

Chemistry Letters

Highlight Review

**Luminescent Complexes Containing Halogeno-bridged
Dicopper(I) Unit $\{\text{Cu}_2(\mu\text{-X})_2\}$ (X = Cl, Br, and I)**

Kiyoshi Tsuge

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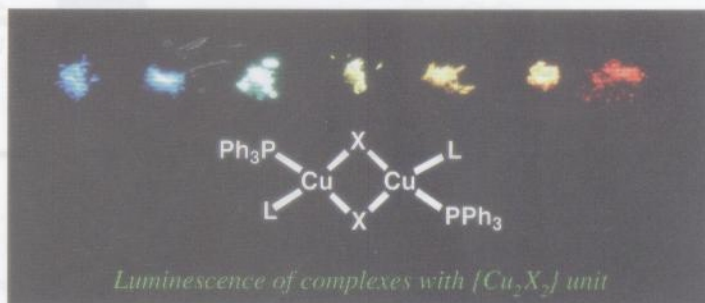
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Highlight Review

- 204 Luminescent Complexes Containing Halogeno-bridged Dicopper(I) Unit $\{Cu_2(\mu-X)_2\}$ ($X = Cl, Br, \text{ and } I$)

Kiyoshi Tsuge
doi:10.1246/cl.2013.204



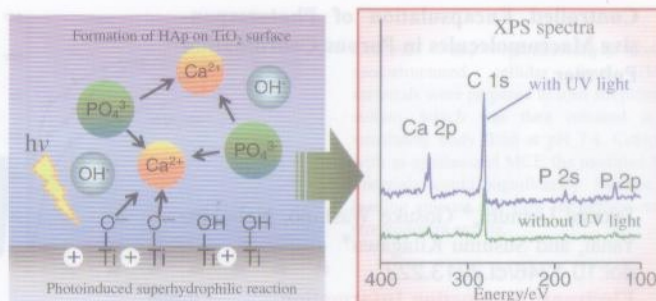
Luminescent copper(I) complexes have been extensively studied in these decades with various ligands showing their rich photophysical and photochemical properties. In this contribution, the luminescent halogeno copper(I) complexes, especially those with halogeno-bridged dicopper(I) unit $\{Cu_2(\mu-X)_2\}$, one of the basic, common structural motifs among halogeno copper(I) family, are described from the view point of influences of coligands upon their luminescent properties. Discussions are extended to the complexes with the halogeno-bridged tetranuclear unit $\{Cu_4(\mu_3-X)_4\}$, being another common structural motif, to examine the dominant emissive excited states in halogeno copper(I) complexes.

Letter

- 209 Preparation of Hydroxyapatite-coated Anatase by Photoinduced Superhydrophilic Reaction of TiO_2 for Water Purification

Tsuyoshi Sugita, Masanobu Mori,* Hisashi Nakane, Akinori Mase, and Hideyuki Itabashi
doi:10.1246/cl.2013.209

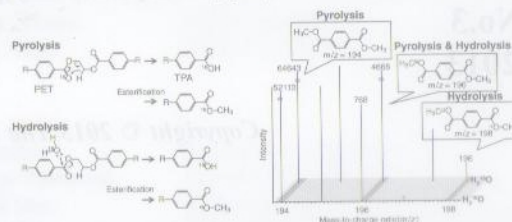
Electronic Supporting Information



212 **A Novel Approach for Determining the Proportions of Pyrolysis and Hydrolysis in the Degradation of Poly(ethylene terephthalate) in ^{18}O -Labeled Steam**

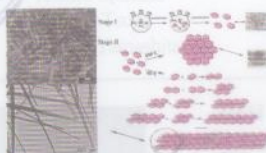
Shogo Kumagai, Yuto Morohoshi, Guido Grause, Tomohito Kameda, and Toshiaki Yoshioka*
doi:10.1246/cl.2013.212

PET was decomposed using ^{18}O -labeled steam (H_2^{18}O) to determine the proportions of pyrolysis and hydrolysis during degradation. The terephthalic acid (TPA) produced by hydrolysis contained ^{18}O in the carboxy group.



215 **Surfactant-free Synthesis and Growing Process of One-dimensional Mg–Al Layered Double Hydroxide Nanobelts**

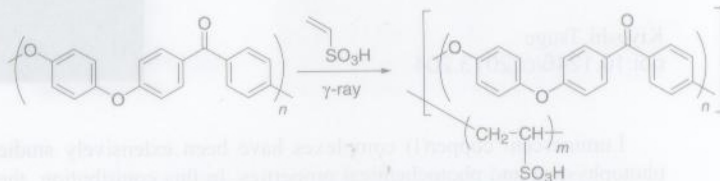
Peng Ding,* Bai Kang, Shengfu Tang, Na Song, and Liyi Shi*
doi:10.1246/cl.2013.215
Electronic Supporting Information



One-dimensional MgAl- CO_3 LDH nanobelts were synthesized by a "green" hydrothermal method in an aqueous solution system, without templates or surfactants. The factors influencing the nanobelt morphology were investigated by X-ray diffraction, IR spectroscopy, and electron microscopy. The degradation process of the nanobelts caused by electron-beam bombardment was also recorded by real-time TEM observations. The results showed that hydrothermal reaction at 60 °C for 48 h favored the growth of MgAl- CO_3 LDH nanobelts of width 50–150 nm and length 1000–2000 nm. The evolution of LDH nanobelts agreed with the tentative mechanism in the present system.

218 **One-pot, Radiation-induced Graft Polymerization of Vinylsulfonic Acid onto Poly(ether ether ketone) and High Proton Conductivity of Its Membrane**

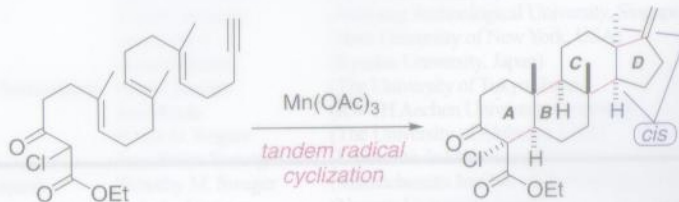
Katsuyuki Takahashi and Hiroyuki Nishide*
doi:10.1246/cl.2013.218



220 **Concise Synthesis of the Tetracyclic Framework of Azadiradione: Tandem Radical Cyclization Route**

Shuji Yamashita,* Akito Naruko, Takahiro Yamada, Yujiro Hayashi, and Masahiro Hirama
doi:10.1246/cl.2013.220

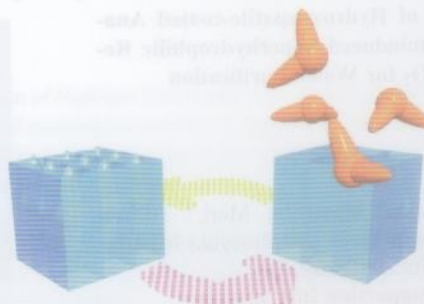
Electronic Supporting Information



222 **Controlled Encapsulation of Photoresponsive Macromolecules in Porous Coordination Polymer**

Takashi Uemura,* Gosuke Washino, Nobuhiro Yanai, and Susumu Kitagawa*
doi:10.1246/cl.2013.222

Electronic Supporting Information



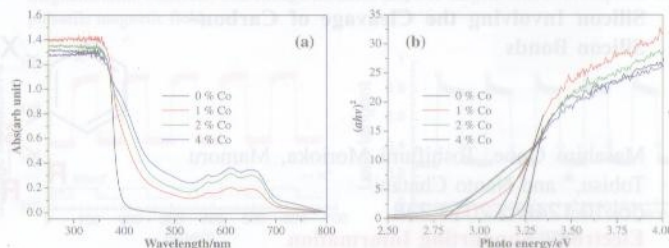
Editor's Choice

Editor's Choice

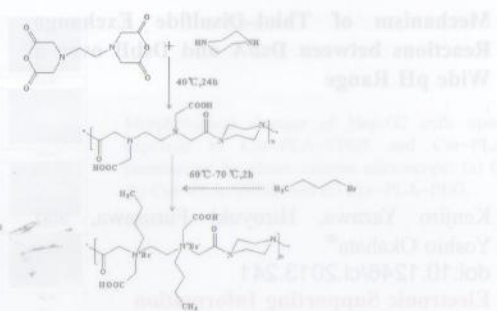
224 **Synthesis, Characterization, and Optical Properties of $\text{Zn}_{1-x}\text{Co}_x\text{O}$ Nanostructures**

Lu-Ping Zhu,* Hua Huang, Ling-Ling Wang,
Nai-Ci Bing, Gui-Hong Liao, and Li-Jun
Wang*
doi:10.1246/cl.2013.224

Co doping can enhance the ability of visible light absorption of the ZnO samples, and the band gap energies of the $\text{Zn}_{1-x}\text{Co}_x\text{O}$ nanostructures can be effectively tuned from 3.25 to 2.85 eV.

227 **Design and Synthesis of Novel Piperazine Derivatives with High Antibacterial Activity**

Maolan Zhang, Yuanliang Wang,* Jiaoxia Sun,
Jinchuan Wu, Weiwei Yan, and Yuxi Zheng
doi:10.1246/cl.2013.227

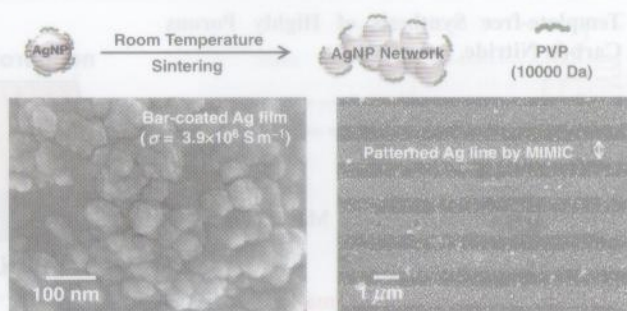
229 **Effect of Optical Purity of C_3 -Symmetric Chiral Tris-ureas on Supramolecular Gel Formation**

Tomoe Nakagawa, Mawo Amakatsu, Kanako
Munenobu, Hiromitsu Fujii, and Masamichi
Yamanaka*
doi:10.1246/cl.2013.229

Electronic Supporting Information

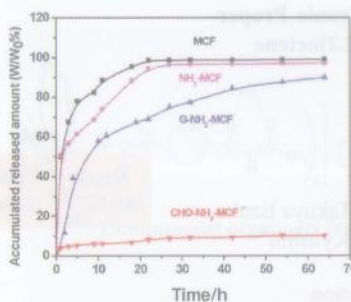
232 **Room-temperature Sinterable Silver Nanoparticle Ink with Low-molecular-weight Poly(*N*-vinylpyrrolidone) Ligand**

Mi Yeon Lee, Won Jin Lee, Arup Kumer Roy,
Kang Seok Lee, Sung Young Park,* Ji-Hoon
Lee,* and Insik In*
doi:10.1246/cl.2013.232

235 **Functionalized Mesostructured Cellular Foams for Loading and Release of Streptomycin**

Shaohua Xu, Jiawey Yong, Guosong Lai, Haili
Zhang, Yiwei Wu, and Aimin Yu*
doi:10.1246/cl.2013.235

Electronic Supporting Information



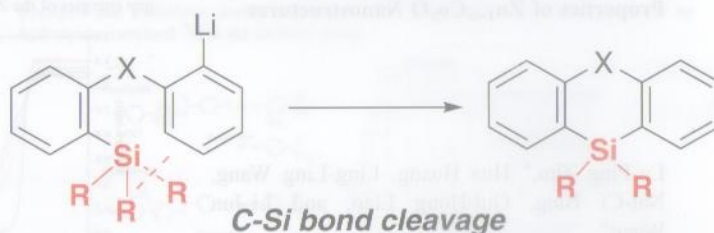
Glucose- and glutaraldehyde-modified mesostructured cellular foam (MCF) materials were prepared to load streptomycin sulfate, which was then released in the simulating body fluid at pH 7.4. Compared with as-synthesized MCF, the modified MCF materials could significantly increase the loading amount and slow the release rate of streptomycin sulfate.

- 238 **Synthesis of Six-membered Silacycles by Intramolecular Nucleophilic Substitution at Silicon Involving the Cleavage of Carbon-Silicon Bonds**

Masahiro Onoe, Toshifumi Morioka, Mamoru Tobisu,* and Naoto Chatani*

doi:10.1246/cl.2013.238

[Electronic Supporting Information](#)

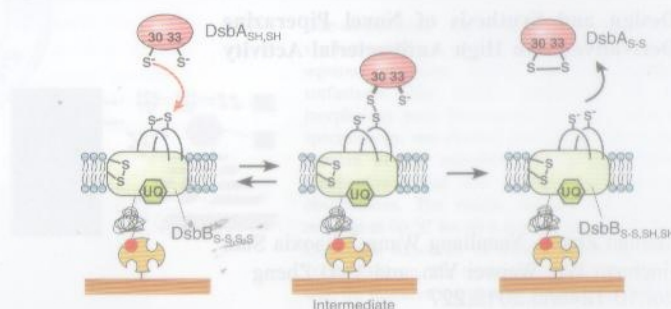


- 241 **Mechanism of Thiol-Disulfide Exchange Reactions between DsbA and DsbB over a Wide pH Range**

Kenjiro Yazawa, Hiroyuki Furusawa, and Yoshio Okahata*

doi:10.1246/cl.2013.241

[Electronic Supporting Information](#)

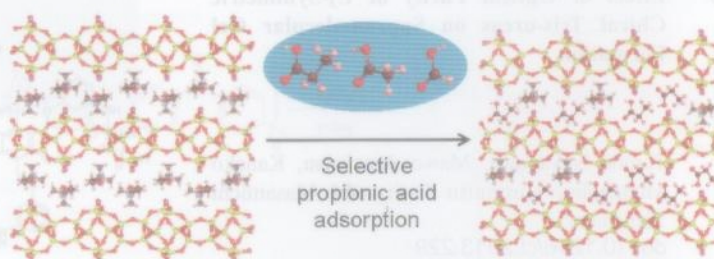


- 244 **Molecular Recognitive Adsorption of Aqueous Propionic Acid on Hiroshima University Silicate-2 (HUS-2)**

Nao Tsunoji, Yusuke Ide,* Masato Torii, Masahiro Sadakane, and Tsuneji Sano

doi:10.1246/cl.2013.244

[Electronic Supporting Information](#)

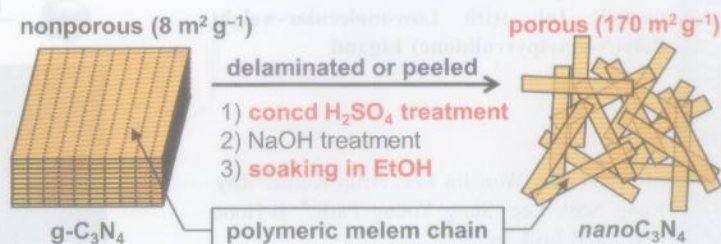


- 247 **Template-free Synthesis of Highly Porous Carbon Nitride, nanoC_3N_4**

Tomoyuki Iwamoto, Yoichi Masui, Jiacheng Wang, and Makoto Onaka*

doi:10.1246/cl.2013.247

[Electronic Supporting Information](#)

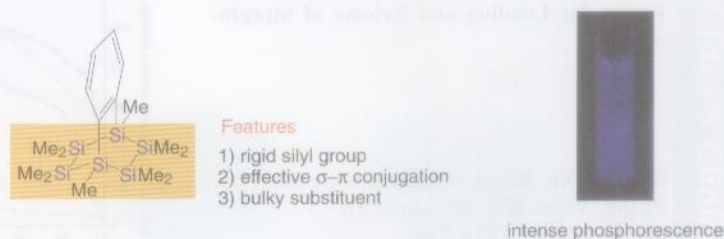


- 250 **Synthesis, Structure, and Electronic Properties of Benzo-hexasilabicyclo[2.2.2]octene**

Yuki Toma, Takayoshi Kuribara, Takuya Iizuka, Hideo Nagashima, and Soichiro Kyushin*

doi:10.1246/cl.2013.250

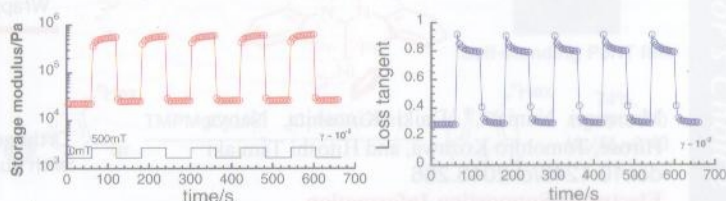
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253 **Wide-range Modulation of Dynamic Modulus and Loss Tangent for Magnetic Elastomers Containing Submillimeter Magnetic Particles**

Naoya Chiba, Ken Yamamoto, Tsukasa Hojo, Mika Kawai, and Tetsu Mitsumata*
doi:10.1246/cl.2013.253

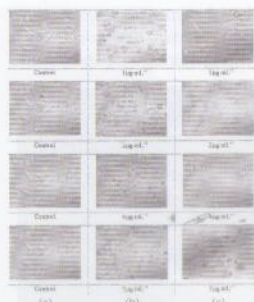
Magnetic elastomers embedded with submillimeter magnetic particles exhibit giant magnetoelastic behavior. The storage modulus and loss tangent altered in response to a pulsatile magnetic field.



255 **In Vitro Apoptosis Enhancement of Hep-G2 Cells by PLA-TPGS and PLA-PEG Block Copolymer Encapsulated Curcumin Nanoparticles**

Ha Phuong Thu,* Duong Tuan Quang, Mai Thi Thu Trang, Tran Thi Hong Ha, Nguyen Hoai Nam, Nguyen Xuan Phuc, Tran Thi Minh Nguyet, Phan Quoc Thong, Phan Thi Hong Tuyet, Vuong Thi Kim Oanh, and Le Mai Huong*
doi:10.1246/cl.2013.255

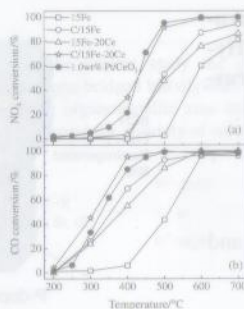
Electronic Supporting Information



Morphological changes of Hep-G2 cells upon their exposure to Cur-PLA-TPGS and Cur-PLA-PEG monitored by phase-contrast microscope: (a) Control, (b) Cur-PLA-TPGS, and (c) Cur-PLA-PEG.

258 **A Carbon/Iron-Cerium/Alumina Catalyst as Potential Substitution for Noble Metal Three-way Catalyst for Auto Emission Control**

Yu Guo,* Harunobu Oda, Lu Jia, Shuntaro Amari, Yui Okita, and Hideo Kameyama
doi:10.1246/cl.2013.258

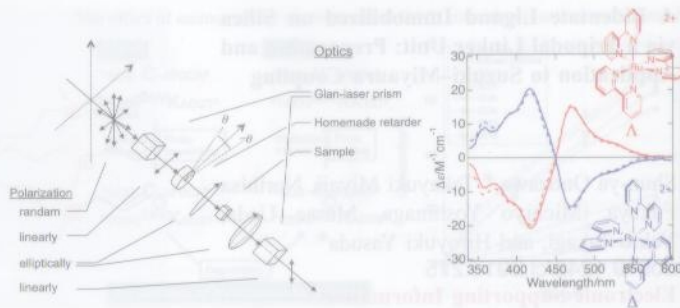


When the alumina-supported Fe and Ce catalyst was subjected to a carburization treatment (i.e. C/15Fe-Ce), it exhibited a dramatic activity for removing NO_x and CO, because the initial temperature for NO_x reduction was shifted to 300 °C and 95% conversion of CO and NO_x could be achieved at 500 °C, even comparable to a reference noble metal catalyst 1.0 wt % Pt/CeO₂.

261 **Remarkable Enhancement of Sensitivity with the Second Generation of Elliptically Polarization-detected Circular Dichroism Spectroscopy**

Makoto Murakami, Yasuyuki Araki,* Seiji Sakamoto, Yoshiki Hamada, and Takehiko Wada*
doi:10.1246/cl.2013.261

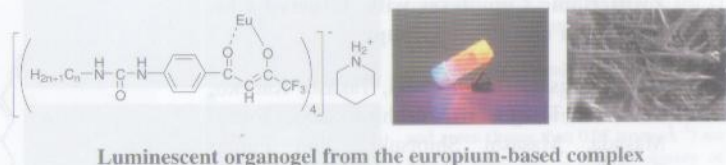
Electronic Supporting Information



263 **Formation of Luminescent Organogels from Europium-based Complexes**

Akihiko Tsuge,* Daisuke Yakeya, Katsuhiko Sakura, Tetsuji Moriguchi, Daisaku Kaneko, Takahide Kanyama, Takayoshi Kawahara, and Koji Araki
doi:10.1246/cl.2013.263

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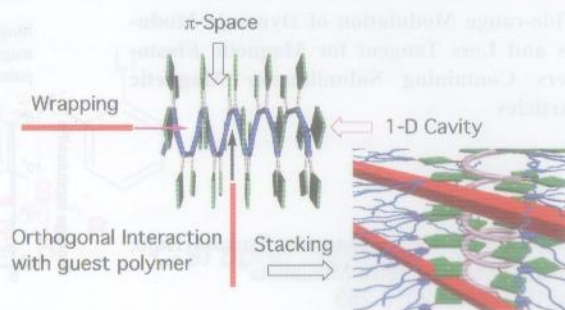


Luminescent organogel from the europium-based complex

266 **Orthogonal Polymer Recognition Based on Semiartificial Helical Polysaccharide**

Munenori Numata,* Daiki Kinoshita, Naoya Hirose, Tomohiro Kozawa, and Hitoshi Tamiaki
doi:10.1246/cl.2013.266

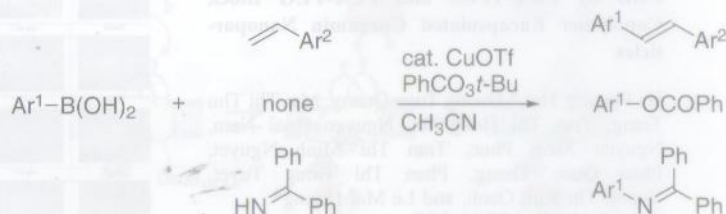
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269 **Copper-catalyzed Oxidative C–C, C–O, and C–N Bond Forming Reactions of Arylboronic Acids**

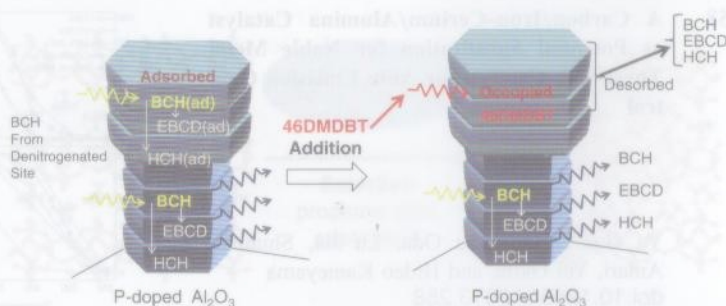
Eiji Shirakawa,* Ryo Nishikawa, Nanase Uchiyama, Ippei Hata, and Tamio Hayashi*
doi:10.1246/cl.2013.269

Electronic Supporting Information



272 **Selective Desorption by 4,6-Dimethyldibenzothiophene Addition during Carbazole Hydrodenitrogenation on Sulfided Phosphorus-doped NiMo/Al₂O₃ Catalyst**

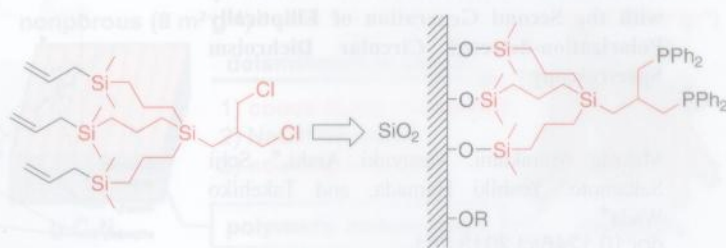
Masatoshi Nagai,* Hiroyuki Tominaga, and Daiki Sugai
doi:10.1246/cl.2013.272



275 **A Bidentate Ligand Immobilized on Silica via a Tripodal Linker Unit: Preparation and Application to Suzuki–Miyaura Coupling**

Shun-ya Onozawa,* Takayuki Miyaji, Norihisa Fukaya, Michio Yoshinaga, Masae Ueda, Yukio Takagi, and Hiroyuki Yasuda*
doi:10.1246/cl.2013.275

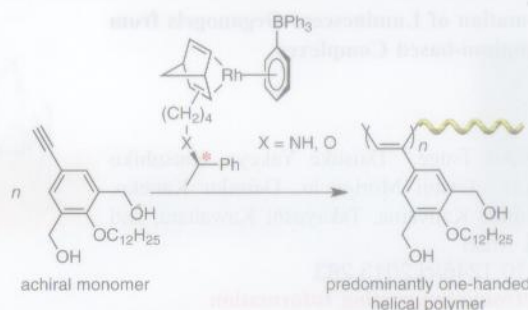
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278 **Helix-sense-selective Polymerization of Achiral Acetylene Monomer Catalyzed by Rh Zwitterionic Complexes with Tethered Chiral Amino and Ether Groups**

Naoya Onishi, Toshiki Aoki, Takashi Kaneko, Masahiro Teraguchi, Natsuiro Sano, Toshio Masuda, Masashi Shiotsuki,* and Fumio Sanda*
doi:10.1246/cl.2013.278

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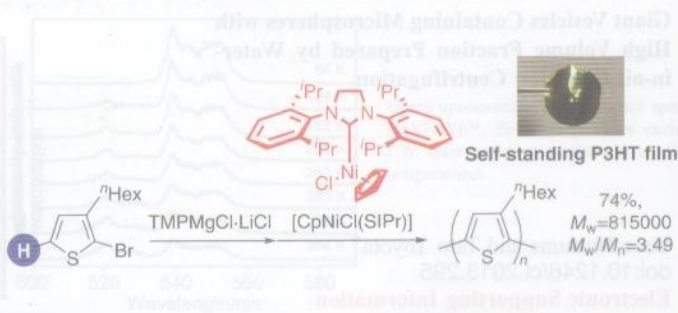


- 281 **Synthesis of High-molecular-weight Head-to-tail-type Poly(3-substituted-thiophene)s by Cross-coupling Polycondensation with [CpNiCl(NHC)] as a Catalyst**

Shunsuke Tamba, Kanta Fuji, Hikaru Meguro, Shuji Okamoto, Tadashi Tendo, Ryo Komobuchi, Atsushi Sugie, Takashi Nishino, and Atsunori Mori*

doi:10.1246/cl.2013.281

Electronic Supporting Information



- 284 **Friction Evaluation System with a Human Finger Model**

Keitaro Kuramitsu, Toshio Nomura, Shyuhei Nomura, Takashi Maeno, and Yoshimune Nonomura*

doi:10.1246/cl.2013.284

Electronic Supporting Information

We developed a friction evaluation system with a human finger model. The surface of the model was covered with imitation fingerprints. When a polypropylene surface was rubbed against the finger model, the friction profile varied with the sliding velocity and vertical force.

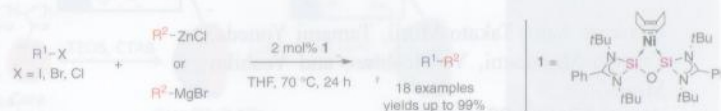


- 286 **Application of a Bis(silylene) Nickel Complex as Precatalyst in C-C Bond Formation Reactions**

Chika I. Someya, Michael Haberberger, Wenyuan Wang, Stephan Enthaler,* and Shigeyoshi Inoue*

doi:10.1246/cl.2013.286

In the present study the catalytic performance of a nickel complex stabilized by an oxygen-bridged bis(silylene) ligand was examined in cross-coupling reactions of aryl halides with organometallic zinc and Grignard reagents. Good to excellent catalytic activity was observed for a variety of substrates with this system.



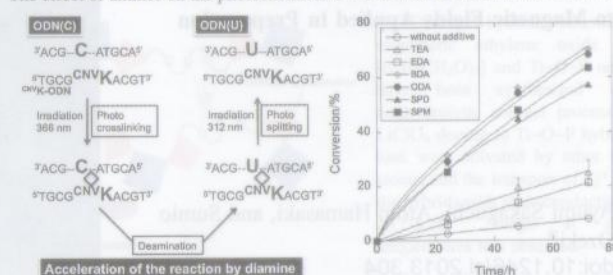
- 289 **Diamine Derivatives Accelerate Photochemical C → U Transition in DNA Double Strand**

Kenzo Fujimoto,* Daiki Futamura, and Takashi Sakamoto

doi:10.1246/cl.2013.289

Electronic Supporting Information

The effect of amines on the photochemical C → U transition reaction was examined.

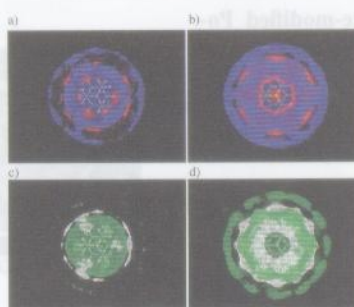


- 292 **Hydration of Adamantane Skeleton: Water Assembling around Adamantane and Halo-substituted Adamantanes**

Hideo Doi and Misako Aida*

doi:10.1246/cl.2013.292

Electronic Supporting Information



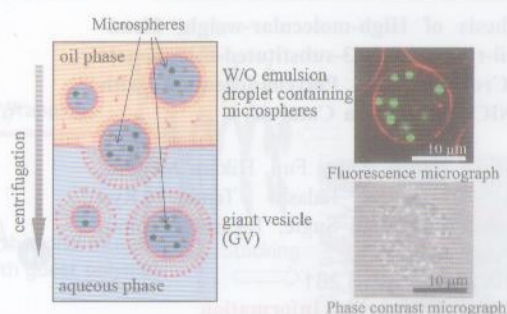
Oxygen (a and b) and hydrogen (c and d) number density maps of solvent water molecules around adamantane (a and c) and perfluoroadamantane (b and d). For O number density, red (higher than 0.09 atoms Å⁻³) and blue (lower than 0.02 atoms Å⁻³) are plotted; for H number density, white (higher than 0.12 atoms Å⁻³) and green (lower than 0.05 atoms Å⁻³) are plotted. Note that O number density of bulk water (1 g cm⁻³) is uniform and 0.033 atoms Å⁻³.

- 295 **Giant Vesicles Containing Microspheres with High Volume Fraction Prepared by Water-in-oil Emulsion Centrifugation**

Yuno Natsume and Taro Toyota*

doi:10.1246/cl.2013.295

Electronic Supporting Information

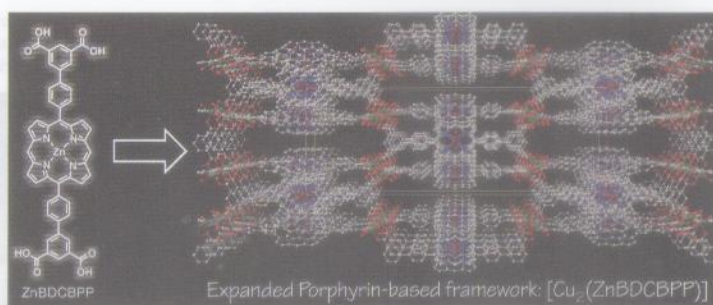


- 298 **Expansion of Pore Windows and Interior Spaces of Microporous Porphyrin-based Metal Carboxylate Frameworks: Synthesis and Crystal Structure of $[\text{Cu}_2(\text{ZnBDCBPP})]$**

Satoshi Matsunaga,* Shigeki Kato, Nanako Endo, and Wasuke Mori*

doi:10.1246/cl.2013.298

Electronic Supporting Information

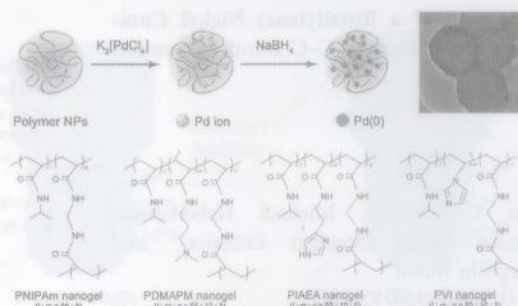


- 301 **Preparation of Palladium-loaded Polymer Nanoparticles with Catalytic Activity for Hydrogenation and Suzuki Coupling Reactions**

Hirokazu Seto, Takato Morii, Tamami Yoneda, Tatsuya Murakami, Yu Hoshino, and Yoshiko Miura*

doi:10.1246/cl.2013.301

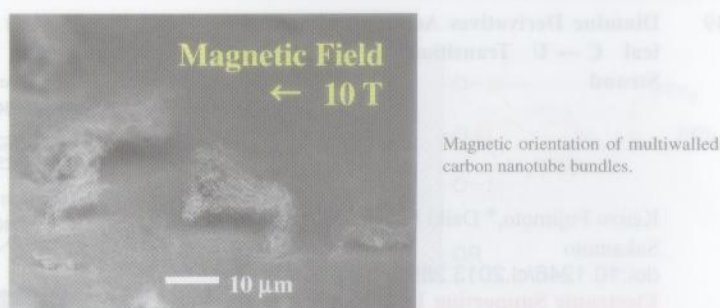
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- 304 **Structural Control of Carbon Nanotubes due to Magnetic Fields Applied in Preparation**

Ayumi Sakaguchi, Atom Hamasaki, and Sumio Ozeki*

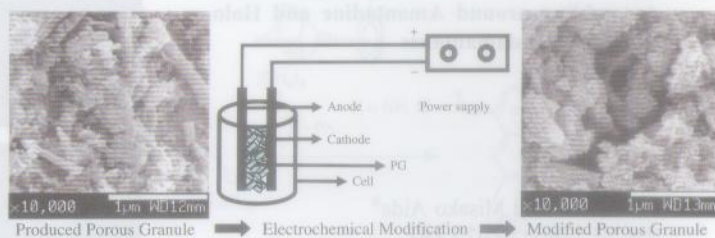
doi:10.1246/cl.2013.304



- 307 **An Electrochemically Surface-modified Porous Granule Developed for Phosphate Removal from Aqueous Solution**

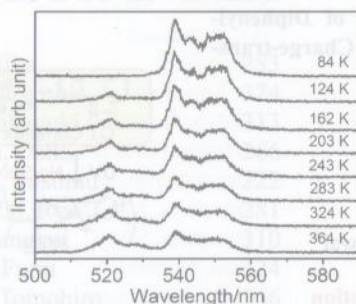
Shengjiong Yang, Dahu Ding, Yingxin Zhao, and Zhenya Zhang*

doi:10.1246/cl.2013.307



310 Temperature-dependent Upconversion Luminescence of $\text{NaYF}_4:\text{Yb}^{3+}, \text{Er}^{3+}$ Nanoparticles

Junwei Zhao,* Haitao Li, Qinghui Zeng, Kai Song, Xiaofeng Wang, and Xianggui Kong*
doi:10.1246/cl.2013.310



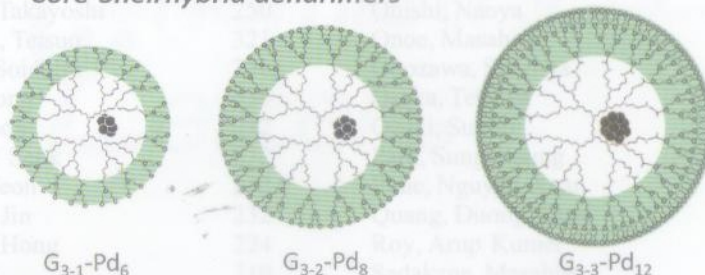
Green upconversion luminescence spectra of $\text{NaYF}_4:\text{Yb}^{3+}, \text{Er}^{3+}$ nanoparticles excited by CW laser radiation at 980 nm at different temperatures.

313 Size Selective Synthesis of Subnano Pd Clusters Using Core [Poly(propylene imine)]-Shell [Poly(benzyl ether)] Hybrid Dendrimers

Tomoo Mizugaki, Takayuki Kibata, Takato Mitsudome, Koichiro Jitsukawa, and Kiyotomi Kaneda*
doi:10.1246/cl.2013.313

Electronic Supporting Information

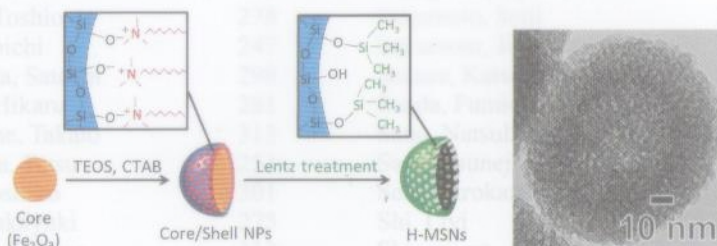
Core-Shell hybrid dendrimers



316 Facile Synthesis of Well-dispersed Hollow Mesoporous Silica Nanoparticles Using Iron Oxide Nanoparticles as Template

Takaaki Ikuno, Atsuro Nomura, Kenta Iyoki, Ayae Sugawara-Narutaki, Tatsuya Okubo,* and Atsushi Shimojima
doi:10.1246/cl.2013.316

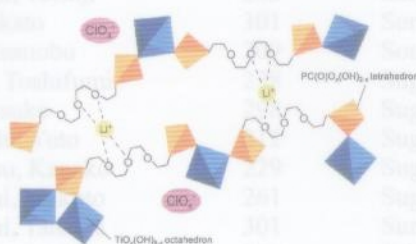
Electronic Supporting Information



318 Preparation of LiClO_4 -doped Titanium Organodiphosphonates Possessing Oligomeric Ethylene Oxide Chains and Their Ionic Conductivity

Hitomi Saito, Masataka Dobashi, Hiroki Naka, Toshiyuki Momma, Tetsuya Osaka, and Yoshiyuki Sugahara*
doi:10.1246/cl.2013.318

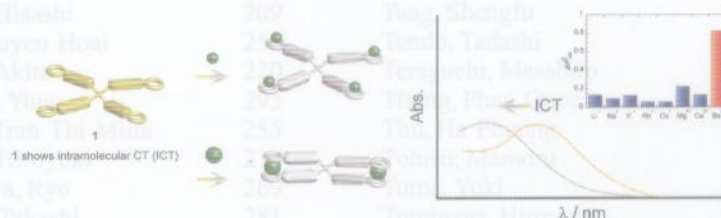
Electronic Supporting Information



LiClO_4 -doped hybrids possessing both oligomeric ethylene oxide chains $[(\text{CH}_2\text{CH}_2\text{O})_3]$ and $\text{Ti}-\text{O}-\text{P}$ networks have been synthesized via a nonhydrolytic sol-gel process. After LiClO_4 doping to $\text{Ti}-\text{O}-\text{P}$ hybrid, Li^+ ions were solvated by ether oxygen atoms, and the transport of Li^+ ions in the hybrids with ionic conductivities at $10^{-5} \text{ S cm}^{-1}$ range at ambient temperatures was observed.

321 Highly Selective Tetrakis(bipyridinium-crown ether)-conjugated Chemosensor for Barium Ions

Haocheng Guo and Tetsuo Kuwabara*
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324 **Efficient Photopolymerization of Diphenylamine Based on Ground-state Charge-transfer Complex**

Fumi Koyama and Tsuyoshi Kawai*

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Electronic Supporting Information

