-oxadiazole and Its 3-Pyridyl Analogue as Building Blocks for Coordination Architectures: Assemblies, Structural Diversity, and Properties

M. Du and X.-H. Bu*

Bull. Chem. Soc. Jpn. **2009**, *82*, 539–554

Metallosupramolecular assemblies and properties of multifarious discrete and infinite coordination architectures with two angular dipyridyl-type building blocks are presented.

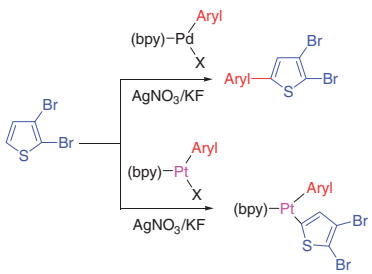


BCSJ Award Article

Electrophilic Substitution of Thiophenes with Arylpalladium(II) and Platinum(II) Complexes: Mechanistic Studies on Palladium-Catalyzed CH Arylation of Thiophenes

A. Sugie, H. Furukawa, Y. Suzaki, K. Osakada, M. Akita, D. Monguchi, and A. Mori*

Bull. Chem. Soc. Jpn. **2009**, *82*, 555–562

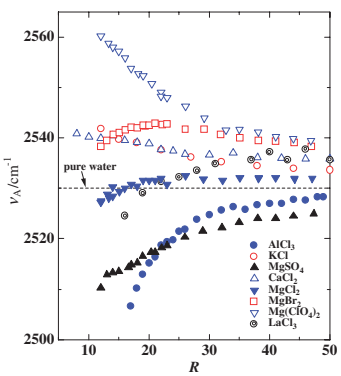


Electrophilic substitution of thiophene derivatives with arylpalladium(II) and platinum(II) complexes was observed. These results suggest palladium-catalyzed CH arylation of thiophenes demonstrated by our group proceeds through electrophilic substitution.

Variation of the Uncoupled OD Stretching Frequency with Electrolyte Concentration in Aqueous Electrolyte Solutions

K. Yonehama, Y. Yoshimura, T. Takekiyo, and H. Kanno*

Bull. Chem. Soc. Jpn. **2009**, *82*, 563–569



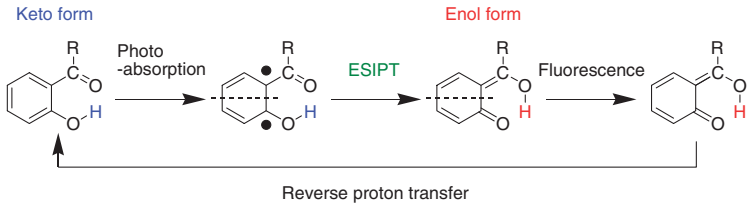
Uncoupled OD stretching spectra were measured for many aqueous electrolyte solutions as a function of electrolyte concentration. There are three types of the variations for the frequencies of the uncoupled OD stretching spectra with R (R = moles of water/moles of electrolyte).

Computational Study of Excited-State Intramolecular-Proton-Transfer of *o*-Hydroxybenzaldehyde and Its Derivatives

S. Nagaoka,* H. Teramae, and U. Nagashima

Bull. Chem. Soc. Jpn. **2009**, *82*, 570–573

The excited-state intramolecular-proton-transfer (ESIPT) of *o*-hydroxybenzaldehyde and its derivatives (*o*-formyl-substituted phenols) was studied by means of an ab initio molecular-orbital method. The computational results are consistent with the experimental values and support the nodal-plane model.



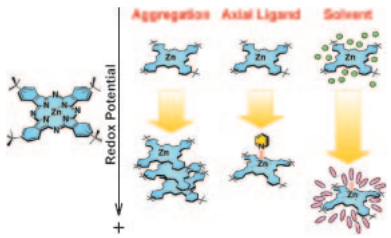
Selected Paper

Electrochemical Oxidation Properties of Tetrakis(*tert*-butyl)phthalocyaninatozinc(II) in Non-Aqueous Media: A Reinvestigation into the Effects of Stacking, Axial Coordination, and Solvent

M. Morisue,* K. Kameyama, and Y. Kobuke*

Bull. Chem. Soc. Jpn. **2009**, *82*, 574–581

The electrochemical oxidation properties of tetrakis(*tert*-butyl)phthalocyaninatozinc, Zn(*t*-Bu$_4$Pc) has been reinvestigated for the first systematic exploration. The experimental conditions for the oxidation properties of the monomeric Zn(*t*-Bu$_4$Pc) species were optimized in CH_2Cl_2 as a non-coordinating solvent.

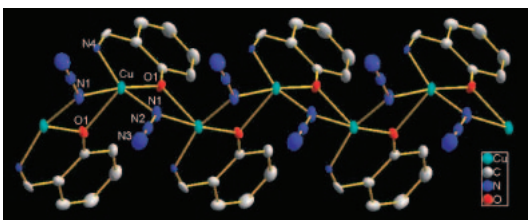


In Situ Self-Assembly of 1D Copper(II) Coordination Polymer Containing EO Azide and Phenolate Bridges: Crystal Structure and Magnetic Properties

Z. Liu,* W. Han, C. Liu,* X. Di, J. Zhang, and D. Zhang

Bull. Chem. Soc. Jpn. **2009**, *82*, 582–584

A novel one-dimensional copper(II) coordination polymer with formula $[Cu^{II}(L_1)(N_3)]_n$ (**1**), has been prepared via in situ self-assembly. Magnetic susceptibility measurement reveals the existence of relatively strong ferromagnetic interactions in the 1D chain.

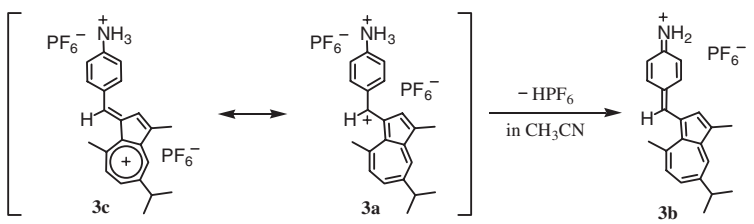


A Facile Preparation of (4-Aminophenyl)-(3-guaiazulenyl)methylium Hexafluorophosphate: Comparative Studies on Spectroscopic, Chemical, and Electrochemical Properties of Monocarbenium Ion and *p*-Benzoquinodimethane Monoiminium Ion Compounds

S. Takekuma,* N. Ijibata, T. Minematsu, and H. Takekuma

Bull. Chem. Soc. Jpn. **2009**, *82*, 585–593

The title chemistry of the isolated **3a**, with the resonance structure **3c**, forming a protonated amino group and the isolated **3b**, possessing a 4-methylene-2,5-cyclohexadiene-1-iminium ion structure, is reported.

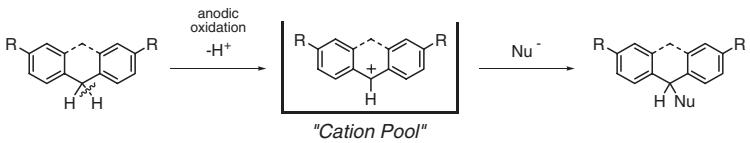


Generation of Diarylcarbenium Ion Pools via Electrochemical C–H Bond Dissociation

M. Okajima, K. Soga, T. Watanabe, K. Terao, T. Nokami, S. Suga, and J. Yoshida*

Bull. Chem. Soc. Jpn. **2009**, *82*, 594–599

The "cation pools" of diarylcarbenium ions have been generated by the low-temperature electrochemical oxidation of diphenylmethane derivatives. The generation of the diarylcarbenium ions was confirmed by low-temperature spectroscopic analyses and their reactivity was also investigated.

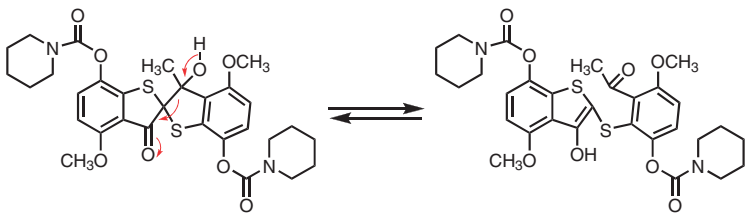


Mechanism of Isomerization and Acid-Induced Transformations of 3′-Hydroxy-4,4′-dimethoxy-3′-methyl-3-oxo-7,7′-bis(piperidinocarbonyloxy)-2,2′-spirobi[2*H*,2′*H*,3*H*,3′*H*-benzo[*b*]thiophene]. Unusual Equilibrium between the Spiro and 3-Hydroxybenzothiophene Systems

M. T. Konieczny* and P. Sowiński

Bull. Chem. Soc. Jpn. **2009**, *82*, 600–602

Two diastereoisomers of the title compound equilibrate via a 3-hydroxybenzothiophene derivative. The result indicates that the spiro form is more stable than the related, aromatic benzothiophene.

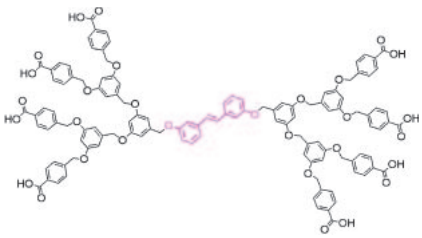


Photochemical Properties of 3,3′-Disubstituted Stilbene Dendrimers

K. Kato, A. Momotake, Y. Shinohara, T. Sato, K. Takahashi, R. Nagahata, Y. Nishimura, and T. Arai*

Bull. Chem. Soc. Jpn. **2009**, *82*, 603–605

Not only dendrimer surfaces but also substituent positions are important for the photochemistry of new water-soluble stilbene dendrimers.

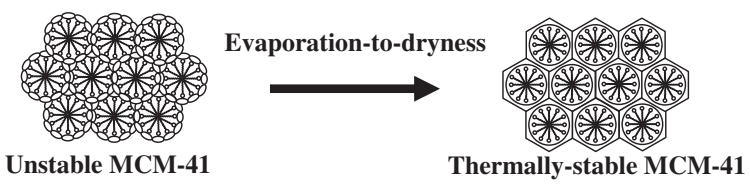


Rapid Crystallization of Mesoporous Silica with Highly Stable 2D-Hexagonal Structure

S. Inagaki, Y. Aratani, S. Nakata, Y. Yashiro, Y. Sekine, E. Kikuchi, and M. Matsukata*

Bull. Chem. Soc. Jpn. **2009**, *82*, 606–612

The synthetic parameters of MCM-41, preparing through the evaporation-to-dryness treatment of alkali-free surfactant–silicate mixture, and thier thermal stability and water resistance, have been investigated.

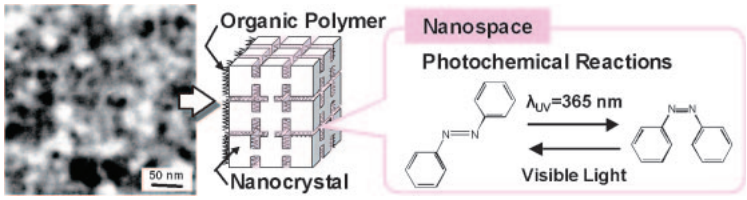


Photochemical Reactions in Nanoscopic Organic Domains Generated from Oriented Crystals with Polymers: Nanocrystalline Mosaics as a New Family of Host Materials

Y. Oaki and H. Imai*

Bull. Chem. Soc. Jpn. **2009**, *82*, 613–617

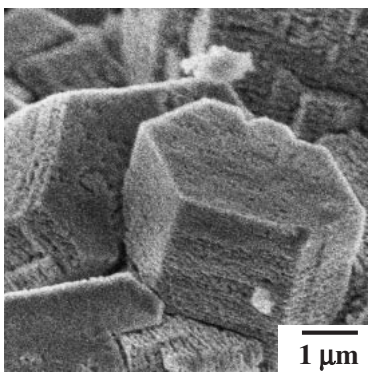
The nanocrystalline mosaic structures are organized by the oriented crystals with organic polymers. Photochemical reactions successfully proceed in the organic domains of the nanoscopic space.



Microstructural Transformation with Heat-Treatment of Aluminum Hydroxide with Gibbsite Structure

T. Mitsui, T. Matsui, R. Kikuchi, and K. Eguchi*

Bull. Chem. Soc. Jpn. **2009**, *82*, 618–623

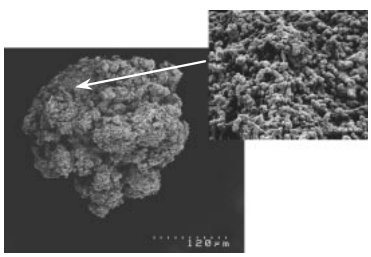


Gibbsite grains with hexagonal prism morphology were prepared from sodium aluminate solution by ordinary procedures. The gibbsite was transformed into laminated morphology by heat treatment above 1200 °C due to the phase transition to α-Al_2O_3.

Catalytic Behavior of Bis(imino)pyridine-iron(II) Complex Supported on Clay Minerals during Slurry Polymerization of Ethylene

Y. Hiyama, Y. Kawada, Y. Ishihama, T. Sakuragi, M. Ohshima, H. Kurokawa,* and H. Miura

Bull. Chem. Soc. Jpn. **2009**, *82*, 624–626



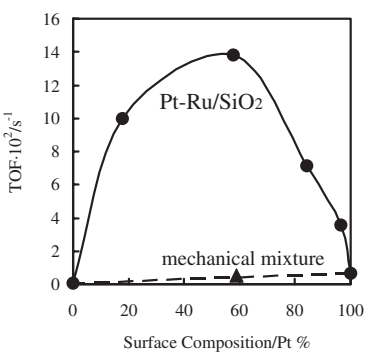
Polyethylene particle
(produced using the catalyst consisting of bis(imino)pyridineiron(II) complex supported on saponite.

Bis(imino)pyridineiron(II) complexes supported on montmorillonite and saponite showed high activity for ethylene polymerization.

Bimetallic Effect of Silica-Supported Pt–Ru Catalyst for Hydrogenation of Aromatic Hydrocarbons

T. Arakawa, H. Seki, M. Ohshima, H. Kurokawa, and H. Miura*

Bull. Chem. Soc. Jpn. **2009**, *82*, 627–629



A drastic synergistic effect has been found for the liquid-phase hydrogenation of aromatic hydrocarbons by the combination of Pt and Ru. The surface composition of the most active catalyst was nearly 50% Pt, suggesting that the Pt–Ru ensemble of a 1-to-1 ratio was active for the hydrogenation reaction. TOF: turnover frequency of naphthalene hydrogenation.