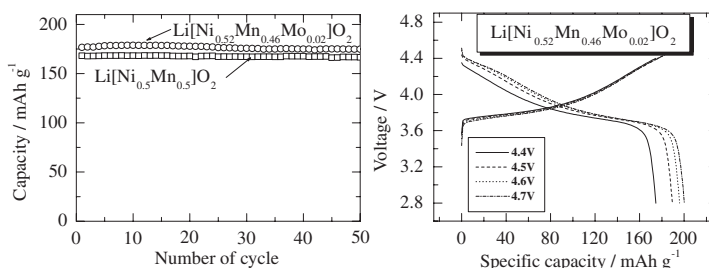


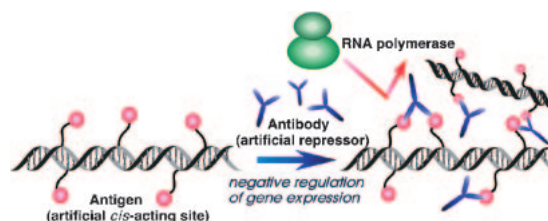
2 **Effects of Molybdenum Doping on the Layered  $\text{Li}[\text{Ni}_{0.5+x}\text{Mn}_{0.5-2x}\text{Mo}_x]\text{O}_2$  Cathode Materials for Lithium Secondary Batteries**

Sang Ho Park, Sung Woo Oh, Sung Goon Kang, Seung-TaeK Myung, and Yang-Kook Sun



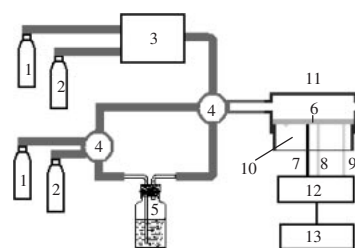
4 **An Artificial Regulation System for DNA-transcription: Learning from Prokaryotic Organisms**

Masaharu Murata, Tomo Yamasaki, Mizuo Maeda, and Yoshiki Katayama



6  **$\text{O}_2$  Gas Sensor Using Supported Hydrophobic Room-temperature Ionic Liquid Membrane-coated electrode**

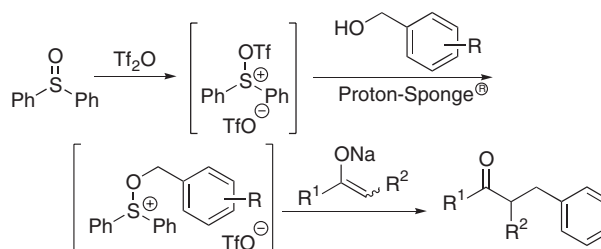
Rong Wang, Satoshi Hoyano, and Takeo Ohsaka



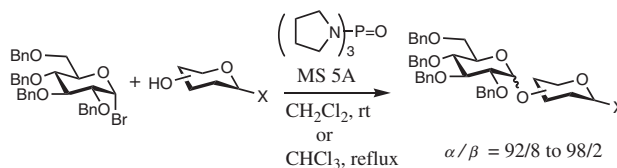
This scheme shows the electrochemical measurement system used in this study, which consists of (1)  $\text{N}_2$  gas tank, (2)  $\text{O}_2$  gas tank, (3) gas blender, (4) valve, (5) bottle containing Milli-Q water, (6) supported BMIPF<sub>6</sub> membrane, (7) GC disk (diameter: 1 mm) working electrode, (8) Ag disk (diameter: 1 mm) reference electrode, (9) Pt ring (width: 1 mm, length: 50 mm) counter electrode, (10) epoxide resin, (11)  $\text{O}_2$  gas-sensing electrode system, (12) potentiostat and (13) computer.

8 **A Facile One-pot Benzylolation of Sodium Enolates Using Trifluoromethanesulfonic Anhydride and Diphenyl Sulfoxide**

Tomofumi Takuwa, Jim Yoshitaka Onishi, Jun-ichi Matsuo, and Teruaki Mukaiyama

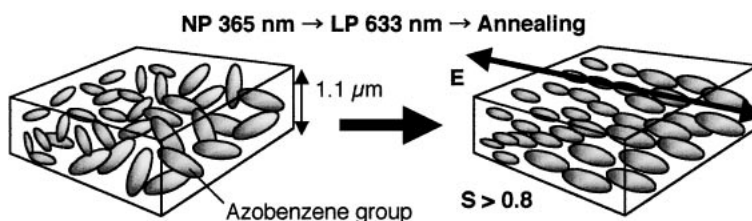


- 10 **Highly  $\alpha$ -Selective Synthesis of Disaccharide Using Glycosyl Bromide by the Promotion of Phosphine Oxide**



Teruaki Mukaiyama and Yohei Kobashi

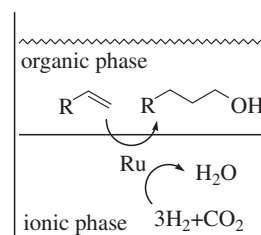
- 12 **Photoinduced Reorientation of Polymethacrylate Film with 4-Methoxyazobenzene Side Groups Using Linearly Polarized He-Ne Laser and Annealing**



Nobuhiro Kawatsuki, Emi Uchida, and Hiroshi Ono

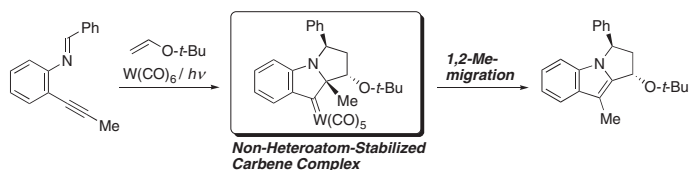
- 14 **Biphasic Hydroformylation of 1-Hexene with Carbon Dioxide Catalyzed by Ruthenium Complex in Ionic Liquids**

In a two-phase system using ionic liquids, a ruthenium complex effectively catalyzed the hydroformylation of 1-hexene with  $\text{CO}_2$  to give corresponding alcohols in good yields.



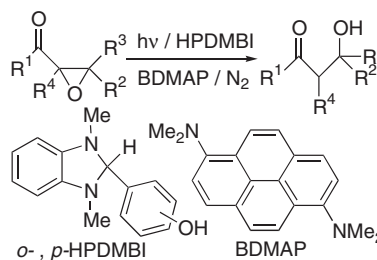
Ken-ichi Tominaga and Yoshiyuki Sasaki

- 16 **Isolation and Reaction of (Indolin-3-ylidene)-pentacarbonyltungsten Generated from Tungsten-containing Azomethine Ylide**



Jun Takaya, Hiroyuki Kusama, and Nobuharu Iwasawa

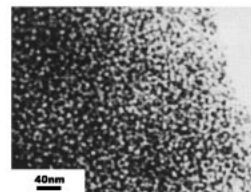
- 18 **2-Hydroxyphenyl-1,3-dimethylbenzimidazolines. Formal Two Hydrogen Atom-Donors for Photoinduced Electron Transfer Reactions**



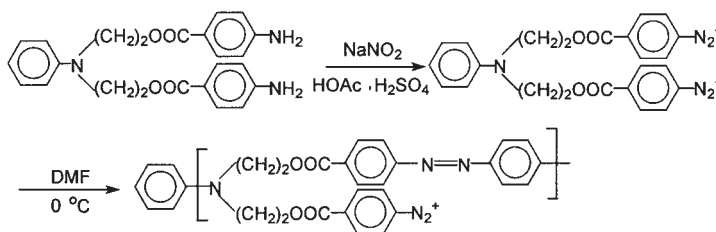
Eietsu Hasegawa, Naoki Chiba, Tomoya Takahashi, Shinya Takizawa, Takashi Kitayama, and Toshio Suzuki

20 **Synthesis of Mesoporous Ce-doped TiO<sub>2</sub> with High Thermal Stability**

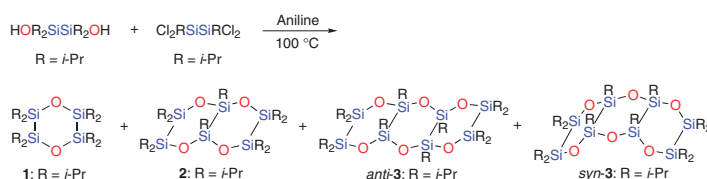
Mesoporous Ce-doped TiO<sub>2</sub> with a high thermal stability was prepared by using inexpensive glycerin as a pore-forming agent via sol-gel and hydrothermal processes.



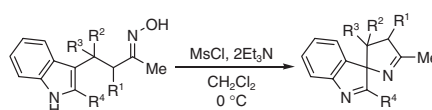
Chao Wang, Hong-an Xi, and Ruo-Ding Wang

22 **Synthesizing Hyperbranched Azo Polymer through Azo-coupling Reaction**

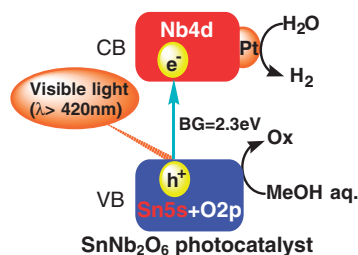
Pengchao Che, Yaning He, Yue Zhang, and Xiaogong Wang

24 **Bicyclic and Tricyclic Ladder Compounds Consisting of Two Oligosiloxane Chains Bridged by Si-Si Rungs**

Soichiro Kyushin, Masaki Takahashi, and Hideyuki Matsumoto

26 **Synthesis of Spiro[indoline-3,2'-pyrrolidine] Derivatives from  $\beta$ -3-Indolyl Ketone Oximes**

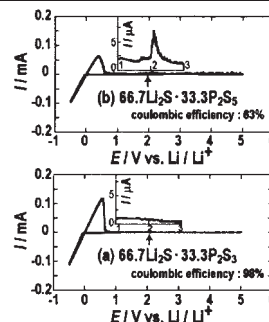
Kenichi Tanaka, Yutaka Mori, and Koichi Narasaka

28 **Energy Structure and Photocatalytic Activity of Niobates and Tantalates Containing Sn(II) with a 5s<sup>2</sup> Electron Configuration**

Yasuhiro Hosogi, Kentaro Tanabe, Hideki Kato, Hisayoshi Kobayashi, and Akihiko Kudo

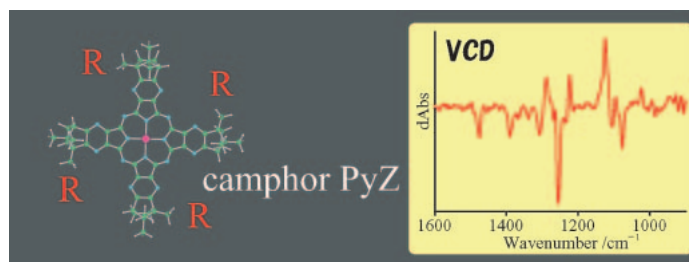
30 **A New Amorphous Lithium-ion Conductor in the System  $\text{Li}_2\text{S}-\text{P}_2\text{S}_3$**

Nobuya Machida, Hidekazu Yamamoto, and Toshihiko Shigematsu



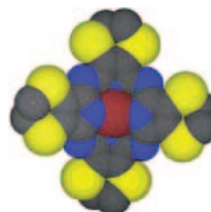
32 **First Observation of the Vibrational Circular Dichroism Spectra of Synthetic Chiral Porphyrazines**

Nagao Kobayashi and Takamitsu Fukuda



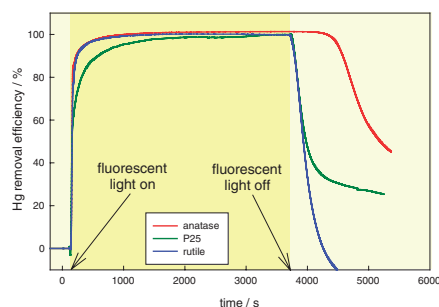
34 **A Novel Catalyst Iron(II) Tetra(1,4-dithin)-porphyrazine for Oxygenating Degradation of Organic Pollutants in Aqueous Solutions**

Kejian Deng, Fei Huang, Duoyuan Wang, Zhenghe Peng, and Yunhong Zhou



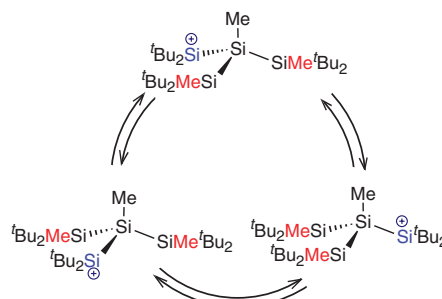
36 **Comparison of Mercury Removal Efficiency from a Simulated Exhaust Gas by Several Types of  $\text{TiO}_2$  under Various Light Sources**

Yong Gyu Lee, Jin-Won Park, Jung-Hyun Kim, Byoung Ryul Min, Jongsoo Jung, Jinsoo Kim, and Tai Gyu Lee



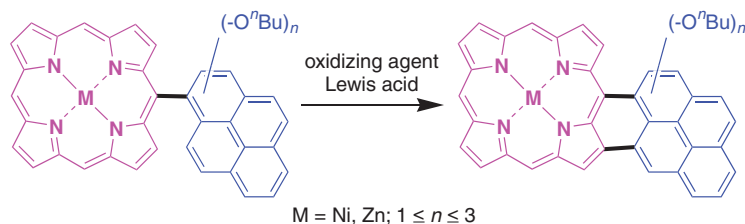
38 **Silylium Ion to Silylium Ion Rearrangement Caused by 1,3-Methyl Migration**

Masaaki Nakamoto, Tomohide Fukawa, and Akira Sekiguchi

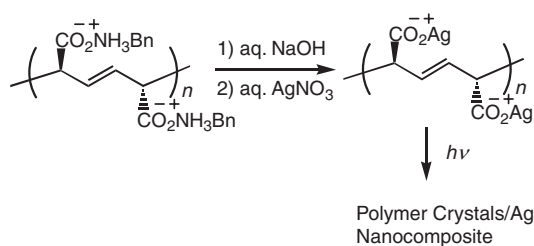


40 **Pyrene-Fused Porphyrins: Annulation Reactions of *meso*-Pyrenylporphyrins**

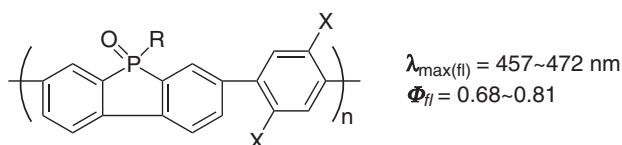
Osamu Yamane, Ken-ichi Sugiura, Hitoshi Miyasaka, Kazuya Nakamura, Tatsuhiko Fujimoto, Kazuki Nakamura, Takahiro Kaneda, Yoshiteru Sakata, and Masahiro Yamashita

42 **Fabrication of Polymer Crystals/Ag Nanocomposite by Intercalation**

Akikazu Matsumoto and Toru Odani

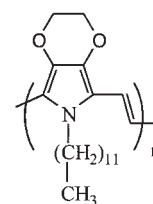
44 **Poly[2,7-(9-oxo-9-phosphafluorenylene)-*alt*-co-(1,4-arylene)]s: Phosphorus-containing  $\pi$ -Conjugated Polymers**

Yoshikazu Makioka, Teruyuki Hayashi, and Masato Tanaka

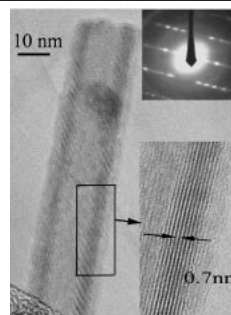
46 **New Conducting Polymers Based on Poly(3,4-ethylenedioxyppyrrrole): Synthesis, Characterization, and Properties**

In Tae Kim, Jung Youl Lee, and Sang Woo Lee

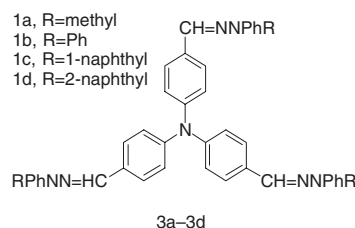
Solution-processible conducting polymers based on 3,4-ethylenedioxyppyrrrole were efficiently synthesized. A comparison of the polymers' optical and electrical properties showed that the introduction of a vinyl group in the polymer produced a decrease of bandgap.

48 **Rational Synthetic Strategy. From Layered Structure to MnO<sub>2</sub> Nanotubes**

Xun Wang and Yadong Li



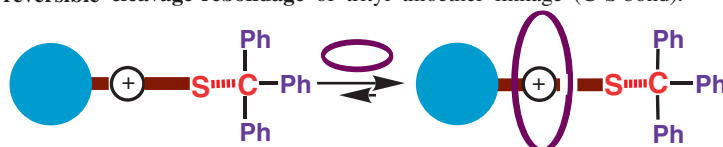
50 **Synthesis and Properties of Amorphous Hole Transport Materials of Triphenylamine Based Trihydrazones**



Ke Jian Jiang, Ya Li Sun, Ke Feng Shao, and Lian Ming Yang

52 **Dynamic Covalent Chemistry in Rotaxane Synthesis. Slipping Approach to [2]Rotaxane Utilizing Reversible Cleavage-Rebondage of Trityl Thioether Linkage**

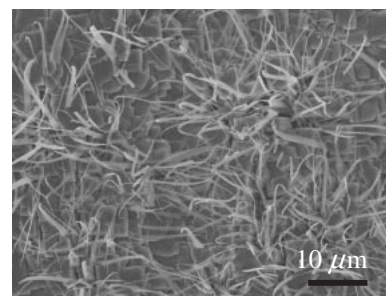
[2]Rotaxane was synthesized through a slipping approach by utilizing the reversible cleavage-rebondage of trityl thioether linkage (C-S bond).



Yoshio Furusho, Tomoya Oku, G. Abraham Rajkumar, and Toshikazu Takata

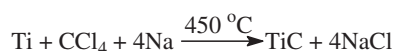
54 **Novel Synthesis of Tin Dioxide Nanoribbons via a Mild Solution Approach**

Single crystalline tin dioxide nanoribbons have been synthesized in bulk quantity by a mild solution approach.



Changhui Ye, Xiaosheng Fang, Yin Hai Wang, Ting Xie, Aiwu Zhao, and Lide Zhang

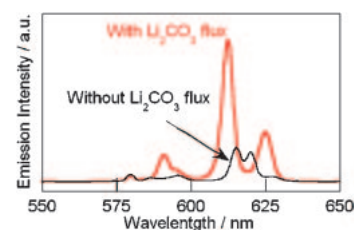
56 **Formation of Nanocrystalline TiC by a Low-temperature Route**



Liang Shi, Yunle Gu, Luyang Chen, Zeheng Yang, Jianhua Ma, and Yitai Qian

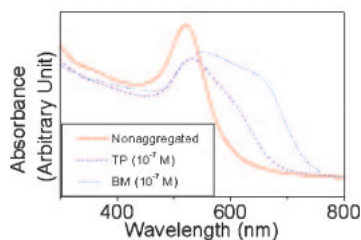
58 **Lithium Carbonate Flux Effects on the Luminescence Properties of Europium-doped Lanthanum Oxycarbonate Phosphor**

Lithium carbonate flux was introduced in the preparation of the  $\text{La}_2\text{O}_2\text{CO}_3: \text{Eu}^{3+}$  oxycarbonate phosphor particles in order to greatly improve the crystallinity of oxycarbonate accompanying the phase transition, resulting in increase of the emission intensity.



Shinji Tamura, Kazuhiko Koyabu, Toshiyuki Masui, and Nobuhito Imanaka

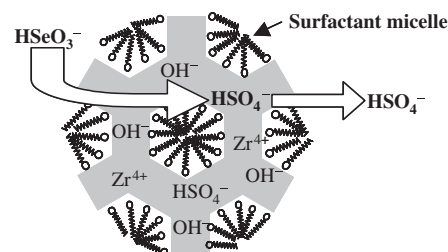
- 60 **Adsorption of Aromatic Thiols on Gold Nanoparticle Surfaces Investigated by UV-Vis Absorption Spectroscopy and Surface Enhanced Raman Scattering**



Sang-Woo Joo

- 62 **Zirconium Sulfate-Surfactant Micelle Mesostucture as an Effective Remover of Selenite Ion**

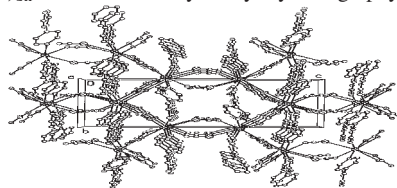
Effective removal of  $\text{HSeO}_3^-$  was accomplished through anion exchange reaction on zirconium sulfate-surfactant micelle mesostructure.



Hitoshi Takada, Yoshimasa Watanabe, and Masakazu Iwamoto

- 64 **Direct Synthesis of the Novel 2-D Mixed-ligands Lead(II) Complex, Crystal Structure of  $[\text{Pb}(4,4'\text{-bpy})(\text{NO}_3)(\text{SCN})]_n$  ( $4,4'\text{-bpy} = 4,4'\text{-bipyridine}$ ): (A New Polymeric Compound with Three Bridged Ligand and Inactive Lone Pair)**

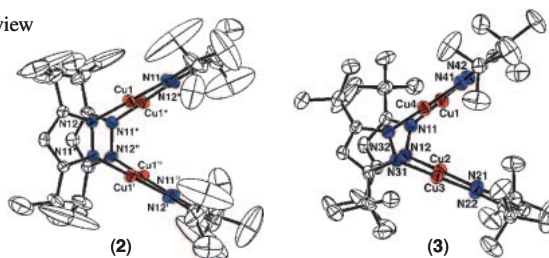
A Lead (II) complex with three ligands, 4,4'-bipyridine, nitrate and thiocyanate, has been synthesized and the structure of  $[\text{Pb}(4,4'\text{-bpy})(\text{NO}_3)(\text{SCN})]_n$  was confirmed by X-ray crystallography.



A. Morsali and A. R. Mahjoub

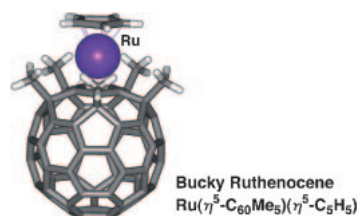
- 66 **Crystal Structure of Pyrazolato-bridged Copper(I) Polynuclear Complexes**

Side view



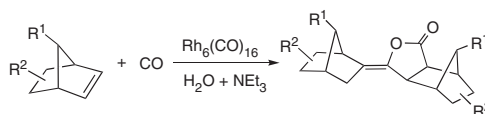
Kiyoshi Fujisawa, Yoko Ishikawa, Yoshitaro Miyashita, and Ken-ichi Okamoto

- 68 **Synthesis and Reactivity of Bucky Ruthenocene  $\text{Ru}(\eta^5\text{-C}_{60}\text{Me}_5)(\eta^5\text{-C}_5\text{H}_5)$**



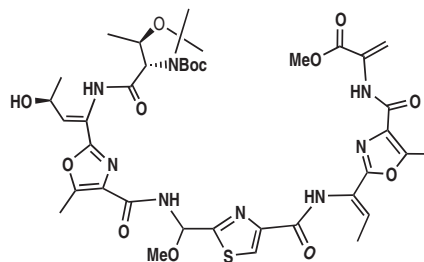
Yutaka Matsuo, Yoichiro Kuninobu, Shingo Ito, and Eiichi Nakamura

- 70 **Rhodium-Catalyzed Carbonylation of Norbornene under Water-Gas-Shift Reaction Conditions. Selective Formation of Co-dimeres with Lactone Terminus**



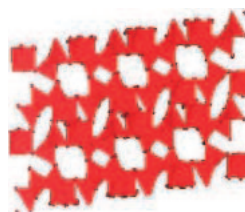
Da-Yang Zhou, Shi-Wei Zhang, Kiyotaka Onitsuka, and Shigetoshi Takahashi

- 72 **Convenient Synthesis of the Main Tridehydropentapeptide Skeleton for a Macrocyclic Antibiotic, Sulfomycin I**



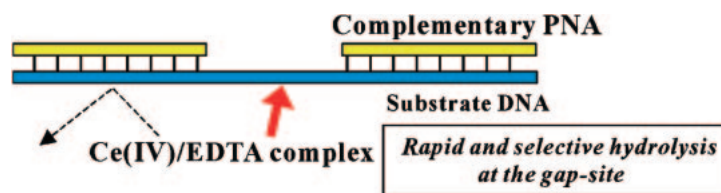
Tetsuya Kayano, Yasuchika Yonezawa, and Chung-gi Shin

- 74 **The Hydrothermal Synthesis and Crystal Structure of  $(\text{H}_2\text{O})[\text{Ge}_5\text{O}_{10}]$  and  $[(\text{CH}_3)_4\text{N}][\text{Ge}_{10}\text{O}_{20}\text{OH}]$ , Two Novel Porous Germanates**



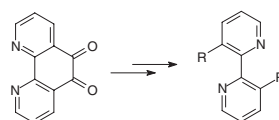
Yan Xu, Wei Fan, Naotaka Chino, Kazuhiro Uehara, Shirou Hikichi, Noritaka Mizuno, Masaru Ogura, and Tatsuya Okubo

- 76 **Peptide Nucleic Acid for Rapid Gap-selective Hydrolysis of DNA by Ce(IV)/EDTA Complex**



Yoji Yamamoto and Makoto Komiyama

- 78 **Synthesis of 3,3'-Disubstituted-2,2'-bipyridines from 1,10-Phenanthroline-5,6-quinone**



A new methodology for the syntheses of 3,3'-disubstituted 2,2'-bipyridines based on addition of Grignard reagents, followed by ring cleavage is described

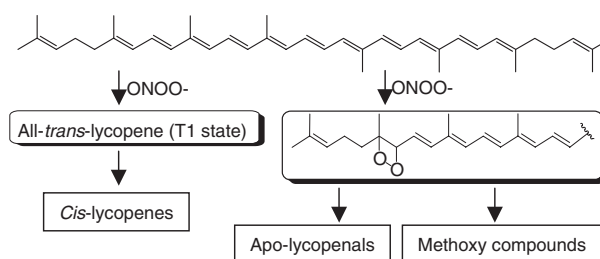
Costa Conn and Ronald Shimon



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**80 Quenching of Peroxynitrite by Lycopene in Vitro**

Tadashi Yokota, Teturo Ohtake, Hajime Ishikawa, Takahiro Inakuma, Yukio Ishiguro, Junji Terao, Akihiko Nagao, and Hideo Etoh



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**Additions and Corrections****82 Behavior of By-products during Direct-photodegradation Treatment of Trichloroethylene. Effect of Oxygen Concentration on Production of By-products**

Shin Yamamoto, Takashi Amemiya, Masayuki Murabayashi, and Kiminori Itoh

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