

# Chemistry Letters

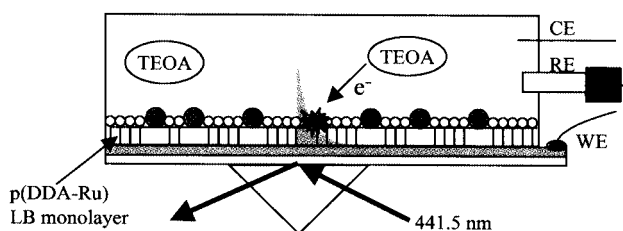
No.5  
May, 2001

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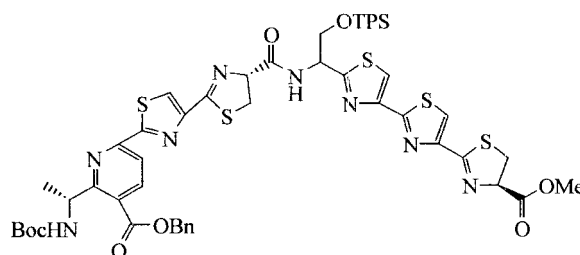
- 378 **Enhancement of an Anodic Photocurrent for Polymer Langmuir–Blodgett Monolayer Containing Tris(2,2'-bipyridine)ruthenium Complex by Surface Plasmon Excitation**

Nobuko Fukuda, Masaya Mitsuishi, Atsushi Aoki, and Tokuji Miyashita



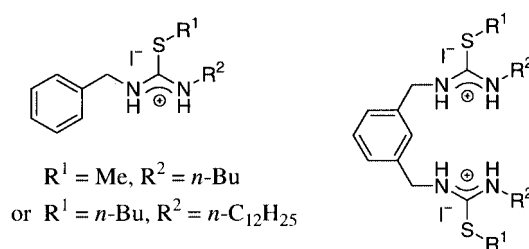
- 380 **Convenient Synthesis of a Central 2,3,6-Trisubstituted Pyridine Skeleton of a Macrobicyclic Antibiotic, Cyclothiazomycin**

Akihiro Okabe, Akinori Ito, Kazuo Okumura, and Chung-gi Shin



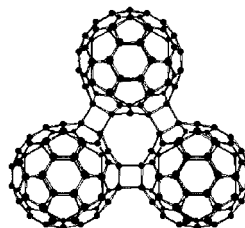
- 382 **Application of Thiuronium Derivatives as Anion Ionophores for Ion Selective Electrodes**

Shin-ichi Sasaki, Akio Hashizume, Satoru Ozawa, Daniel Citterio, Naoko Iwasawa, and Koji Suzuki



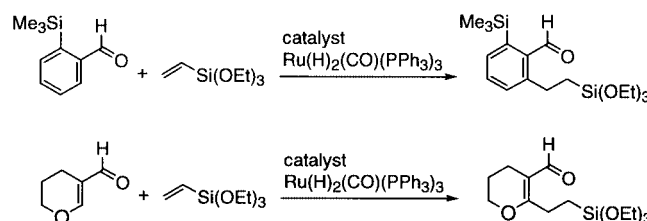
- 384 **Properties of Photoexcited States of C<sub>180</sub>, a Triangle Trimer of C<sub>60</sub>**

Mamoru Fujitsuka, Koichi Fujiwara, Yasujiro Murata, Shinobu Uemura, Masashi Kunitake, Osamu Ito, and Koichi Komatsu



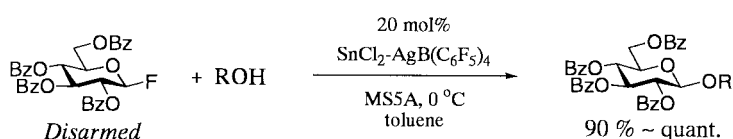
Properties of the excited singlet and triplet states of C<sub>180</sub> "cis-2/cis-2/cis-2", a triangle triad of C<sub>60</sub>, were investigated by various methods including transient absorption spectroscopy. The photophysical properties of C<sub>180</sub> are affected by the non-radiative process in the singlet excited state.

386 **The Ruthenium-Catalyzed Addition of  $\beta$  C–H Bonds in Aldehydes to Olefins**



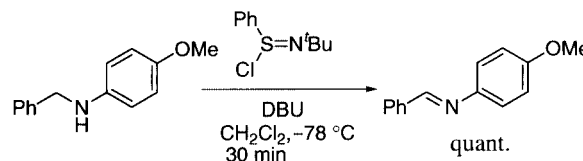
Fumitoshi Kakiuchi, Taisuke Sato, Kimitaka Igi, Naoto Chatani, and Shinji Murai

388 **Catalytic and Stereoselective Glycosylation with Disarmed Glycosyl Fluoride by Using a Combination of Stannous(II) Chloride ( $\text{SnCl}_2$ ) and Silver Tetrakis(pentafluorophenyl)borate [ $\text{AgB}(\text{C}_6\text{F}_5)_4$ ] as a Catalyst**



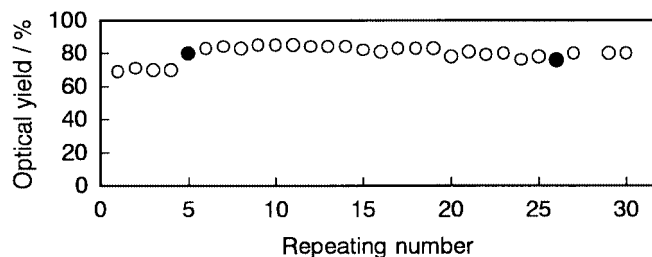
Teruaki Mukaiyama, Hisashi Maeshima, and Hideki Jona

390 **Oxidation of Various Secondary Amines to Imines with *N*-*tert*-Butylphenylsulfonimidoyl Chloride**



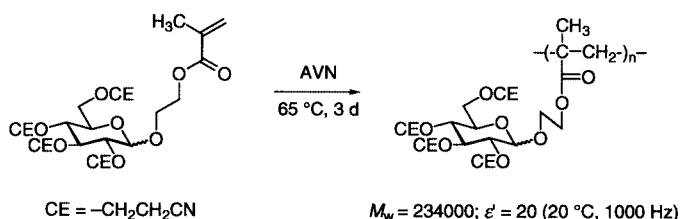
Teruaki Mukaiyama, Asahi Kawana, Yoshio Fukuda, and Jun-ichi Matsuo

392 **Highly Durable Enantio-Differentiating Nickel Catalyst for Repeated Use for the Hydrogenation of Methyl Acetoacetate**



Tsutomu Osawa, Saori Sakai, Tadao Harada, and Osamu Takayasu

394 **Novel Linear and Cross-Linked Acrylate Polymers Bearing *O*-Cyanoethylated (Glycosyloxy)ethyl Side Chain with High Dielectric Properties over Wide Temperature Range**



Ryosuke Nishida, Teruhiko Ishikawa, and Seiki Saito

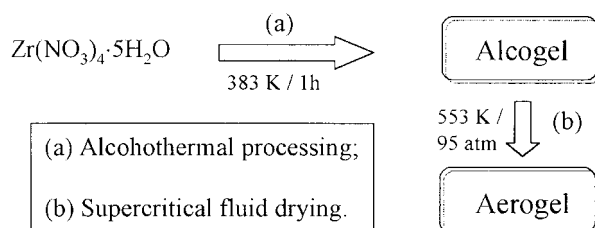
396 **Preparation of CdS Semiconductor Nanowire by a Convenient Ultraviolet Irradiation Technique**

Cadmium Sulfide (CdS) nanowire was synthesized by a convenient ultraviolet irradiation method using hydroxyethyl cellulose as a soft template at room temperature.



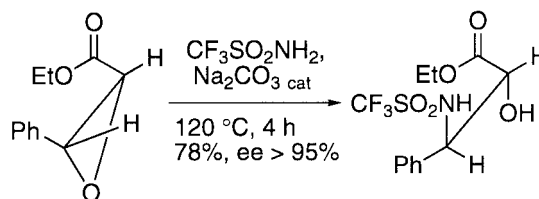
Shuang-Ding Wu, Zhengang Zhu, Jingyun Tan, and Junchang Gao

398 **A Simple Alcohothermal Synthetic Route to High Surface Area Zirconia Aerogel**



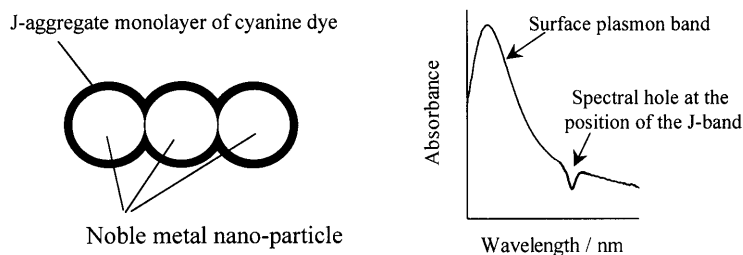
Juncheng Hu, Yong Cao, and Jingfa Deng

400 **Stereo- and Regioselective Opening of 3-Phenylglycidates by Trifluoromethylsulfonamide under Solid-Liquid Heterogeneous Conditions**



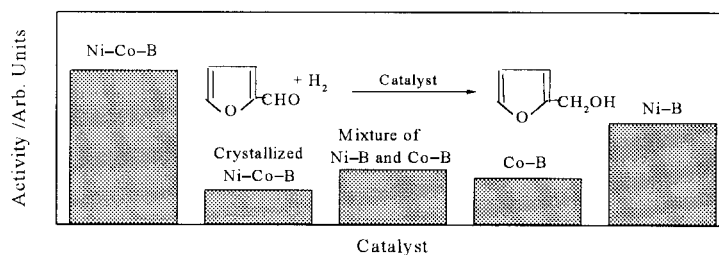
Michele Penso, Domenico Albanese, Dario Landini, and Vittoria Lupi

402 **Spectroscopic Properties of Noble Metal Nano-Particles Covered with J-Aggregates of Cyanine Dye**



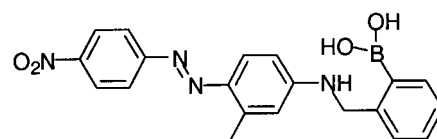
Tomoo Sato, Fusahiro Tsugawa, Toshinori Tomita, and Mitsuo Kawasaki

404 **Furfural Hydrogenation to Furfuryl Alcohol over a Novel Ni-Co-B Amorphous Alloy Catalyst**



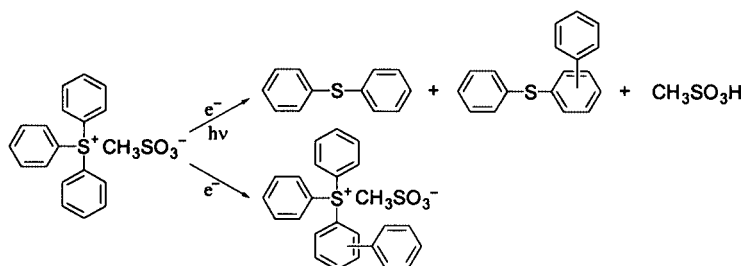
Hongshan Luo, Hexing Li, and Li Zhuang

## 406 A Molecular Colour Sensor for Fluoride



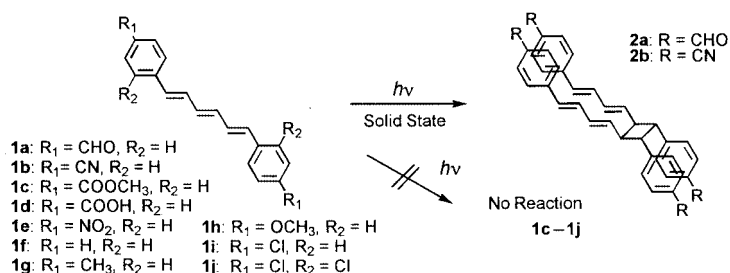
Christopher J. Ward, Prakash Patel, and Tony D. James

## 408 A Novel Electron Beam-Induced Reaction of Sulfonium Salt in the Crystalline State



Seongyun Moon, Yasunari Maekawa, and Masaru Yoshida

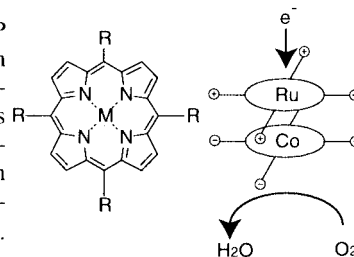
## 410 Intermolecular [2+2] Photocycloaddition of Formyl- and Cyano-Substituted Diphenylhexatrienes in the Solid State



Yoriko Sonoda, Akira Miyazawa, Shigenobu Hayashi, and Masako Sakuragi

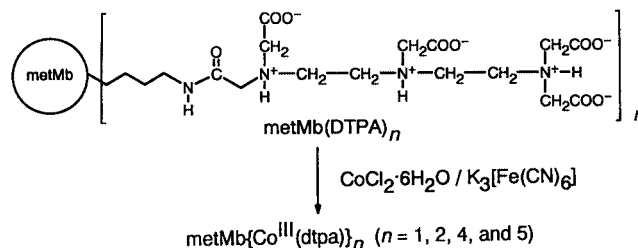
## 412 Electroreduction of Dioxygen Using Co-Ru Dinuclear Porphyrin Catalyst in Nafion Film

The mixing of CoTPPS with RuTMPyP in water or organic solvents results in dimerization through an electrostatic interaction. The dimeric porphyrin acts as an excellent catalyst for the 4-electron reduction of dioxygen in Nafion film, in which the multi-electron transfer is accelerated through the  $\pi$ -orbital overlapping.



Takane Imaoka, Shinsuke Nakazawa, and Kimihisa Yamamoto

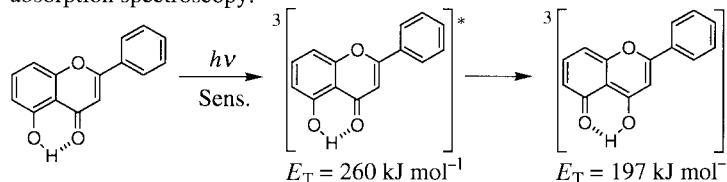
## 414 Assembly of Diethylenetriaminepentaacetatocobaltate(III) Complexes on the Surface Lysine Residues of Myoglobin



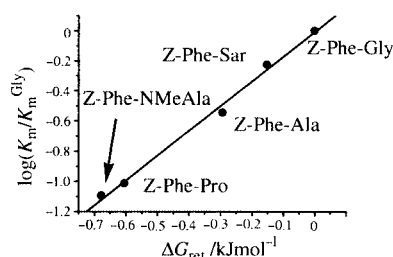
Keiichi Tsukahara, Mari Nishimine, Kimiko Kiguchi, Yuka Shioyama, Miho Matsui, Naoko Kubota, and Ryuichi Arakawa

## 416 Hydrogen Atom Transfer of 5-Hydroxyflavone in the Excited Triplet State

5-Hydroxyflavone exhibited the intramolecular hydrogen atom transfer in the excited triplet state at room temperature revealed by transient absorption spectroscopy.



Yasuo Norikane and Tatsuo Arai

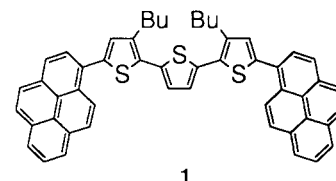
418 Kinetic Evidence for the Hydrophobic Atmosphere of the Catalytic Cavity in Carboxypeptidase Y Based on a Linear Relationship between Michaelis–Menten Constant  $K_m$  and Hydrophobicity of the Substrates

A linear relationship between hydrophobic property ( $\Delta G_{ret}$ ) and relative  $K_m$  of the dipeptides in the hydrolysis of carboxypeptidase Y

Yoshifumi Kanosue, Yoshikazu Hiraga, Satoshi Kojima, and Katsuo Ohkata

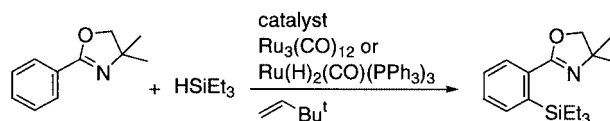
## 420 Synthesis of Pyrene-Bearing Oligothiophenes as Novel Light Emitting Materials and Their Application to Single-Organic-Layer Electroluminescence Devices

Pyrene-bearing oligothiophenes were synthesized, and the single-organic-layer electroluminescence device (ITO/LiF/Al) exhibited a maximum luminance of 1860  $\text{cd/m}^2$  at a driving voltage of 12.5 V.

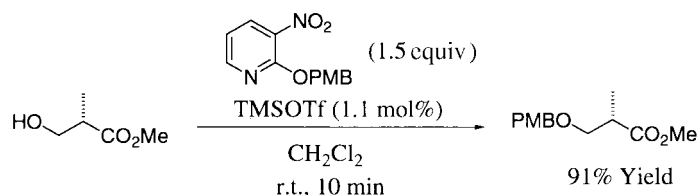


Yoshio Aso, Takashi Okai, Yohei Kawaguchi, and Tetsuo Otsubo

## 422 Ruthenium-Catalyzed Dehydrogenative Silylation of Aryloxazolines with Hydro-silanes via C–H Bond Cleavage

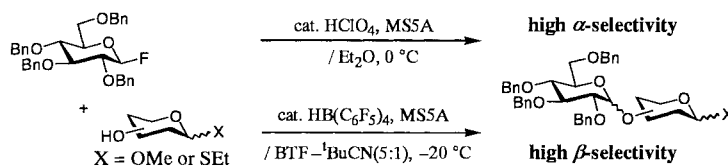


Fumitoshi Kakiuchi, Kimitaka Igi, Mitsutaka Matsumoto, Naoto Chatani, and Shinji Murai

424 An Efficient Method for the *p*-Methoxybenzylation of Hydroxy Groups with 2-(4-Methoxybenzyloxy)-3-nitropyridine

Masakazu Nakano, Wataru Kikuchi, Jun-ichi Matsuo, and Teruaki Mukaiyama

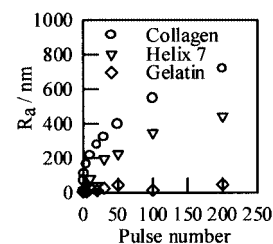
426 **A Catalytic and Stereoselective Glycosylation with Glucopyranosyl Fluoride by Using Various Protic Acids**



Hideki Jona, Hiroki Mandai, and Teruaki Mukaiyama

428 **Submicroscopic Morphology of the Laser Induced Surface Structure of Partially Renatured Gelatin Films**

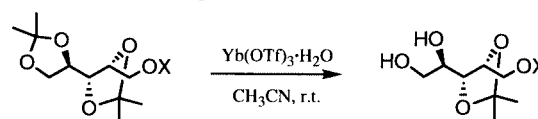
The surface roughness ( $R_a$ ) increased with applied laser pulse number following a hyperbolic curve for the renatured gelatin films with the degree of helix content of more than ca. 7%. The increment of  $R_a$  tended to be depressed with increasing the degree of helix content.



Masaru Sugiura, Katsunori Tsunoda, Hirofumi Yajima, Tadahiho Ishii, Hiroshi Itoh, and Yutaka Nagai

430  **$\text{Yb(OTf)}_3 \cdot \text{H}_2\text{O}$ : A Novel Reagent for the Chemoselective Hydrolysis of Isopropylidene Acetals**

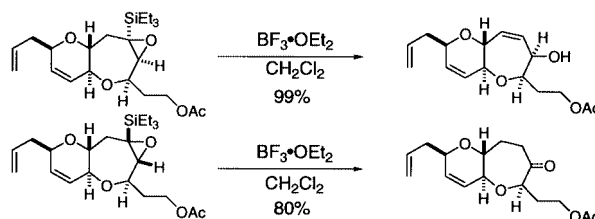
A facile and chemoselective hydrolysis of terminal isopropylidene acetals has been achieved using a catalytic amount of  $\text{Yb(OTf)}_3 \cdot \text{H}_2\text{O}$  in acetonitrile at ambient temperature.



X = Bn, Me, Ts, Ac, TBDPS, Allyl

J. S. Yadav, B. V. Subba Reddy, and K. Srinivasa Reddy

432 **Ring Opening Reactions of Cyclic  $\alpha,\beta$ -Epoxy silanes with  $\text{BF}_3 \cdot \text{OEt}_2$**



Kazunobu Kira and Minoru Isobe

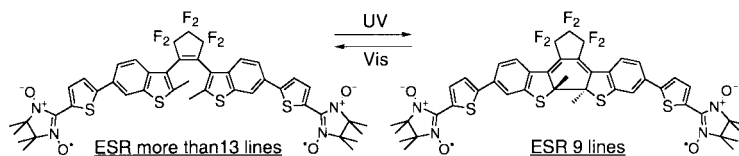
434 **A Novel Route to Prepare Nano- $\text{Hg}_2\text{Cl}_2$  Arrays**

Nano- $\text{Hg}_2\text{Cl}_2$  arrays were prepared in porous alumina template.



Yinhai Wang, Jimei Mo, Weili Cai, Lianzeng Yao, and Lide Zhang

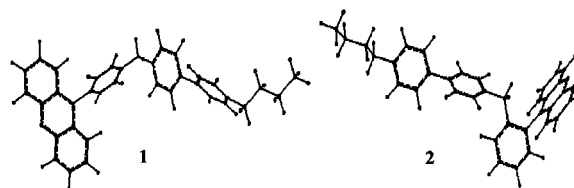
436 **Photoswitching of Intramolecular Magnetic Interaction Using Photochromic Diarylethene Spin Coupler: Introduction of Thiophene Spacer**



Kenji Matsuda, Mitsuyoshi Matsuo, and Masahiro Irie

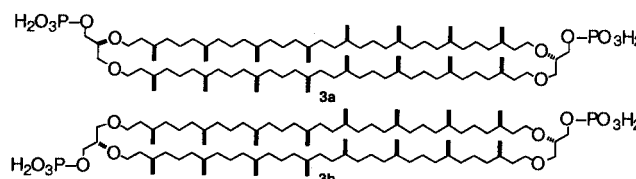
438 **Steric and Conformational Effects on the Photophysical and DNA Binding Properties of Novel Viologen Linked Tolyacridines**

Minimum energy conformations of the viologens linked tolyacridines obtained by the AM1 calculations



Nadukkudy V. Eldho, Joshy Joseph, and Danaboyina Ramaiah

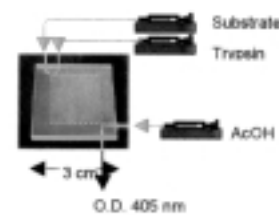
440 **Highly Thermostable Liposome from 72-Membered Macrocyclic Tetraether Lipid: Importance of 72-Membered Lipid for Archaea to Thrive under Hyperthermal Environments**



Kenji Arakawa, Tadashi Eguchi, and Katsumi Kakinuma

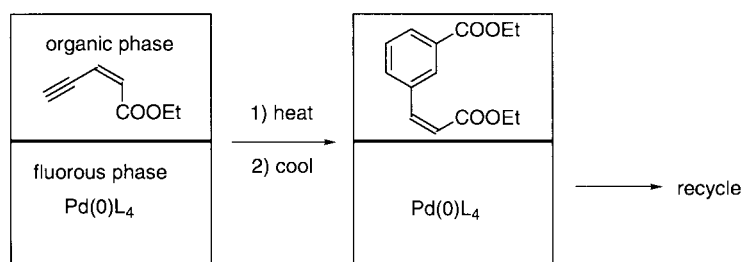
442 **Improved Yield of Enzyme Reaction in Microchannel Reactor**

Trypsin-catalyzed hydrolysis of benzoylarginine-*p*-nitroanilide using a microchannel reactor showed higher yield than batchwise reaction at lower enzyme concentration. The rate of reaction seemed to be 20 times greater than that in the batchwise system.



Masaya Miyazaki, Hiroyuki Nakamura, and Hideaki Maeda

444 **Palladium-Catalyzed Benzannulation of Conjugated Enynes in Fluorous Biphasic System**

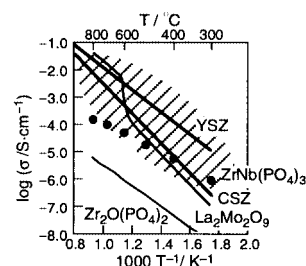


Shinichi Saito, Yukiyasu Chounan, Tsutomu Nogami, Osamu Ohmori, and Yoshinori Yamamoto

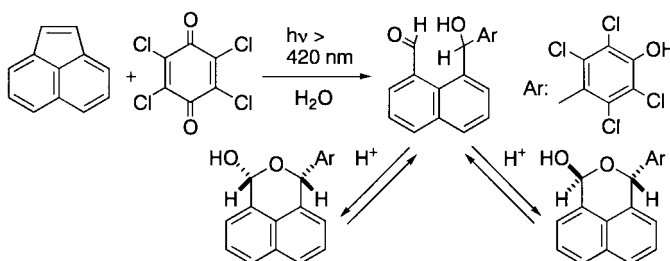
446 **Extraordinary High Tetravalent Cation Conducting Behaviors in Solid**

Nobuhito Imanaka, Tomohiro Ueda, and Gin-ya Adachi

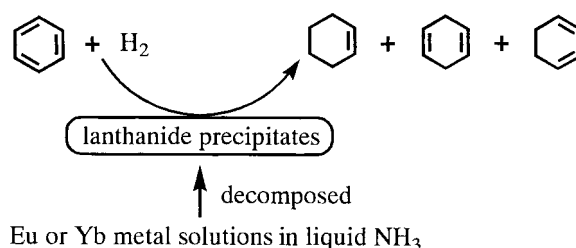
A tetravalent cation conductor whose ion conductivity is extraordinarily high and comparable to the conductivity range of the representative divalent oxide anion conductors, was artificially designed by strictly choosing the constituent elements and the structure of the solid.

448 **Photochemical Production of Sugar-like Interconvertible Anomeric Naphthopyranylhemiacetals from Acenaphthylene and Chloranil**

Naoki Haga, Hiroaki Takayanagi, and Katsumi Tokumaru

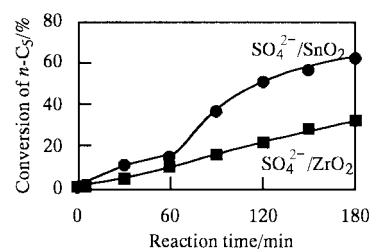
450 **Selective Hydrogenation of Benzene to Cyclohexadiene and Cyclohexene by Lanthanide Precipitates Obtained from Eu or Yb Metal Solutions in Liquid Ammonia**

Hayao Imamura, Kouzi Nishimura, Kenji Sumioki, Mitoshi Fujimoto, and Yoshihisa Sakata

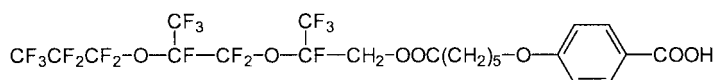
452 **The Preparation of Solid Superacid of Sulfated Tin Oxide with Acidity Higher Than Sulfated Zirconia**

Hiromi Matsuhashi, Hidenori Miyazaki, and Kazushi Arata

The acid strength of  $\text{SO}_4^{2-}/\text{SnO}_2$  was higher than that of  $\text{SO}_4^{2-}/\text{ZrO}_2$ , a well known solid superacid.

454 **Synthesis and Properties of Perfluoroalkoxy Substituted Benzoic Acid Derivatives II: Forming Liquid Crystalline Cubic Phases**

Etsushi Nishikawa, Jun Yamamoto, and Hiroshi Yokoyama

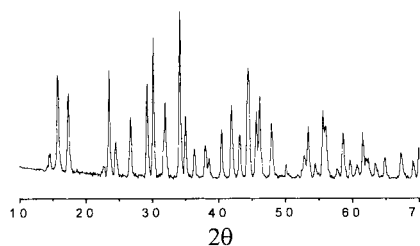


A benzoic acid derivative having a relatively flexible long fluorinated chain was synthesized. This organic acid dimerizing through hydrogen bonding shows a smectic C phase at room temperature. The hydrogen bonded acid/base complex between the acid and 4,4'-dipyridyl exhibits a liquid crystalline cubic phase of a face centered cubic structure with an estimated cell parameter of 10.9 nm.

456 **A New Nonlinear Optical Borate Crystal**  
 $\text{Na}_3\text{La}_2(\text{BO}_3)_3$

Guochun Zhang, Yicheng Wu, Peizhen Fu,  
 Guofu Wang, Shilie Pan, and Chuangtian  
 Chen

A new nonlinear optical crystal was grown by the TSSG method using new flux  $\text{Na}_2\text{CO}_3\text{-H}_3\text{BO}_3\text{-NaF}$ . The crystal was identified as  $\text{Na}_3\text{La}_2(\text{BO}_3)_3$  on the basis of the XRD, IR spectrum, and composition analysis.



458 **Fabrication of Nano-rod Copper-polymer Composites by  $\gamma$ -Irradiation Route in a Heterogeneous System**

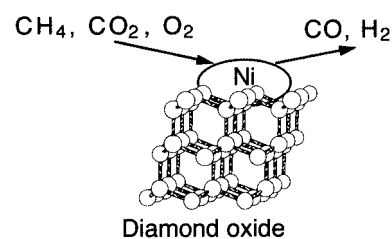
Yonghong Ni, Xuewu Ge, Huarong Liu,  
 Zhicheng Zhang, Qiang Ye, and Feng Wang

The TEM image of nano-rod copper-poly(vinyl acetate) (PVAc) composites which were prepared by  $\gamma$ -irradiation in a heterogeneous system with an upper layer of vinyl acetate monomer and a lower layer of aqueous solution of copper sulfate and EDTA under ambient pressure at room temperature.



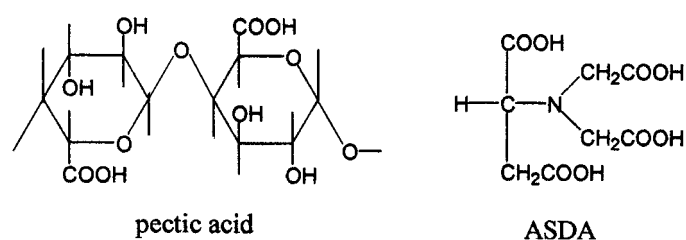
460 **Oxidized Diamond Supported Ni Catalyst for Synthesis Gas Formation from Methane**

Kiyoharu Nakagawa, Hiroaki Nishimoto, Yuji Enoki, Sayaka Egashira, Na-oki Ikenaga, Tetsuhiko Kobayashi, Mikka Nishitani-Gamo, Toshihiro Ando, and Toshimitsu Suzuki



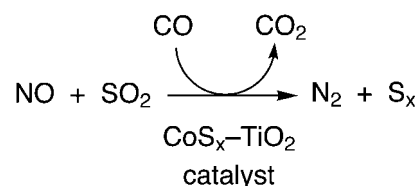
462 **Removal of Lead from Vermiculite by Using L-Asparaginic-N,N-diacetic Acid, a Novel Biodegradable Chelating Reagent, and Depolymerized Pectic Acid**

Guo Xueyi, Katsutoshi Inoue, and Kenji Mishima



464 **Titanium-Promoted Cobalt Sulfide Catalysts for NO Decomposition and Reduction by CO**

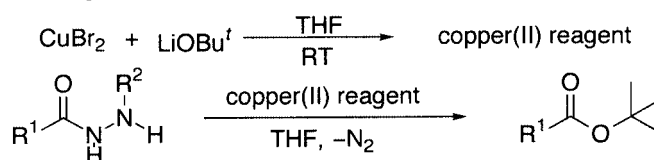
Zhang Zhaoliang, Ma Jun, Liu Zhaoqong,  
 Ren Shaoling, Yang Xiyao, and Kou Yuan



466 **An Oxidative Transformation of *N*'-Phenylhydrazide to *t*-Butyl Ester Using a Copper(II) Halide–Lithium *t*-Butoxide System**

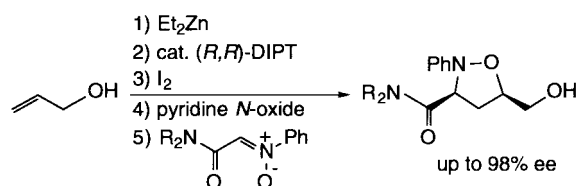
Jun-ichi Yamaguchi, Takashi Aoyagi, Ryohei Fujikura, and Takayuki Suyama

Reactions of hydrazide or *N*'-phenylhydrazide with a copper(II) reagent prepared from copper(II) bromide and lithium *t*-butoxide gave the corresponding *t*-butyl ester.



468 **A Catalytic Asymmetric 1,3-Dipolar Cycloaddition of Nitrones to Allyl Alcohol**

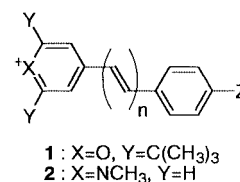
Xia Ding, Katsumi Taniguchi, Yutaka Ukaji, and Katsuhiko Inomata



470 **Styrylpyrylium Derivatives for Second-Order Nonlinear Optics**

Kyoko Tsuji, Shuji Okada, Hidetoshi Oikawa, Hiro Matsuda, and Hachiro Nakanishi

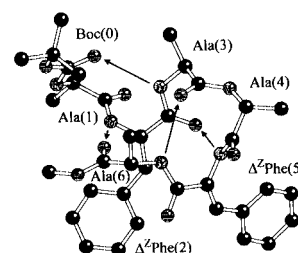
Styrylpyrylium derivatives **1** were found to have larger second-order hyperpolarizabilities ( $\beta$ ) than the corresponding stilbazolium derivatives **2**.



472 **A Novel Looping Structure of Linear Hexapeptide Boc-[D-Ala-(Z)- $\beta$ -phenyldehydroalanine-L-Ala]<sub>2</sub>-OME**

Yoshihito Inai, Tatsuo Oshikawa, Mitsuki Yamashita, Itsuki Kato, and Tadamichi Hirabayashi

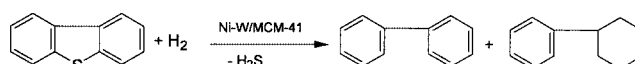
Hexapeptide Boc-(D-Ala- $\Delta^2$ Phe-L-Ala)<sub>2</sub>-OCH<sub>3</sub> [Boc = *tert*-butoxycarbonyl;  $\Delta^2$ Phe = (*Z*)- $\beta$ -phenyldehydroalanine] in the solid state exhibited a novel looping backbone consisting of three partially overlapped  $\beta$ -turns supported by intramolecular (*i*+3) $\rightarrow$ *i* hydrogen bonds. Here the looping backbone also included a  $\beta$ -bend ribbon structure.



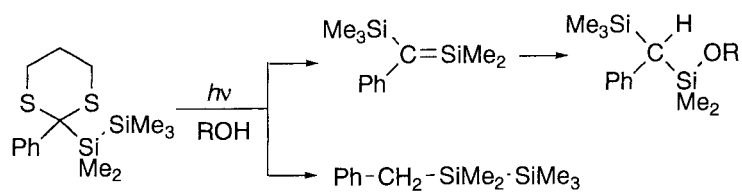
474 **Deep Hydrodesulfurization over W-Based Catalysts Supported by Siliceous MCM-41**

Anjie Wang, Xiang Li, Yongying Chen, Difei Han, Yao Wang, Yongkang Hu, and Toshiaki Kabe

Siliceous MCM-41 is a promising support for preparing deep hydrodesulfurization catalysts.



476 **Synthesis, Structure, and Photochemistry of 2-Silyl- and 2-Disilanyl-2-aryl-1,3-dithiane Derivatives**



Anugula Mahipal Reddy, Shinobu Tsutsui,  
and Kenkichi Sakamoto