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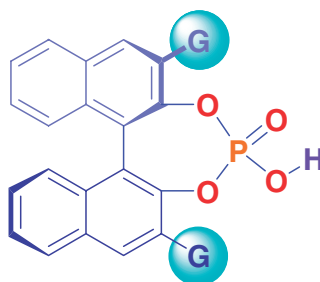
Award Accounts

The Chemical Society of Japan Award for Creative Work for 2008

Chiral Phosphoric Acids as Versatile Catalysts for Enantioselective Carbon–Carbon Bond Forming Reactions

M. Terada

Bull. Chem. Soc. Jpn. **2010**, *83*, 101–119



Chiral Brønsted Acid Catalyst

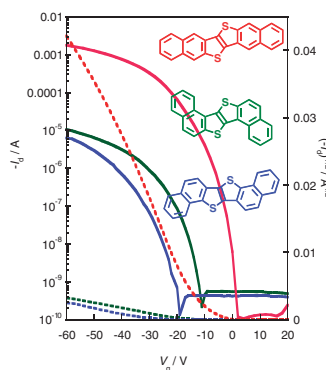
Binaphthol-derived monophosphoric acids were designed as novel chiral Brønsted acid catalysts. The chiral phosphoric acids thus developed functioned as efficient enantioselective catalysts for a variety of carbon–carbon bond forming reactions affording enantioenriched products in excellent selectivities.

BCSJ Award Article

Three Structural Isomers of Dinaphtho-thieno[3,2-*b*]thiophenes: Elucidation of Physicochemical Properties, Crystal Structures, and Field-Effect Transistor Characteristics

T. Yamamoto, S. Shinamura, E. Miyazaki, and K. Takimiya*

Bull. Chem. Soc. Jpn. **2010**, *83*, 120–130

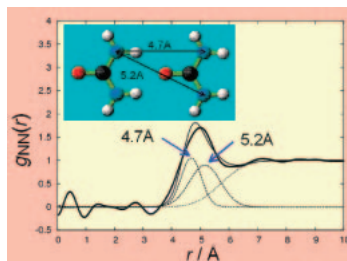


Three structural isomers of dinaphtho-thieno[3,2-*b*]thiophenes with C_{2h} symmetry were investigated to gain an insight into the relationship between the molecular structure and the semiconductor characteristics of highly π -extended heteroarene-based organic semiconductors.

Partial Pair Correlation Functions of Highly Concentrated Aqueous Urea Solutions Determined by Neutron Diffraction with $^{14}\text{N}/^{15}\text{N}$ and H/D Isotopic Substitution Methods

Y. Kameda,* A. Maki, Y. Amo, and T. Usuki

Bull. Chem. Soc. Jpn. **2010**, *83*, 131–144

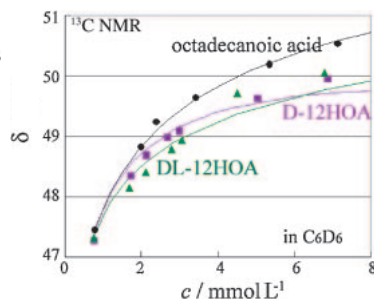


Neutron diffraction measurements were carried out on $^{14}\text{N}/^{15}\text{N}$ and H/D isotopically substituted aqueous 25 mol % urea solutions in order to obtain direct experimental information on the short-range structure of the urea–urea, urea–water, and water–water interactions in highly concentrated aqueous urea solutions near saturation.

A Comparative Study on Chiral and Racemic 12-Hydroxyoctadecanoic Acids in the Solutions and Aggregation States: Does the Racemic Form Really Form a Gel?

T. Sakurai, Y. Masuda, H. Sato, A. Yamagishi, H. Kawaji, T. Atake, and K. Hori*

Bull. Chem. Soc. Jpn. **2010**, *83*, 145–150

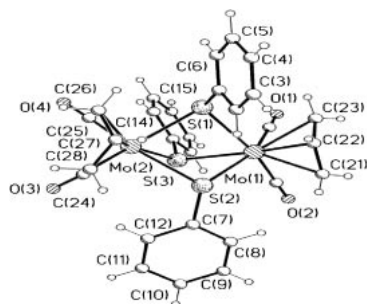


Separately formed gels of D- and L-12HOAs became a solution on maintaining contact, showing that DL-12HOA does not form a gel. NMR spectroscopy shows that molecular aggregation is more favorable in the DL-12HOA solutions than in the D-12HOA solutions.

Synthesis and Characterization of Allylic Dinuclear Molybdenum Complexes with Bridging Oxygen and Sulfur Containing Ligands

M. Y. Shatnawi,* S. A. Tanash, S. A. Al-Ahmad, P. R. Challen, and G. Henkel

Bull. Chem. Soc. Jpn. **2010**, *83*, 151–156



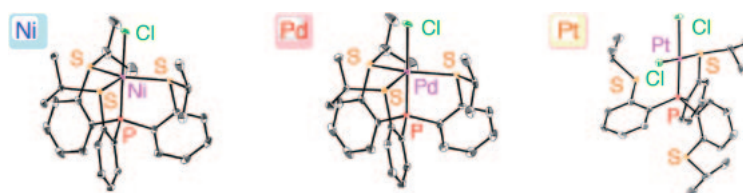
Dinuclear molybdenum complexes of alcoholate and thiolate ligands were prepared. X-ray crystallographic structural determination showed that there are no Mo–Mo bonds and the ligands are present in a bridging manner. The dinuclear complexes have three bridging –SR or –OR ligands.

Synthesis and Structure of Group 10 Metal Complexes with New Tripodal Tetradentate Ligand Bearing One Phosphine and Three Thioether Moieties

N. Takeda,* Y. Tanaka, F. Sakakibara, and M. Unno*

Bull. Chem. Soc. Jpn. **2010**, *83*, 157–164

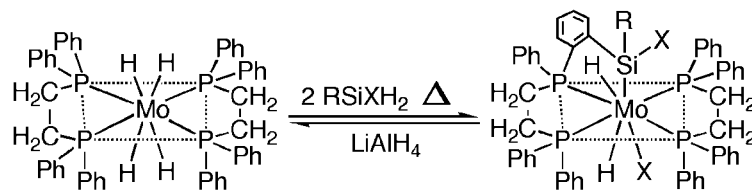
A new phosphine ligand tethered with three thioether moieties, [2-(*i*-PrS)-C₆H₄]₃P, forms five-coordinate trigonal-bipyramidal complexes with nickel(II) and palladium(II) and a square-planar complex with platinum(II). These results are consistent with the tendency to form five-coordinate complex in the order of Ni^{II} > Pd^{II} > Pt^{II}.



Reactions of Molybdenum Tetrahydrido Complex with Halohydrosilanes

S. Kuramochi, Y. Kido, S. Shioda, M. Minato,* M. Kakeya, and K. Osakada

The thermal reactions of [MoH₄(dppe)₂] (**1**, dppe = Ph₂PCH₂CH₂PPh₂) with RSiH₂X afford [MoH₂X(dppe){[Ph₂PCH₂CH₂P(Ph)₂C₆H₄-*o*]RXSi-*P,P,Si*}] (R = Ph, X = Cl (**5a**); R = *cyclo*-C₆H₁₁, X = Cl (**5b**); and R = Ph, X = Br (**6**)) by synchronous activation of the Si–H bond and the ortho C–H bond of the dppe ligand. Reduction of the Si–Cl and Mo–Cl bonds in **5a** with LiAlH₄ gives the original complex **1** as a result of Si–C bond cleavage.



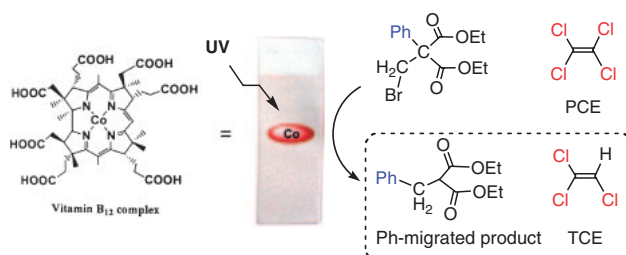
Bull. Chem. Soc. Jpn. **2010**, *83*, 165–169

Preparation and Reactivity of Vitamin B₁₂-TiO₂ Hybrid Catalyst Immobilized on a Glass Plate

H. Shimakoshi, M. Abiru, K. Kuroiwa,
N. Kimizuka, M. Watanabe, and Y. Hisaeda*

Bull. Chem. Soc. Jpn. **2010**, *83*,
170–172

The vitamin B₁₂-TiO₂ hybrid catalyst was effectively immobilized on a glass plate, and the immobilized catalyst shows efficient reactivity for various molecular transformations during irradiation by UV light.

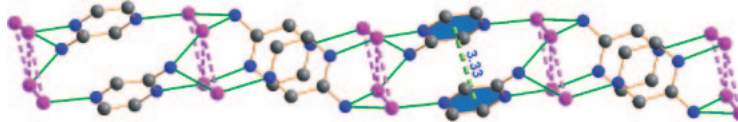


A Novel 3D Photoluminescent Silver(I) Coordination Polymer Featuring Unusual μ_4 -Bonded and Usual μ_2 -Bonded 2-Aminopyrazine

D. Sun, G.-G. Luo, N. Zhang, Q.-J. Xu,
Z.-H. Wei, C.-F. Yang, L.-R. Lin,
R.-B. Huang,* and L.-S. Zheng

Bull. Chem. Soc. Jpn. **2010**, *83*,
173–175

The coexistence of unusual μ_4 - and usual μ_2 -bonded modes of 2-aminopyrazine is observed for the first time in a novel 3D Ag(I) coordination polymer incorporating 1D $\{[Ag_4(\mu_4-NHpyz)_2]^{2+}\}_n$ cylinders. Moreover, **1** exhibits photoluminescence properties.

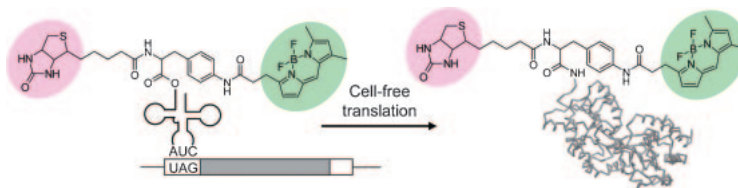


Incorporation of Non-Natural Amino Acids with Two Labeling Groups into the N-Terminus of Proteins

T. Egusa, K. Shiraga, T. Chiba, Y. Tokuda,
I. Iijima, and T. Hohsaka*

Bull. Chem. Soc. Jpn. **2010**, *83*,
176–181

Non-natural amino acids with both fluorophore and biotin were designed, synthesized, and incorporated into the N-terminus of proteins in response to a UAG initiator codon in a cell-free protein synthesizing system.



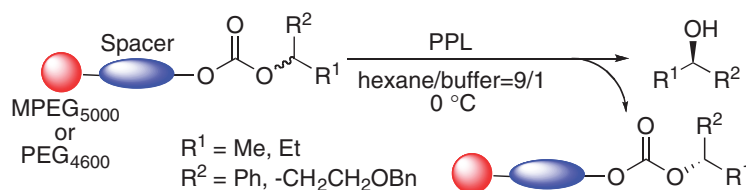
Selected Paper

Easy Separation of Optically Active Secondary Alcohols by Enzymatic Hydrolysis of Soluble Polymer-Supported Carbonates

M. Okudomi, M. Shimojo, M. Nogawa,
A. Hamanaka, N. Taketa, T. Nakagawa,
and K. Matsumoto*

Bull. Chem. Soc. Jpn. **2010**, *83*,
182–189

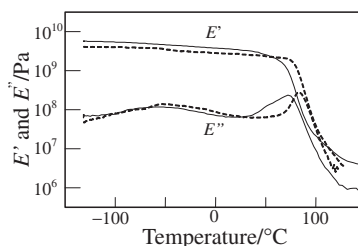
The enzyme-mediated enantioselective hydrolysis of middle molecular weight poly(ethylene glycol) (PEG)-supported carbonates is disclosed. In this system, the separation of the remaining (*S*)-substrate and the resulting (*R*)-alcohol was achieved by a simple procedure without any laborious column chromatography.



Viscoelasticity, Leachability, and Antimicrobial Activity of Poly(vinyl chloride) Blended with Benzyltrimethyltetradecylammonium Bis(2-ethylhexyl) Sulfonosuccinate

H. Katano* and T. Tsukatani

Bull. Chem. Soc. Jpn. **2010**, *83*, 190–194



Storage (E') and loss (E'') moduli of the 0 (dashed lines) and 10% (solid lines) BA14BEHS-blended PVC films.

Benzyltrimethyltetradecylammonium salt with bis(2-ethylhexyl) sulfonosuccinate (BA14BEHS) is a halogen-free low-volatile liquid material. BA14BEHS showed good compatibility with poly(vinyl chloride). BA14BEHS-blended poly(vinyl chloride) film exhibited low-leachability. Nevertheless, the film exhibited an antimicrobial performance.

Adsorption of Simazine on a Glassy Carbon Electrode

S. Pintado and J. M. R. Mellado*

Bull. Chem. Soc. Jpn. **2010**, *83*, 195–197

Measurements of differential capacity vs. potential have been made for the herbicide simazine (2-chloro-4,6-bis(ethylamino)-1,3,5-triazine). The decrease in capacity was independent of the applied potential, so the adsorption is independent of the potential. The adsorption follows a Langmuir type isotherm.

