

Chemistry Letters

Highlight Review

Synthesis, Structure, and Dynamic Behavior of Concrete Metallacyclic Rotors

Arumugam Thanasekaran, Chia-Yuan Huang, and
Lieh Lu*

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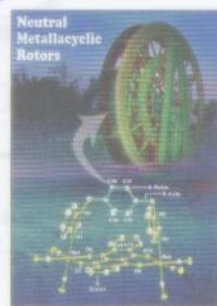


Highlight Review

- 776 Synthesis, Structure, and Dynamic Behavior of Discrete Metallaacyclic Rotors

Pounraj Thanasekaran, Chia-Yuan Huang, and Kuang-Lieh Lu*

doi:10.1246/cl.130455



In this highlight review, we describe synthetic approaches, structural characterization, and dynamic behavior of discrete metallaacyclic rotors in solution and on solid surfaces.

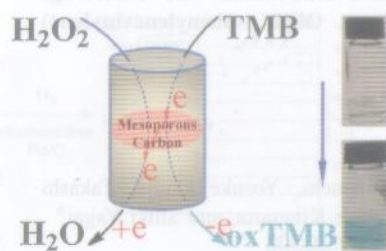
Letter

- 785 Intrinsic Peroxidase-like Catalytic Activity of Hydrophilic Mesoporous Carbons

Meng Huang, Jinlou Gu,* S. P. Elangovan, Yongsheng Li, Wenru Zhao, Toshio Iijima, Yasuo Yamazaki, and Jianlin Shi*

doi:10.1246/cl.130148

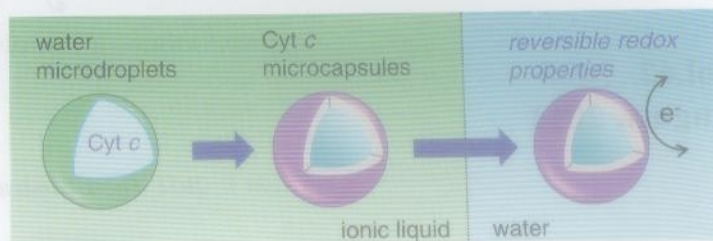
Electronic Supporting Information



788 Redox-active Microcapsules of Cytochrome *c* Formed at the Ionic Liquid–Water Interface

Masa-aki Morikawa,* Risa Nii, and Nobuo Kimizuka*
doi:10.1246/cl.130249

Electronic Supporting Information

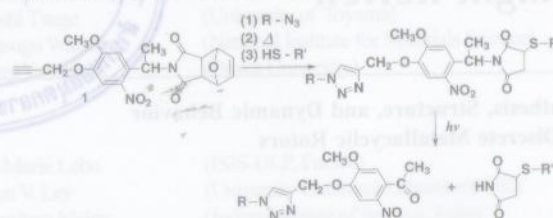


791 A Heterobifunctional Linker Bearing Azide-reactive Alkyne and Thiol-reactive Maleimide Connected with *N*-(2-Nitrobenzyl)imide to Synthesize Photocleavable Diblock Copolymers

Shota Yamamoto, Seiichi Nakahama, and Kazuo Yamaguchi*
doi:10.1246/cl.130235

Electronic Supporting Information

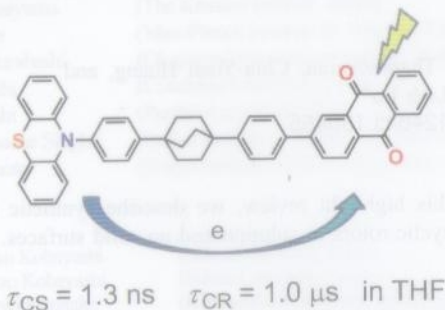
A novel photocleavable heterobifunctional linker **1** connected with *N*-(2-nitrobenzyl)imide has been developed, which is coupled with click reactions. Photocleavable diblock copolymers are easily synthesized, using **1** in high yields.



794 Photoinduced Charge Separation of 10-Phenyl-10*H*-phenothiazine-2-Phenylanthraquinone Dyad Bridged by Bicyclo[2.2.2]octane

Ayumu Karimata, Hidetoshi Kawauchi, Shuichi Suzuki, Masatoshi Kozaki, Noriaki Ikeda,* Kazutoshi Keyaki, Koichi Nozaki,* Kimio Akiyama,* and Keiji Okada*
doi:10.1246/cl.130062

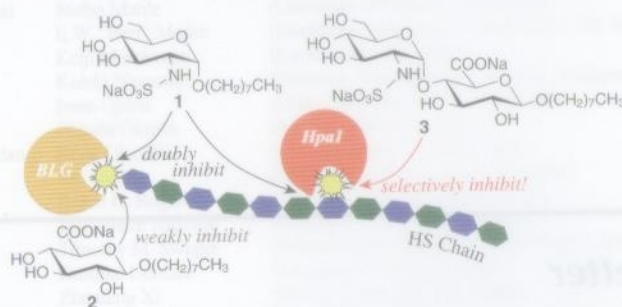
Electronic Supporting Information



797 Development of Novel Inhibitors Specific for Human Heparanase-1

Masashi Ohmae,* Yuki Fujita, Junko Takada, and Shunsaku Kimura
doi:10.1246/cl.130231

Electronic Supporting Information

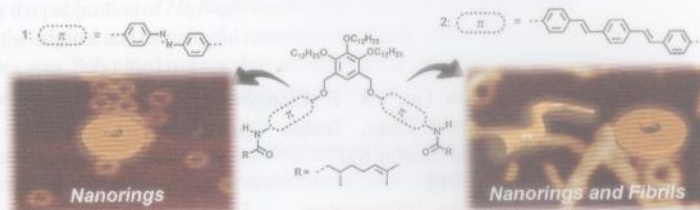


799 Self-assembled Nanofibrils and Nanorings Formed from Oligo(*p*-phenylenevinylene) Dimers

Mitsuaki Yamauchi, Yosuke Chiba, Takashi Karatsu, Akihide Kitamura, and Shiki Yagai*
doi:10.1246/cl.130303

Electronic Supporting Information

Azobenzene dimer **1** self-aggregates to form uniform ring-shaped nanoarchitectures in nonpolar solvents. On the other hand, oligo(*p*-phenylenevinylene) dimer **2** self-aggregates to form not only nanorings but also extended fibrils through different aggregation pathway.

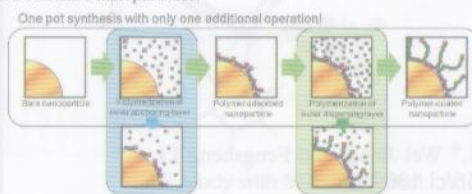


801 **Efficient Production of Block-copolymer-coated Ceramic Nanoparticles by Sequential Reversible Addition–Fragmentation Chain-transfer Polymerizations with Particles (SqRAFTwP)**

Toshihiko Arita
doi:10.1246/cl.130272

[Electronic Supporting Information](#)

The method of sequential reversible addition–fragmentation chain-transfer polymerizations with particles (SqRAFTwP) was developed. The method enables us to easily prepare densely and stably polymer-coated ceramics NPs with almost free from the limitations of the material of the inorganic ceramics. The method is also suitable for mass production of polymer-coated ceramics nanoparticles.

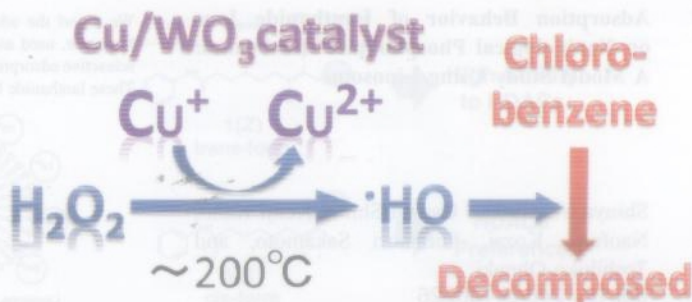


Editor's Choice

804 **Enhancement of Hydrothermal Oxidation of Chlorobenzene by the Fenton-type Reaction Using Cu(II)-grafted Tungsten Trioxide Catalyst**

Noritsugu Kometani* and Yasuaki Sumiyoshi
doi:10.1246/cl.130313

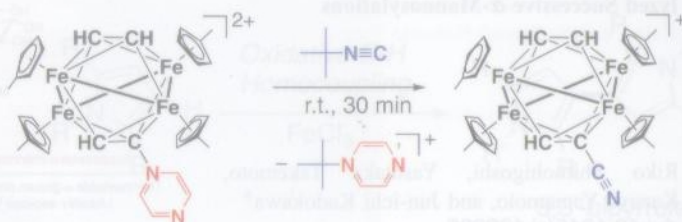
[Electronic Supporting Information](#)



807 **C(sp³)–N(sp) Bond Cleavage of Isocyanides at a Cationic [CCH] Subunit in a Bisdiphenoidal Eight-atom Tetrairon–Tetracarbon Cluster**

Wataru Taniwaki and Masaaki Okazaki*
doi:10.1246/cl.130337

[Electronic Supporting Information](#)



Editor's Choice

810 **Optimum Particle Size of ZnO for Dye-sensitized Solar Cells**

Nobuya Sakai, Ryo Usui, and Takuro N. Murakami*
doi:10.1246/cl.130315

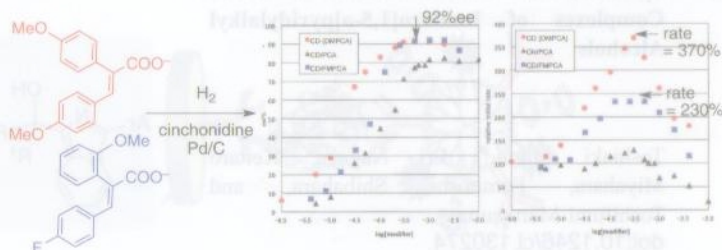
After sintering, ZnO particles with a size of 40 nm exhibited the largest surface area, highest photocurrent, and best photovoltaic performance.



813 **Anomalous Ligand Acceleration on Cinchona-modified Pd/C during Asymmetric Hydrogenation of Properly Substituted Phenylcinnamic Acid**

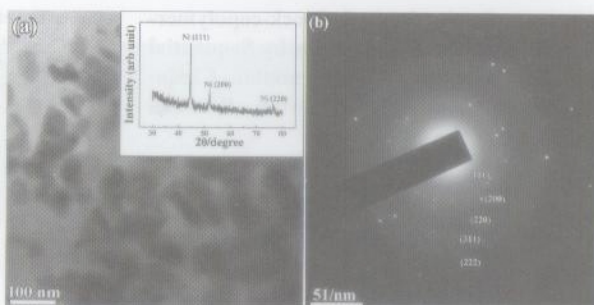
Hiroyuki Ogawa, Takuya Mameda, Tomonori Misaki, Yasuaki Okamoto, and Takashi Sugimura*
doi:10.1246/cl.130245

[Electronic Supporting Information](#)



- 816 **Unexpected Occurrence of Face-centered-cubic Nickel Phase in Air-atmosphere Sol-Gel Process**

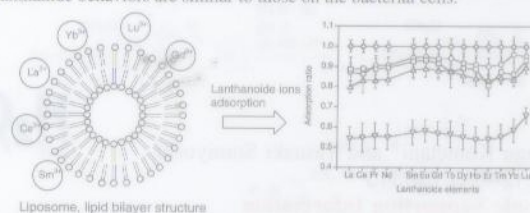
Pingyun Li,* Wei Jiang, and Fengsheng Li
doi:10.1246/cl.130213



- 819 **Adsorption Behavior of Lanthanide Ions on Nonbiological Phospholipid Membranes: A Model Study Using Liposome**

Shinya Yamasaki,* Osamu Shirai, Kenji Kano, Naofumi Kozai, Fuminori Sakamoto, and Toshihiko Ohnuki
doi:10.1246/cl.130226

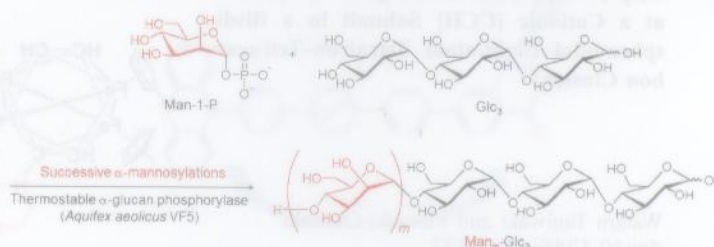
We report the adsorption behavior of lanthanide ions on spherical lipid bilayer membrane, liposome, used as a model of biological cell membranes without any biological activity. The selective adsorption and pH dependence of the lanthanide ions on the liposomes were observed. These lanthanide behaviors are similar to those on the bacterial cells.



- 822 **Thermostable α -Glucan Phosphorylase-catalyzed Successive α -Mannosylations**

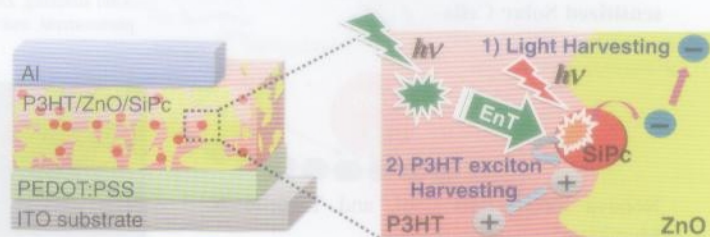
Riko Shimohigoshi, Yasutaka Takemoto, Kazuya Yamamoto, and Jun-ichi Kadokawa*
doi:10.1246/cl.130286

Electronic Supporting Information



- 825 **Dye Sensitization in Polymer/ZnO/Dye Ternary Hybrid Solar Cells**

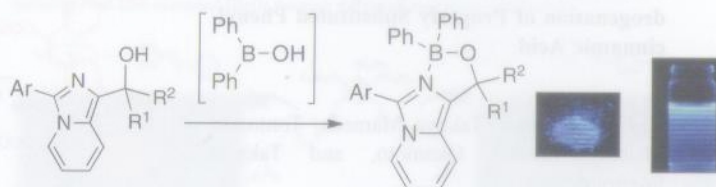
Hyung Do Kim, Hideo Ohkita,* Hiroaki Bente, and Shinzaburo Ito
doi:10.1246/cl.130265



- 828 **Synthesis and Characterization of Boron Complexes of Imidazo[1,5-a]pyridylalkyl Alcohols**

Toshiaki Murai,* Eri Nagaya, Keitaro Miyahara, Fumitoshi Shibahara, and Toshifumi Maruyama
doi:10.1246/cl.130274

Electronic Supporting Information

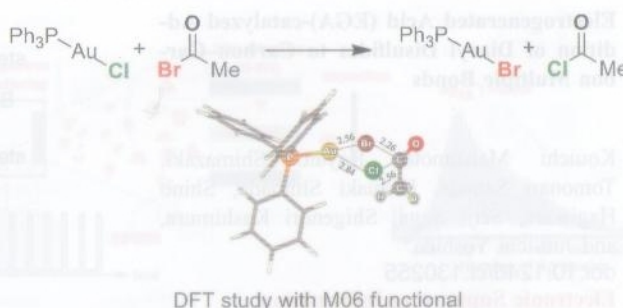


- 831 **Facile Method of Halogen Exchange between Au(Cl)(L) and MeC(O)X (L = PPh₃ and IPr; X = Br and I) via σ -Bond Metathesis Supported by DFT Calculation**

Atsushi Sanagawa, Hitoshi Kuniyasu,*
Takanori Iwasaki, Nobuaki Kambe,* Karan
Bobuatong, and Masahiro Ehara*

doi:10.1246/cl.130335

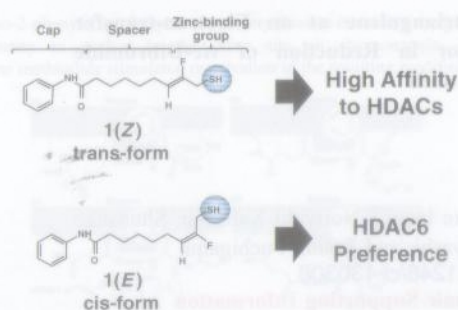
Electronic Supporting Information



- 833 **Effects of *E/Z* Configuration of Fluoroalkene-containing HDAC Inhibitors on Selectivity for HDAC Isoforms**

Yoshiro Chuman, Mariko Ueyama, Satoshi
Sano, Fei Wu, Yuhei Kiyota, Takayoshi
Higashi, Satoshi Osada,* and Kazuyasu
Sakaguchi*

doi:10.1246/cl.130243

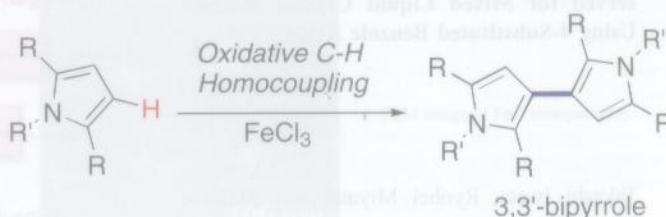


- 836 **Straightforward Approach to Synthesize 3,3'-Bipyrroles by Oxidative Homocoupling of 1,2,5-Trisubstituted Pyrroles**

Tao Yin and Ruimao Hua*

doi:10.1246/cl.130253

Electronic Supporting Information



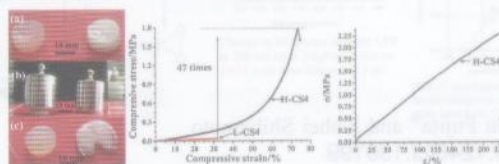
- 838 **High-strength Chitosan Hydrogels Prepared from LiOH/Urea Solvent System**

Yongfu Sun, Youliang Li, Jingyi Nie, Zhengke
Wang,* and Qiaoling Hu*

doi:10.1246/cl.130266

Electronic Supporting Information

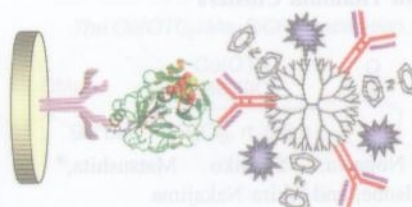
High-strength chitosan hydrogels (H-CS) were prepared without external crosslinker based on a LiOH/urea solvent system. The resultant H-CS hydrogels showed much better mechanical properties than conventional chitosan hydrogels (L-CS). Mechanical properties of H-CS can be tuned by adjusting the concentration of chitosan solution. SEM images of freeze-dried H-CS hydrogels displayed well-defined, interconnected, three-dimensional porous network structures which could greatly improve their mechanical properties.



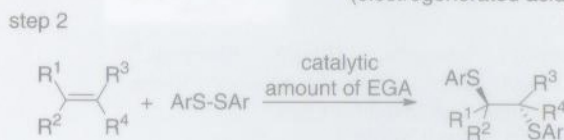
- 841 **Redox-active and Catalytic-efficient PAMAM Dendrimer Nanostructures for Sensing Low-abundance Protein with Signal Amplification**

Xiaomei Pei,* Zonghui Xu, Jiayu Zhang, Zhe
Liu, and Jinnian Tian

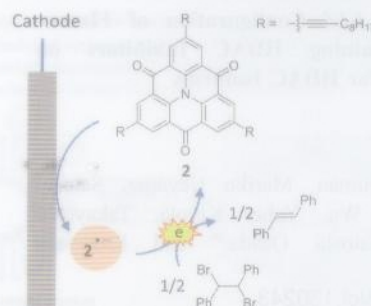
doi:10.1246/cl.130278



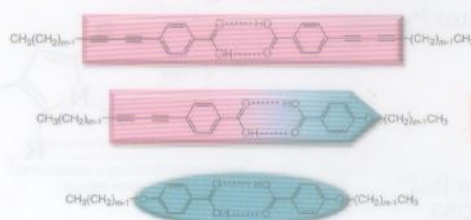
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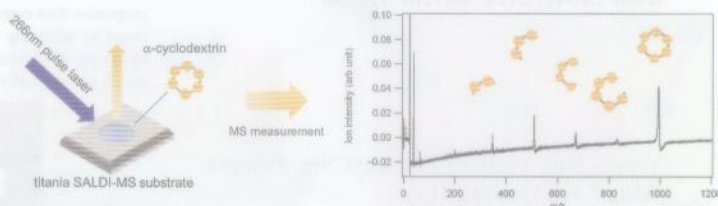


- Takashi Iwata, Ryohei Miyata, and Akikazu Matsumoto*



Discotic & Smectic Liquid Crystals

- Takashi Fujita* and Kohei Shibamoto
doi:10.1246/cl.130199



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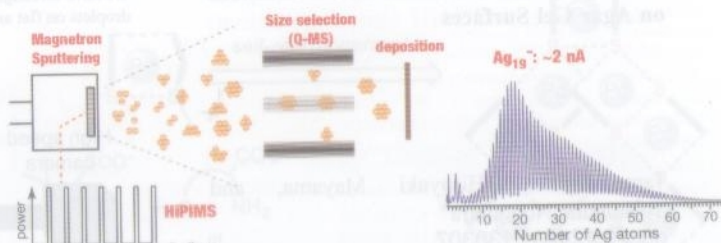


857 Development of High-flux Ion Source for Size-selected Nanocluster Ions Based on High-power Impulse Magnetron Sputtering

Hironori Tsunoyama, Chuhan Zhang, Hiroki Akatsuka, Hiroki Sekiya, Tomomi Nagase, and Atsushi Nakajima*

doi:10.1246/cl.130247

Electronic Supporting Information



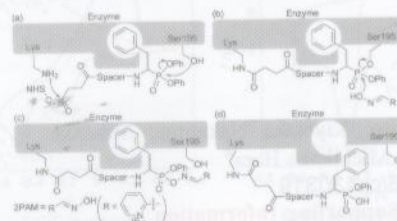
860 Site-selective Chemical Modification of Chymotrypsin Using a Peptidyl Diphenyl 1-Amino-2-phenylethylphosphonate Derivative

Shin Ono,* Junya Murai, Takahiko Nakai, Hirofumi Kuroda, Yoshikazu Horino, Toshiaki Yoshimura, Hiroshi Oyama, and Masahito Umezaki

doi:10.1246/cl.130244

Electronic Supporting Information

Diphenyl 1-amino-2-phenylethylphosphonate moiety fixed at the active site gave the molecule a good opportunity to anchor to the other site on chymotrypsin. The action of 2-pyridinaldoxime methiodide stimulated reactivation of the resulting modified chymotrypsin.

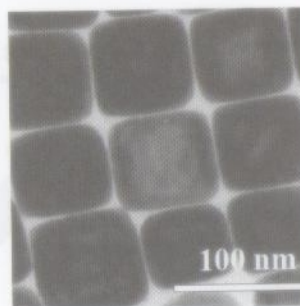


863 Preparation of Wüstite Nanoparticles by a Solventless Synthetic Procedure

Masafumi Nakaya,* Ryo Nishida, and Atsushi Muramatsu

doi:10.1246/cl.130233

Electronic Supporting Information



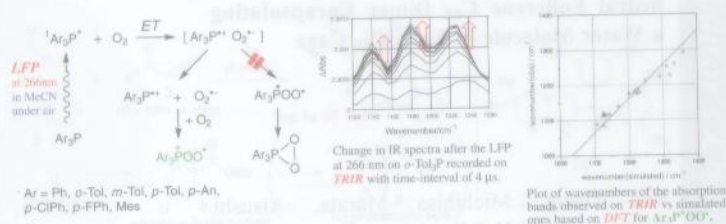
TEM image of FeO nanoparticles.

866 DFT Computations to Simulate the IR Spectrum of a Transient Intermediate Generated upon Laser Flash Photolysis of Triarylphosphines

Shinro Yasui,* Md. Mizanur Rahman Badal, Shinjiro Kobayashi, and Masaaki Mishima

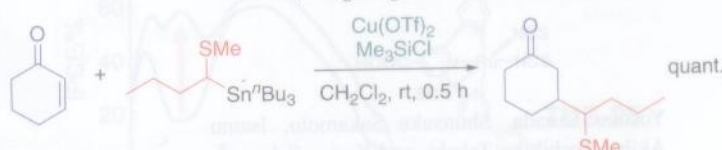
doi:10.1246/cl.130258

Electronic Supporting Information

869 Conjugate Addition of α -Sulfur-substituted Alkylstannanes to α,β -Unsaturated Ketones Mediated by a Copper(II) Triflate and Chlorotrimethylsilane Combination

Hirota Kagoshima* and Takeshi Yahagi

doi:10.1246/cl.130284



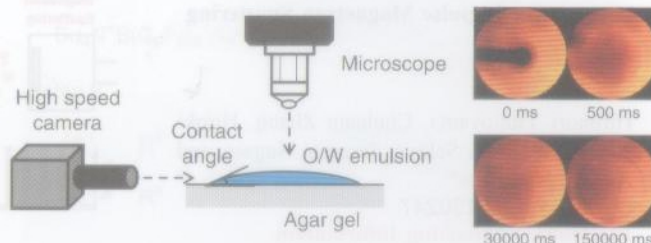
871 **Wetting Dynamics of Oil-in-water Emulsions on Agar Gel Surfaces**

Taro Oyama, Hiroyuki Mayama, and
Yoshimune Nonomura*

doi:10.1246/cl.130307

Electronic Supporting Information

We have investigated the spreading process of oil-in-water emulsions containing oleic acid droplets on flat and rough fractal agar gel surfaces.

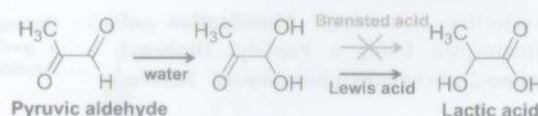


873 **Efficient Conversion of Pyruvic Aldehyde into Lactic Acid by Lewis Acid Catalyst in Water**

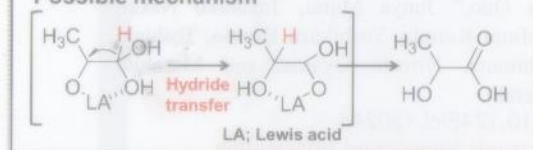
Yusuke Koito, Kiyotaka Nakajima, Masaaki
Kitano, and Michikazu Hara*

doi:10.1246/cl.130319

Electronic Supporting Information



Possible mechanism

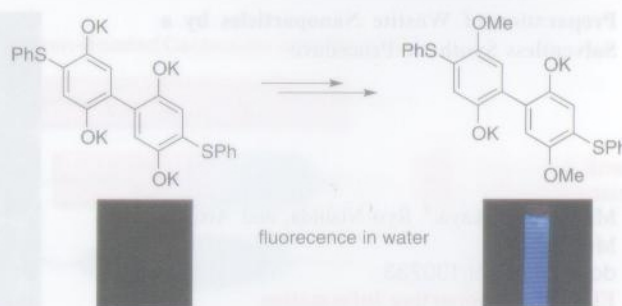


876 **A New Water-soluble Fluorescent Dye Based on 2-Sulfanyhydroquinone Dimers**

Tomomi Nokubi, Kotaro Nasu, Ryusuke
Watanabe, and Akio Kamimura*

doi:10.1246/cl.130348

Electronic Supporting Information



879 **Synthesis and X-ray Structure of Endohedral Fullerene C₆₀ Dimer Encapsulating a Water Molecule in Each C₆₀ Cage**

Rui Zhang, Michihisa Murata, Atsushi
Wakamiya, and Yasujiro Murata*

doi:10.1246/cl.130358

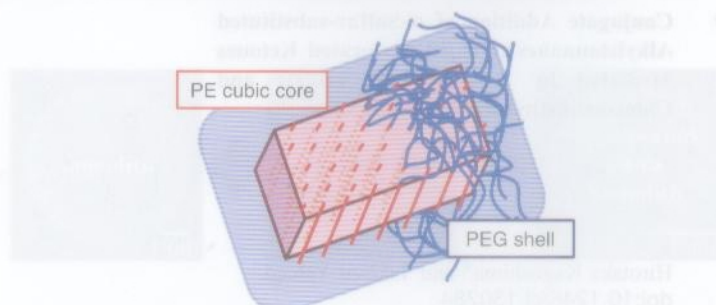


882 **Structural Analysis of a Polymeric Micelle Made from AB₃-type Multiarmed Star-like Block Copolymer in an Aqueous Solution**

Yusuke Sanada, Shunsuke Sakamoto, Isamu
Akiba, Toshihiko Takaki, and Kazuo Sakurai*

doi:10.1246/cl.130285

Electronic Supporting Information

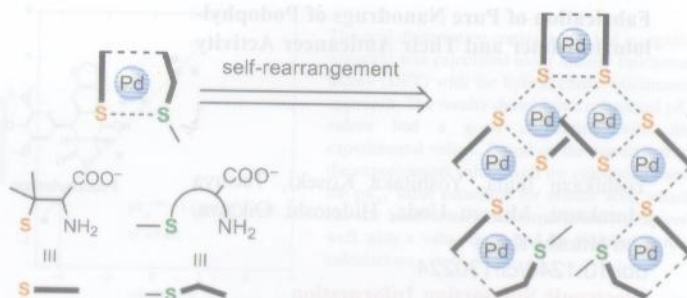


- 885 **Heteroleptic Palladium(II) Complexes with Mixed Thiol- and Sulfide-containing Amino Acids: Self-assembly of Novel Hepta-nuclear Coordination Oligomers**

Anzu Yokoi, Nobuto Yoshinari, and Takumi Konno*

doi:10.1246/cl.130318

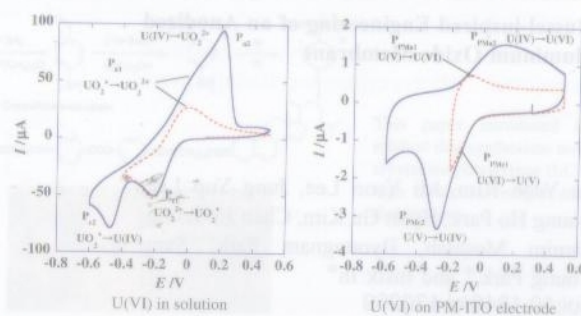
Electronic Supporting Information



- 888 **Redox Behavior of Uranium(VI) Adsorbed onto a Phosphate-modified Indium Tin Oxide Electrode**

Yoshinori Suzuki,* Takuya Nankawa, and Toshihiko Ohnuki

doi:10.1246/cl.130329

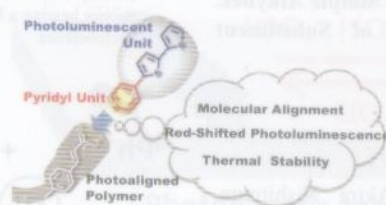


- 891 **Tuning Thermal Stability, Photoluminescent Wavelength, and Optical Anisotropy of Oligothiophenes with Pyridyl End Groups by Using a Hydrogen-bonded Photocross-linkable Liquid-crystalline Polymer Film**

Mizuho Kondo,* Jun-ichi Miyake, Kentaro Okumoto, Hiroshi Shoji, and Nobuhiro Kawatsuki*

doi:10.1246/cl.130365

Electronic Supporting Information



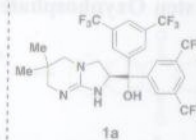
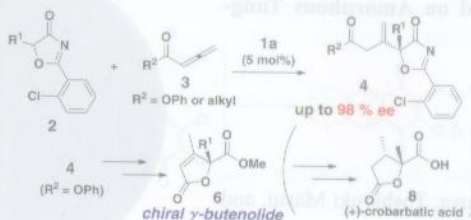
Asymmetric oligothiophenes with pyridine end groups can be easily protonated with a carboxylic acid, which results in changes to their absorption and photoluminescence spectra. In this work, we prepared asymmetric oligothiophenes and coated them onto a uniaxially photoaligned acid polymer film, causing them to exhibit large optical anisotropy and linearly polarized photoluminescence parallel to the orientation direction of the aligned film.

- 894 **1,4-Addition Reaction of 5H-Oxazol-4-ones to Allenic Esters and Ketones Catalyzed by Chiral Guanidines**

Nari Jin, Tomonori Misaki,* and Takashi Sugimura*

doi:10.1246/cl.130295

Electronic Supporting Information



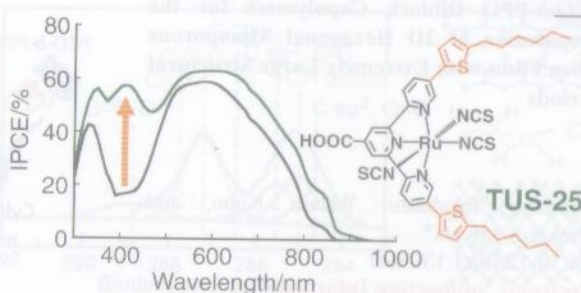
Editor's Choice

- 897 **Synthesis and Characterization of a Novel Ruthenium Sensitizer with a Hexylthiophene-functionalized Terpyridine Ligand for Dye-sensitized Solar Cells**

Hironobu Ozawa, Yasuyuki Yamamoto, Kei Fukushima, Satoshi Yamashita, and Hironori Arakawa*

doi:10.1246/cl.130217

Electronic Supporting Information

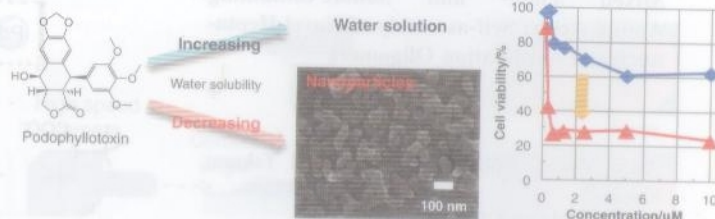


900 **Fabrication of Pure Nanodrugs of Podophyllotoxin Dimer and Their Anticancer Activity**

Yoshikazu Ikuta, Yoshitaka Koseki, Tatsuya Murakami, Minoru Ueda, Hidetoshi Oikawa, and Hitoshi Kasai*

doi:10.1246/cl.130224

Electronic Supporting Information

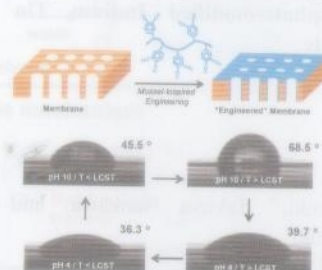


902 **Mussel-inspired Engineering of an Anodized Aluminum Oxide Membrane**

So Yeon Kim, Mi Yeon Lee, Jung Yup Lee, Young Ho Park, Hyun Gu Kim, Chan Jin Jeong, Tamim Mosaiah, Byoungnam Park, Sung Young Park,* and Insik In*

doi:10.1246/cl.130269

Thermoresponsibility of engineered AAO membrane.

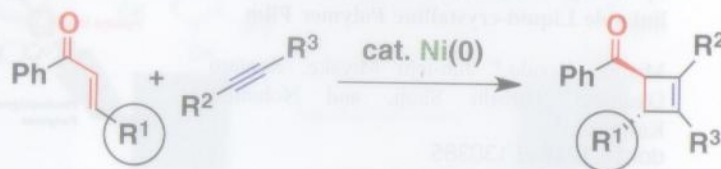


904 **Nickel-catalyzed [2 + 2] Cycloaddition Reaction of Bulky Enones with Simple Alkynes. The Effect of Bulkiness of Substituent Attached at β -Carbon**

Abudoukadeer Abulimiti, Akira Nishimura, Masato Ohashi, and Sensuke Ogoshi*

doi:10.1246/cl.130304

In the presence of a catalytic amount of $[\text{Ni}(\text{cod})_2]$ and PCy_3 , the [2 + 2] cycloaddition of enones bearing a bulky substituent group at β -position with simple alkynes occurs to give cyclobutenes.



906 **Novel Environmentally Friendly Inorganic Blue Pigments Based on Amorphous Tungsten Oxyphosphate**

Wendusu, Ayaka Hosoya, Toshiyuki Masui, and Nobuhito Imanaka*

doi:10.1246/cl.130314



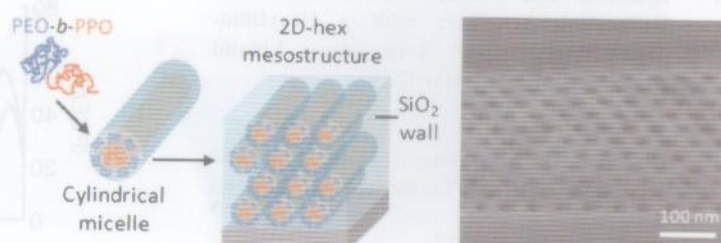
Novel environmentally friendly blue pigments based on amorphous tungsten oxyphosphate were synthesized using a conventional solid-state reaction method. The most brilliant blue color was obtained for $(\text{W}_{0.76}\text{Eu}_{0.24})\text{OP}_2\text{O}_{7-\delta}$, and the blueness parameter was higher than that of a commercial iron hexacyanoferrate pigment (Prussian blue).

909 **PEO-*b*-PPO Diblock Copolymers for the Preparation of 2D Hexagonal Mesoporous Silica Films with Extremely Large Structural Periods**

Masahiko Takahashi, Wataru Kubo, and Hirokatsu Miyata*

doi:10.1246/cl.130320

Electronic Supporting Information

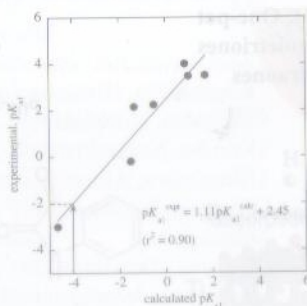


- 912 Estimation of pK_a of Selenic Acid by the Correlation of Experimental pK_a Values with Those Estimated by DFT Calculation for Inorganic Oxoacids

Masato Tanaka, Daisuke Ariga, and Yoshio Takahashi*

doi:10.1246/cl.130289

Electronic Supporting Information

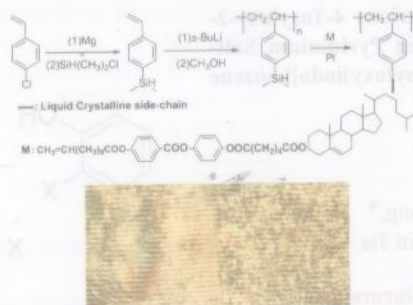


The acid dissociation constant (pK_a) of inorganic oxoacids was calculated using density functional theory (DFT) with the hybrid cluster-continuum approach. The results showed that calculated pK_a values had a good correlation with the experimental values. Based on the correlation of the experimental values with the calculated ones, the pK_{a1} value estimated for selenic acid, which has not been determined experimentally, agreed well with a value estimated by thermodynamic calculations.

- 915 Synthesis and Characterization of Novel Liquid Crystalline Polystyrene

Bai Wang, Hong Wei Ma, Yan Shai Wang, and Yang Li*

doi:10.1246/cl.130267



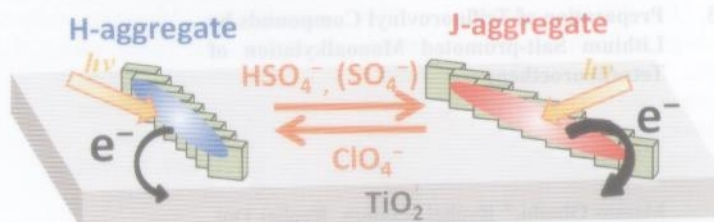
This paper introduced a simple method that synthesizes novel liquid crystalline polystyrene (LC-PS) with high molecular weight and narrow distribution.

- 918 Anion-controlled Aggregation of a Porphyrin at Solid-Liquid Interfaces: A Distinguished Effect of Different Aggregates in Dye-sensitized Solar Cells

Yonbon Arai* and Hiroshi Segawa*

doi:10.1246/cl.130281

Electronic Supporting Information



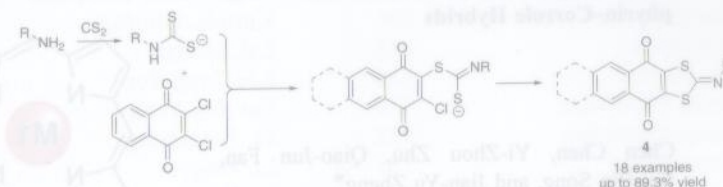
Photoelectric conversion efficiency
H-aggregate < J-aggregate

- 921 Facile One-pot Synthesis of Naphthoquinone-1,3-Dithioles via 2,3-Dichloro-1,4-naphthoquinone and Amines Involving CS_2

Huanming Huang, Jing Han, Fang Xu, Yujin Li,* Huaqing Dong, Wubin Yu, and Jianrong Gao*

doi:10.1246/cl.130330

Electronic Supporting Information

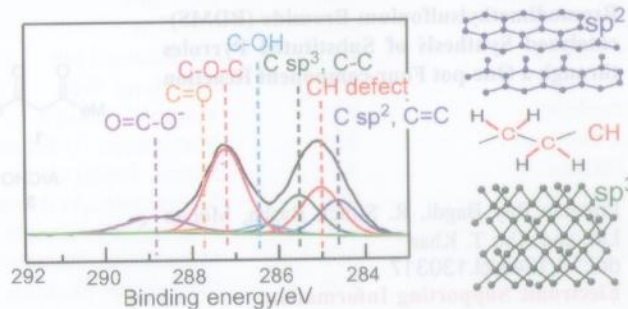


- 924 Analysis of Reduced Graphene Oxides by X-ray Photoelectron Spectroscopy and Electrochemical Capacitance

Michio Koinuma,* Hikaru Tateishi, Kazuto Hatakeyama, Shinsuke Miyamoto, Chikako Ogata, Asami Funatsu, Takaaki Taniguchi, and Yasumichi Matsumoto

doi:10.1246/cl.130152

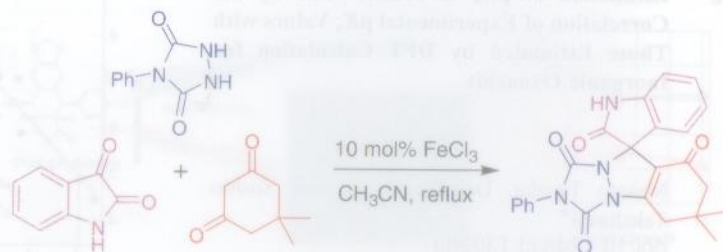
Electronic Supporting Information



- 927 **Iron(III)-catalyzed Highly Efficient, One-pot Synthesis of Triazolo[1,2-*a*]indazoletriones and Spirotriazolo[1,2-*a*]indazoletriones**

B. V. Subba Reddy,* N. Umadevi, G. Narasimhulu, and J. S. Yadav
doi:10.1246/cl.130164

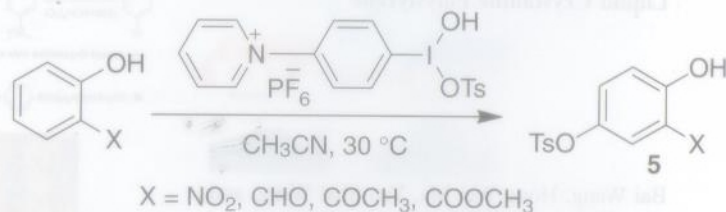
[Electronic Supporting Information](#)



- 930 **Efficient Synthesis of Various 4-Tosyloxy-2-substituted Phenols Using Pyridinium Salt-supported [Hydroxy(tosyloxy)iodo]benzene Reagent**

Bing Yang, Jizhen Zhang,* Dejian Zhao, Yazhen Wang, and Hongbin Jia
doi:10.1246/cl.130229

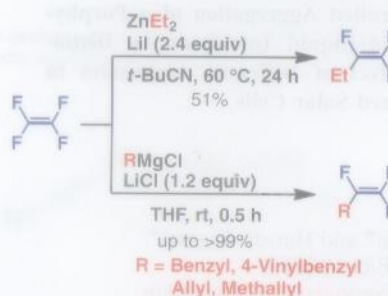
[Electronic Supporting Information](#)



- 933 **Preparation of Trifluorovinyl Compounds by Lithium Salt-promoted Monoalkylation of Tetrafluoroethene**

Masato Ohashi,* Ryohei Kamura, Ryohei Doi, and Sensusuke Ogoshi*
doi:10.1246/cl.130294

[Electronic Supporting Information](#)



- 936 **Syntheses, Crystal Structure, and Spectroscopic Properties of *Meso-Meso*-Linked Porphyrin-Corrole Hybrids**

Chen Chen, Yi-Zhou Zhu, Qiao-Jun Fan, Hai-Bin Song, and Jian-Yu Zheng*
doi:10.1246/cl.130324

[Electronic Supporting Information](#)

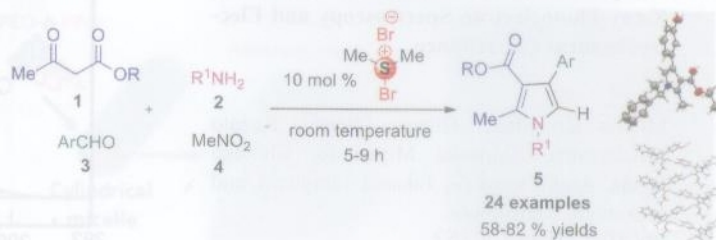
Meso-meso directly linked porphyrin-corrole hybrids have been successfully achieved.



- 939 **Bromodimethylsulfonium Bromide (BDMS)-catalyzed Synthesis of Substituted Pyrroles through a One-pot Four-component Reaction**

Prasanta Ray Bagdi, R. Sidick Basha, Mohan Lal, and Abu T. Khan*
doi:10.1246/cl.130317

[Electronic Supporting Information](#)



942 **Photoresponse on the Desorption of an Atomic Hydrogen on Titanium Dioxide Surface Induced by a Tip of Scanning Tunneling Microscope**

Taketoshi Minato,* Naoki Asao, Yoshinori Yamamoto, Maki Kawai,* and Yousoo Kim*
doi:10.1246/cl.130462

