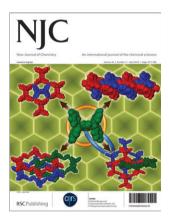
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#### IN THIS ISSUE

ISSN 1144-0546 CODEN NJCHES 34(4) 573-768 (2010)



#### Cover

See Ashwini Nangia et al., pp. 623-636. Rare topologies in organic networks. Artwork prepared by Ranjit Thakuria. Ranjit Thakuria, Bipul Sarma and Ashwini Nangia, New J. Chem., 2010, 34, 623.

#### **LETTERS**



Solid-state synthesis of head-to-tail photodimers from supramolecular assemblies directed by charge-assisted hydrogen bonds

Maholy Linares and Alexander Briceño\*

A supramolecular approach based on the self-assembly of a hydrogen bonding switch with unsaturated pyridyl compounds is exploited in order to drive the topochemical synthesis of head-to-tail photodimers via charge-assisted hydrogen bonds.

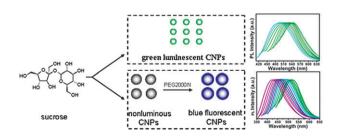
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#### 591

Controlled synthesis of green and blue luminescent carbon nanoparticles with high yields by the carbonization of sucrose

Jingchun Zhang, Wenqing Shen, Dengyu Pan,\* Zongwen Zhang, Yaoguo Fang and Minghong Wu\*

A facile route to ultrasmall green luminescent (1-2 nm) and blue luminescent (4–5 nm) CNPs has been developed. Luminescent CNPs with high yields ( $\sim 50\%$ ) are reported for the first time.



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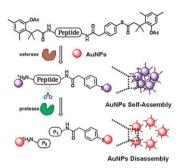
#### **LETTERS**

594

#### Novel trimethyl lock based enzyme switch for the self-assembly and disassembly of gold nanoparticles

Rongrong Liu, Junxin Aw, Weiling Teo, Parasuraman Padmanabhan and Bengang Xing\*

A novel dual enzyme-responsive gold nanoparticles (GNPs) conjugate was developed to control the self-assembly and disassembly of GNPs in the one population of nanoparticles. The process can be monitored by the naked eye, simple spectrophotometer and SERS measurements.

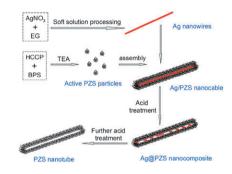


599

#### The controlled preparation of cross-linked polyphosphazene nanotubes of high stability via a sacrificial template route

Jianwei Fu,\* Jiafu Chen, Zhimin Chen, Qun Xu,\* Xiaobin Huang and Xiaozhen Tang

Cross-linked polyphosphazene nanotubes of high stability were successfully prepared by using Ag nanowires as a sacrificial template. The wall thickness and inner diameter of the as-synthesized nanotubes could be easily controlled.



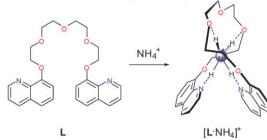
603

#### Surprisingly stable ammonium ion complex of a non-cyclic crown-type polyether: solid and solution studies

Ki-Min Park,\* Hyun Jee Kim, Suk-Hee Moon, Jagadese J. Vittal, Jong Hwa Jung and Shim Sung Lee\*

Non-cyclic receptor (L) forms a more stable complex with NH<sub>4</sub><sup>+</sup> than does 18-crown-6 by the formation of unique recognition tetrahedral-type hydrogen bonds.



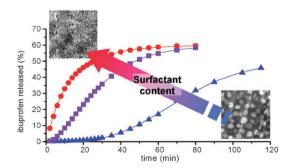


607

#### Tuning nanophase separation and drug delivery kinetics through spray drying and self-assembly

Mohamed Fatnassi, Corine Tourné-Péteilh, Thomas Cacciaguerra, Philippe Dieudonné, Jean-Marie Devoisselle and Bruno Alonso\*

For the first time, a new one-pot synthesis route associating sol-gel, self-assembly and spray drying allows the formation of microspheres with tuneable textures (worm-like mesophases, drug nanodomains, core-shell organisation) and drug delivery properties (from burst to delayed release).



Fifth International Symposium on Macrocyclic and Supramolecular Chemistry ISMSC 2010

June 6 - 10, 2010, Nara (Japan)

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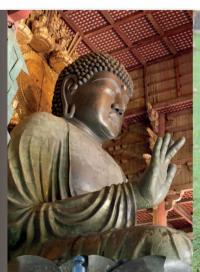
Early Registration: April, 15th Regular Registration: May, 15th Abstract submission: May, 15th In 2006, the International Symposium on Macrocyclic Chemistry (established in 1977) and the International Symposium on Supramolecular Chemistry (established in1980) were merged in a constructive way to establish ISMSC. Since then, ISMSC has been the largest symposium in the fields of macrocyclic chemistry and supramolecular chemistry.



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Honorary Chair: Seiji Shinkai Chair: Makoto Fujita Co-Chair: Yoshihisa Inoue





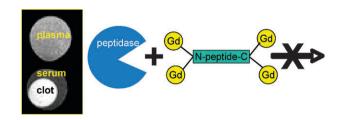
#### **LETTERS**

#### 611

#### Effect of peptide-chelate architecture on the metabolic stability of peptide-based MRI contrast agents

Zhaoda Zhang, Andrew F. Kolodziej, Jianfeng Qi, Shrikumar A. Nair, Xifang Wang, April W. Case, Matthew T. Greenfield, Philip B. Graham, Thomas J. McMurry and Peter Caravan\*

Conjugating 2 GdDTPA moieties to both the C- and N-terminus of a fibrin-specific peptide blocks peptidase degradation of the compound (right), while boosting the MRI signal and enabling blood clots to be visualized by MRI (left).



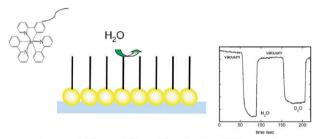
#### **PAPERS**

#### 617

Highly luminescent Langmuir-Blodgett films of amphiphilic Ir(III) complexes for application in gas sensing

Hisako Sato,\* Kenji Tamura, Masahiro Taniguchi and Akihiko Yamagishi

Langmuir-Blodgett films of an amphiphilic Ir(III) complex.



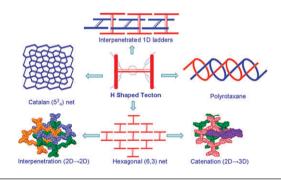
Langmuir-Blodgett films of Amphiphilic Ir(III) complex

#### 623

#### Supramolecular networks of a H-shaped aromatic phenol host

Ranjit Thakuria, Bipul Sarma and Ashwini Nangia\*

Solvents and cocrystal formers give a variety of hydrogen bond network architectures to a H-shaped tetraphenol tecton, notably novel examples of interpenetrated ladders, pentagonal Catalan nets, interpenetration and catenation in hexagonal (6,3) nets, and polyrotaxane threading.



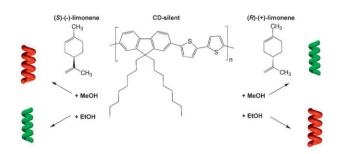


#### 637

Limonene magic: noncovalent molecular chirality transfer leading to ambidextrous circularly polarised luminescent  $\pi$ -conjugated polymers

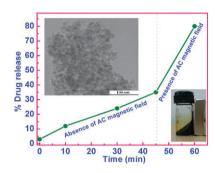
Yoshifumi Kawagoe, Michiya Fujiki\* and Yoko Nakano

Mirror imaged limonenes as chiral solvents with the help of alkanols allowed for the successful production of three ambidextrous polymer particles from the corresponding achiral  $\pi$ -conjugated polymers.



#### **PAPERS**

648

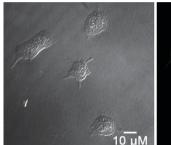


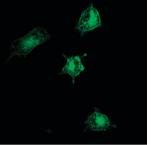
## Dendritic magnetite nanocarriers for drug delivery applications

Sudeshna Chandra, Shailee Mehta, Saumya Nigam and D. Bahadur\*

An efficient biocompatible dendritic magnetite nanocarrier for drug delivery has been fabricated by a facile approach, which can also be used as platform technology for next-generation combined therapy of hyperthermia and chemotherapy.

656



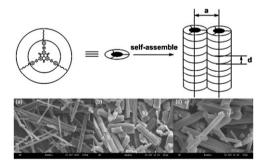


#### A charge transfer type pH responsive fluorescent probe and its intracellular application

Zhipeng Liu, Changli Zhang, Weijiang He,\* Fang Qian, Xiaoliang Yang, Xiang Gao and Zijian Guo\*

A new charge transfer pH fluorescent probe **BTP** has been prepared by the ethylene bridging of benzothiazole and pyridine.

661

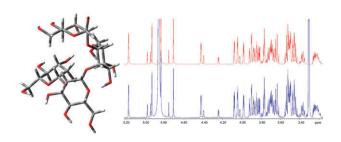


### Self-assembly based on heterotriangulene derivatives: from nanowires to microrods

Xiangjian Wan, Huaqiang Zhang, Yanqin Li and Yongsheng Chen\*

A two level self-assembly from nanowires to macrorods based on a heterotriangulene derivative was reported. The  $\pi$ - $\pi$  stacking interactions of the cores and the hydrophobic interactions of alkyl chains with solvent molecules are the main driving forces for these two processes.

66



Fully deprotected  $\beta$ -(1  $\rightarrow$  2)-mannotetraose forms a contorted  $\alpha$ -helix in solution: convergent synthesis and conformational characterization by NMR and DFT

Filip S. Ekholm, Jari Sinkkonen and Reko Leino\*

A convergent synthesis, complete NMR spectroscopic characterization and a conformational study of a  $\beta$ -(1  $\rightarrow$  2)-mannotetraose is presented.

#### **PAPERS**



Influence of the substituent R<sup>1</sup> on the reactivity of  $[(\eta^5-C_5H_5)Fe\{(\eta^5-C_5H_4)-CH=N-(R^1)-OH\}]$  $\{R^1 = -CH_2 - CH_2 - \text{ or } 1,2 - C_6H_4\}$  with platinum(II) and on the properties of the complexes

Concepción López,\* Sonia Pérez, Xavier Solans, Mercè Font-Bardía and Teresa Calvet

The effect of  $\mathbb{R}^1$  on the properties and reactivity of platinum(II) complexes derived from ferrocenyliminoalcohols acting as (N),  $[C(sp^2, ferrocene), N]^-$  or  $[C(sp^2, ferrocene), N]^{2-}$  ligands is studied.

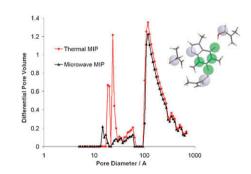


686

Microwave induced MIP synthesis: comparative analysis of thermal and microwave induced polymerisation of caffeine imprinted polymers

Nicholas W. Turner, Clovia I. Holdsworth, Scott W. Donne, Adam McCluskey and Michael C. Bowyer\*

Identically formulated, caffeine imprinted polymers were prepared by thermal and rapid microwave polymerization. The binding characteristics and physical properties of each system were assessed and compared.

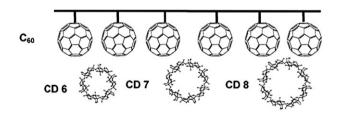


693

Reciprocal principle of molecular recognition in supramolecular chromatography—highly selective analytical separation of cyclodextrin congeners on a silica-bonded [60]fullerene stationary phase

Anja Bogdanski, Dorothee Wistuba, Kim L. Larsen, Uwe Hartnagel, Andreas Hirsch and Volker Schurig\*

Small-to-large-ring cyclodextrins were chromatographed on silica-bonded [60]fullerene using the concept of reciprocal molecular recognition in liquid chromatography.

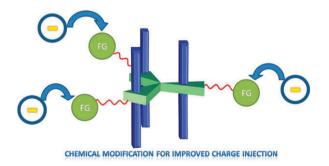




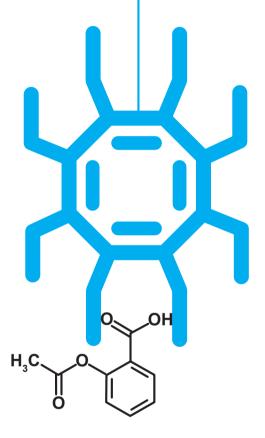
Highly stable blue light-emitting materials with a three-dimensional architecture: improvement of charge injection and electroluminescence performance

Ting Lei, Jia Luo, Lei Wang, Yuguo Ma, Jian Wang, Yong Cao\* and Jian Pei\*

Enhanced injection! Two classes of blue emitters bearing electron-rich or electron-deficient units were developed for enhanced organic light-emitting diodes.



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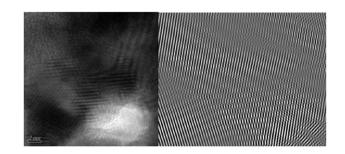
#### **PAPERS**

708

#### Preparation of nickel nanoparticles with different sizes and structures and catalytic activity in the hydrogenation of *p*-nitrophenol

Aili Wang, Hengbo Yin,\* Min Ren, Huihong Lu, Jinjuan Xue and Tingshun Jiang

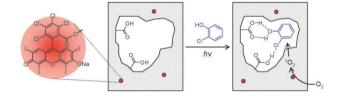
Inverse FFT image of nickel nanoparticles with dislocations prepared by using sodium dodecyl sulfonate as an organic modifier.



714

#### Selective photooxidation of chlorophenols with molecularly imprinted polymers containing a photosensitizer

Yasuhiro Shiraishi,\* Takeshi Suzuki and Takayuki Hirai Molecularly imprinted polymers containing rose bengal promote selective photooxidation of target chlorophenol by singlet oxygen due to the selective attraction of the target chlorophenol by the molecular recognition site.

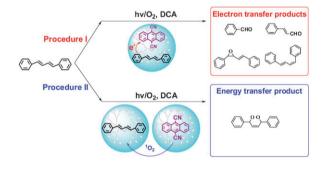


718

#### Photosensitized oxidation of alkenes with dendrimers as microreactors: controllable selectivity between energy and electron transfer pathway

Zhao Yuan, Shaojun Zheng, Yi Zeng, Jinping Chen, Yongbin Han,\* Yingying Li and Yi Li\*

Carboxylic acid terminated poly(aryl ether) dendrimers were used as microreactors to successfully control the pathways of the photooxidation of trans-stilbene and trans, trans-1,4-diphenyl-1,3-butadiene (DPB) sensitized by 9,10-dicyano-anthracene (DCA).

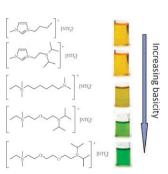


723

#### Functionalised ionic liquids: synthesis of ionic liquids with tethered basic groups and their use in Heck and **Knoevenagel reactions**

Stewart A. Forsyth, Ute Fröhlich, Peter Goodrich, H. Q. Nimal Gunaratne, Christopher Hardacre,\* Angela McKeown and Kenneth R. Seddon\*

Ionic liquids bearing nucleophilic and non-nucleophilic base functionalities have been prepared and their relative basicity examined using both their interaction with universal indicator and their activity for Heck and Knoevenagel reactions.



732

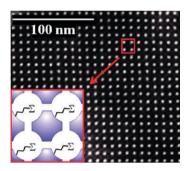


## Controllable hydrothermal synthesis, growth mechanism, and properties of ZnO three-dimensional structures

Yangang Sun, Junqing Hu,\* Na Wang, Rujia Zou, Jianghong Wu, Yuelin Song, Haihua Chen, Huihui Chen and Zhigang Chen

A series of three-dimensional (3D) ZnO structures, including flower-like, star-like, sphere-like and sea urchin-like morphologies, have been fabricated by a well-controlled hydrothermal method. The formation mechanism is proposed and their optical properties are examined.

738

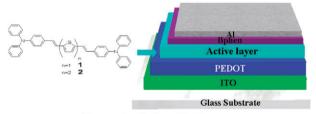


## Generic way for functionalised well-ordered cubic mesoporous silica *via* direct synthesis approach

Arnaud Boullanger, Johan Alauzun, Ahmad Mehdi,\* Catherine Reyé and Robert J. P. Corriu

Highly ordered functionalised and surfactant-free cubic mesoporous silicas were obtained in one step by co-condensation of TEOS and an organotrialkoxysilane (RO)<sub>3</sub>Si(CH<sub>2</sub>)<sub>3</sub> $\Sigma$  ( $\Sigma$  = CN, SH, CH<sub>3</sub>COCHCOCH<sub>3</sub>, PO(OEt)<sub>2</sub>) in the presence of the triblock copolymer F127 as structure-directing agent.

744



#### **Organic Solar Cells**

## Solution processable donor materials based on thiophene and triphenylamine for bulk heterojunction solar cells

Jongchul Kwon, Woochul Lee, Ji-young Kim, Seunguk Noh, Changhee Lee and Jong-In Hong\*

Solution processable and thermally stable donor materials based on thiophene and triphenylamine were synthesized for bulk heterojunction solar cells. The best device performance exhibited maximum power conversion efficiency of 0.34%, under simulated AM 1.5 solar irradiation at 100 mW cm $^{-2}.\ \ \,$ 

750

$$(EtO)_2 P CO_2 Et Ar Or NO_2$$

$$Ar NO_2$$

$$Ar NO_2$$

# A convenient synthesis and cytotoxic evaluation of $\beta\text{-aryl-}\alpha\text{-methylidene-}\gamma\text{-lactones}$ and $\beta\text{-aryl-}\alpha\text{-methylidene-}\gamma\text{-lactams}$

Anna Albrecht, Łukasz Albrecht, Marek Różalski, Urszula Krajewska, Anna Janecka, Kazimierz Studzian and Tomasz Janecki\*

New  $\beta$ -aryl- $\gamma$ -ethyl- $\alpha$ -methylidene- $\gamma$ -lactones and  $\beta$ -aryl- $\gamma$ -ethyl- $\alpha$ -methylidene- $\gamma$ -lactams were synthesized and evaluated for their cytotoxic activity.

762

#### Enantioselective recognition of chiral carboxylic anions by a ruthenacyclic receptor

Pape Sylla Dieng, Claude Sirlin\* and Michel Pfeffer

A ruthenacyclic complex based on the Ru<sup>+</sup>-NH unit, chiral at the metal centre, was shown to complex and discriminate two enantiomeric carboxylic substrates. Due to the configurationally labile metal centre, the two (R) and (S)substrates are bound, but each specifically to one stereoisomer of the receptor.



#### **AUTHOR INDEX**

Alauzun, Johan, Albrecht, Anna, 750 Albrecht, Łukasz, 750 Alonso, Bruno, 607 Aw, Junxin, 594 Bahadur, D., 648 Bogdanski, Anja, 693 Boullanger, Arnaud, 738 Bowyer, Michael C., 686 Briceño, Alexander, 587 Cacciaguerra, Thomas, 607 Calvet, Teresa, 676 Cao, Yong, 699 Caravan, Peter, 611 Case, April W., 611 Chandra, Sudeshna, 648 Chen, Haihua, 732 Chen, Huihui, 732 Chen, Jiafu, 599 Chen, Jinping, 718 Chen, Yongsheng, 661 Chen, Zhigang, 732 Chen, Zhimin, 599 Corriu, Robert J. P., 738 Devoisselle, Jean-Marie, Dieng, Pape Sylla, 762 Dieudonné, Philippe, 607 Donne, Scott W., 686 Ekholm, Filip S., 667 Fang, Yaoguo, 591 607 Fatnassi, Mohamed, Font-Bardía, Mercè, Forsyth, Stewart A., Fröhlich, Ute, 723 Fu, Jianwei, 599 Fujiki, Michiya, 637 Gao, Xiang, 656

Goodrich, Peter, 723 Graham, Philip B., 611 Greenfield, Matthew T., 611 Gunaratne, H. Q. Nimal, 723 Guo, Zijian, 656 Han, Yongbin, 718 Hardacre, Christopher, 723 Hartnagel, Uwe, 693 He, Weijiang, 656 Hirai, Takayuki, 714 Hirsch, Andreas, 693 Holdsworth, Clovia I., 686 Hong, Jong-In, 744 Hu, Junqing, 732 Huang, Xiaobin, 599 Janecka, Anna, 750 Janecki, Tomasz, 750 Jiang, Tingshun, 708 Jung, Jong Hwa, 603 Kawagoe, Yoshifumi, 637 Kim, Hyun Jee, 603 Kim, Ji-young, 744 Kolodziej, Andrew F., Krajewska, Urszula, Kwon, Jongchul, 744 Larsen, Kim L., 693 Lee, Changhee, 744 Lee, Shim Sung, 603 Lee, Woochul, 744 Lei, Ting, 699 Leino, Reko, 667 Li, Yanqin, 661 Li, Yi, 718 Li, Yingying, Linares, Maholy, 587 Liu, Rongrong, 594 Liu, Zhipeng, 656

López, Concepción, Lu, Huihong, Luo, Jia, 699 Ma, Yuguo, 699 McCluskey, Adam, McKeown, Angela, McMurry, Thomas J., Mehdi, Ahmad, 738 Mehta, Shailee, 648 Moon, Suk-Hee, 603 Nair, Shrikumar A., 611 Nakano, Yoko, 637 Nangia, Ashwini, 623 Nigam, Saumya, 648 Noh, Seunguk, 744 Padmanabhan, Parasuraman 594 Pan, Dengyu, 591 Park, Ki-Min, 603 Pei, Jian, 699 Pérez, Sonia, 676 Pfeffer, Michel, 762 Qi, Jianfeng, 611 Qian, Fang, 656 Ren, Min, 708 Reyé, Catherine, 738 Różalski, Marek, Sarma, Bipul, 623 Sato, Hisako, 617 Schurig, Volker, 693 Seddon, Kenneth R., 723 Shen, Wenging, 591 Shiraishi, Yasuhiro, 714 Sinkkonen, Jari, 667 Sirlin, Claude, 762 Solans, Xavier, 676 Song, Yuelin, 732

Studzian, Kazimierz, 750 Sun, Yangang, 732 Suzuki, Takeshi, 714 Tamura, Kenji, 617 Tang, Xiaozhen, 599 Taniguchi, Masahiro, 617 Teo, Weiling, 594 Thakuria, Ranjit, 623 Tourné-Péteilh, Corine, 607 Turner, Nicholas W., 686 Vittal, Jagadese J., 603 Wan, Xiangjian, Wang, Aili, 708 Wang, Jian, 699 Wang, Lei, 699 Wang, Na, 732 Wang, Xifang, 611 Wistuba, Dorothee, Wu, Jianghong, 732 Wu, Minghong, Xing, Bengang, Xu, Qun, 599 Xue, Jinjuan, 708 Yamagishi, Akihiko, 617 Yang, Xiaoliang, 656 Yin, Hengbo, 708 Yuan, Zhao, 718 Zeng, Yi, 718 Zhang, Changli, 656 Zhang, Huaqiang, 661 Zhang, Jingchun, Zhang, Zhaoda, 611 Zhang, Zongwen, 591 Zheng, Shaojun, Zou, Rujia, 732

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