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RSC Advances, 2013, Issue 45, Page 22607 to 23834

Papers

[Superoleophilic and superhydrophobic biodegradable material with porous structures for oil absorption and oil–water separation](#)

Zhongxin Xue, Zhongxue Sun, Yingze Cao, Yuning Chen, Lei Tao, Kan Li, Lin Feng, Qiang Fu and Yen Wei

RSC Adv., 2013,**3**, 23432-23437

DOI: 10.1039/C3RA41902A

Novel biodegradable poly(lactic acid) with porous structures and superwetting properties can absorb or filtrate oil from water with high efficiency.

[Optoelectronic and structural properties of a family of thiophene functionalized 1,5-dithia-2,4,6,8-tetrazocines](#)

Soofieh S. Afjeh, Alicea A. Leitch, Iliia Korobkov and Jaclyn L. Brusso

RSC Adv., 2013,**3**, 23438-23444

DOI: 10.1039/C3RA44044C

In the pursuit of new building blocks for molecular functional materials, dithiatetrazocines functionalized with 5-substituted thienyl moieties have been prepared and their optoelectronic and structural properties explored.

[Study of cationic carbosilane dendrimers as potential activating stimuli in macrophages](#)

Javier Sánchez-Nieves, A. Judith Perisé-Barrios, Paula Ortega, Ángel L. Corbí, Ángeles Domínguez-Soto, M. Ángeles Muñoz-Fernández, Rafael Gómez and F. Javier de la Mata

RSC Adv., 2013,**3**, 23445-23453

DOI: 10.1039/C3RA43338B

The inflammatory activity of cationic carbosilane dendrimers with Si–O bonds has been evaluated in M1 macrophages. These dendrimers are not sensed as activating stimuli and, as consequence, do not trigger an inflammatory response.

[Ultrasmall PEGylated Mn_xFe_{3-x}O₄ \(x = 0–0.34\) nanoparticles: effects of Mn\(II\) doping on T₁- and T₂-weighted magnetic resonance imaging .](#)

Lijing Wang, Qiong Wu, Su Tang, Jianfeng Zeng, Ruirui Qiao, Pan Zhao, Yuan Zhang, Fengqin Hu and Mingyuan Gao

RSC Adv., 2013,**3**, 23454-23460

DOI: 10.1039/C3RA43985B

Ultrasmall PEGylated Mn_xFe_{3-x}O₄ (x = 0–0.34) nanoparticles were facially synthesized and the Mn(II) doping effects on T₁- and T₂-weighted MRI were investigated.

[Supercritical *N,N*-dimethylformamide for the exfoliation and phase transition of layered manganese oxide materials to obtain trimanganese tetroxide nanosheets](#) .
Lixi Yi and Guoxin Hu
RSC Adv., 2013,**3**, 23461-23469
DOI: 10.1039/C3RA43000F
A novel method using supercritical *N,N*-dimethylformamide (SC-DMF) exfoliation is proposed for the preparation of trimanganese tetroxide (Mn₃O₄) nanosheets.

[Simple microfluidic chip structure for an alignment-free Young interferometry-based refractometer](#)

Kosom Chaitavon, Sarun Sumriddetchkajorn and Jiti Nukeaw

RSC Adv., 2013,**3**, 23470-23473

DOI: 10.1039/C3RA44009E

We propose a two-flow-channel microfluidic chip for use in a Young interferometry-based refractometer structure.

[Research on the photoresponse current and photosensitive properties of Cu₂ZnSnS₄ thin film prepared by sulfurization of a sputtered metal precursor .](#)

Feng Jiang and Honglie Shen
RSC Adv., 2013,**3**, 23474-23481
DOI: 10.1039/C3RA42333F

The photoresponse current and photosensitive properties under different electrical field were studied for Cu₂ZnSnS₄ films.

[Modelling bovine serum albumin inside carbon nanotubes](#)

Ngamta Thamwattana, Duangkamon Baowan and Barry J. Cox

RSC Adv., 2013,**3**, 23482-23488

DOI: 10.1039/C3RA43991G

Interaction between carbon nanotubes and three BSA models is mathematically modelled, yielding the critical nanotube radius that stabilizes the system.

[Botryoidalis hollow Zn₂SnO₄ boxes@graphene as anode materials for advanced lithium-ion batteries](#)

Yang Zhao, Ying Huang, Wei Zhang, Qiufen Wang, Ke Wang, Meng Zong and Xu Sun

RSC Adv., 2013,**3**, 23489-23494

DOI: 10.1039/C3RA43173H

Hollow Zn₂SnO₄@graphene (GN) composites are synthesized after the calcined process of precursor ZnSn(OH)₆@GO, which are prepared by a simple co-precipitation and alkali etching method.

[Kinetic analysis and mathematical modeling of cell growth and canthaxanthin biosynthesis by *Dietzia natronolimnaea* HS-1 on waste molasses hydrolysate](#)

Seyed Mohammad Taghi Gharibzahedi, Seyed Hadi Razavi and Mohammad Mousavi

RSC Adv., 2013,**3**, 23495-23502

DOI: 10.1039/C3RA44663H

The kinetics of canthaxanthin biosynthesis as a novel green technology from enzymatic hydrolyzed molasses by *D. natronolimnaea* HS-1 was studied.

[Influences of organic–inorganic interfacial properties on the performance of a hybrid near-infrared optical upconverter](#)

Xinbo Chu, Min Guan, Yang Zhang, Yiyang Li, Xingfang Liu, Zhanping Zhu, Baoqiang Wang and Yiping Zeng

RSC Adv., 2013,**3**, 23503-23507

DOI: 10.1039/C3RA43143F

The performance of the hybrid upconverter was greatly influenced by organic–inorganic interfacial properties, possible mechanism was also supposed.

[Solid-state circularly polarised luminescence and circular dichroism of viscous binaphthyl compounds](#)

Tomoyuki Amako, Takunori Harada, Nozomu Suzuki, Kenji Mishima, Michiya Fujiki and Yoshitane Imai

RSC Adv., 2013,**3**, 23508-23513

DOI: 10.1039/C3RA43451F

Both viscous, axially chiral, binaphthyl compounds studied in the solid state, (*R*)-2,2-hepthoxy-1,1-binaphthyl and (*S*)-2,2-hepthoxy-1,1-binaphthyl, emit circularly polarised luminescence (CPL) when inorganics (KBr and KCl) and organic polymers (PMMA and PS) are employed as host matrices.

[Efficient blue-emitting electrophosphorescent organic light-emitting diodes using 2-\(3,5-di\(carbazol-9-yl\)phenyl\)-5-phenyl-1,3,4-oxadiazole as an ambipolar host](#) .
Yadong Zhang, Wojciech Haske, Dengke Cai, Stephen Barlow, Bernard Kippelen and Seth R. Marder
RSC Adv., 2013,**3**, 23514-23520
DOI: 10.1039/C3RA43720E
EQE values up to 21% and 25% have been obtained for OLEDs in which the title compound is used as a host for Flrpic and Ir(ppy)₃, respectively.

[Recent molecular engineering of room temperature ionic liquid electrolytes for mesoscopic dye-sensitized solar cells](#)

Feng Hao and Hong Lin

RSC Adv., 2013,**3**, 23521-23532

DOI: 10.1039/C3RA44209H

Recent progress on the molecular engineering of room temperature ionic liquids electrolytes for highly efficient DSCs are selectively summarized.

[Effects of a triethylamine catalyst on curing time and electro-optical properties of PDLC films](#)

Yanzi Gao, Ping Song, Tingting Zhang, Wenhuan Yao, Hangjun Ding, Jiumei Xiao, Siquan Zhu, Hui Cao and Huai Yang

RSC Adv., 2013,**3**, 23533-23538

DOI: 10.1039/C3RA44397C

Using a triethylamine catalyst, the curing time for preparing polymer dispersed liquid crystal (PDLC) films is shortened from 7 hours to 1 hour.

[Extraction of thorium from LiCl–KCl molten salts by forming Al–Th alloys: a new pyrochemical method for the reprocessing of thorium-based spent fuels](#)

Ya-Lan Liu, Yong-De Yan, Wei Han, Mi-Lin Zhang, Li-Yong Yuan, Kui Liu, Guo-An Ye, Hui He, Zhi-Fang Chai and Wei-Qun Shi

RSC Adv., 2013,**3**, 23539-23547

DOI: 10.1039/C3RA43292K

The first extraction of thorium from ThO₂ by forming Al–Th alloys assisted by AlCl₃ in LiCl–KCl melts.

[Organogels of triterpenoid–tripeptide conjugates: encapsulation of dye molecules and basicity increase associated with aggregation](#)

Jinrong Lu, Yuxia Gao, Jindan Wu and Yong Ju

RSC Adv., 2013,**3**, 23548-23552

DOI: 10.1039/C3RA43068E

Two triterpenoid–peptide conjugates containing oleanolic acid and glycyrrhetinic acid were synthesized and the organogel properties were studied. The results showed that the xerogels could selectively adsorb dyes from water and it could be utilized in water purification. In addition, the formation of supramolecular gels is associated to basicity increase by employing pH-indicator dyes in water.

[Comparison of a low transition temperature mixture \(LTTM\) formed by lactic acid and choline chloride with choline lactate ionic liquid and the choline chloride salt: physical properties and vapour–liquid equilibria of mixtures containing water and ethanol](#)

María Francisco, Agustín S. B. González, Sara Lago García de Dios, Wilko Weggemans and Maaïke C. Kroon

RSC Adv., 2013,**3**, 23553-23561

DOI: 10.1039/C3RA40303C

Low transition temperature mixtures (LTTMs) are evaluated for the first time as entrainers for the separation of azeotropic mixtures.

[Preparation, characterization and catalytic performance study of La-TS-1 catalysts](#)

Mei Wu, Huanling Song and Lingjun Chou

RSC Adv., 2013,**3**, 23562-23570

DOI: 10.1039/C3RA43035A

Lanthanum (La) was substituted into titanium silicalite 1 (TS-1) framework *via in situ* hydrothermal synthesis and ultrasonic immersing methods. Butadiene epoxidation was applied to evaluate activity of catalysts. Appropriated content of La modification (4–8 wt%) *via* the method of ultrasonic immersing would evidently promote TS-1 catalytic activity.

[Low aggregation magnetic polyethyleneimine complexes with different saturation magnetization for efficient gene transfection *in vitro* and *in vivo* .](#)

Li Xie, Wen Jiang, Yu Nie, Yiyan He, Qian Jiang, Fang Lan, Yao Wu and Zhongwei Gu

RSC Adv., 2013,**3**, 23571-23581

DOI: 10.1039/C3RA43588A

Magnetic polyethyleneimine (PEI) complexes have proven to be simple and efficient carriers for enhanced gene transfection, while the possibility of severe aggregation restricts their further application *in vivo*.

[Synthesis of Markovnikov vinyl sulfides via dinuclear Rh\(I\)-phosphine catalyzed hydrothiolation of alkynes in aqueous media](#)

Shravankumar Kankala, Srinivas Nerella, Ravinder Vadde and Chandra Sekhar Vasam

RSC Adv., 2013,**3**, 23582-23588

DOI: 10.1039/C3RA44499F

An efficient regioselective and recyclable hydrothiolation procedure for the synthesis of Markovnikov vinyl sulfides in aqueous media was developed by employing the water soluble dinuclear Rh(I)-phosphine catalysts.

[A microengineered cell fusion approach with combined optical tweezers and microwell array technologies](#)

Xiaolin Wang, Shuxun Chen, Yu Ting Chow, Chi-wing Kong, Ronald A. Li and Dong Sun

RSC Adv., 2013,**3**, 23589-23595

DOI: 10.1039/C3RA44108C

A microengineered approach is developed to realize the laser-induced cell fusion with both high selectivity and high controllability.

[Novel dielectric relaxation behaviors driven by host–guest interactions in intercalated compounds of kaolinite with aminopyridine isomers](#)

Guang-Zhen Zou, Hong Gao, Jian-Lan Liu, Shun-Ping Zhao, Zheng-Fang Tian and Xiao-Ming Ren

RSC Adv., 2013,**3**, 23596-23603

DOI: 10.1039/C3RA40579F

The intercalated compounds of kaolinite with three aminopyridine isomers show substituent-dependent dielectric relaxation behaviors, which is related to the different host–guest interactions between the pyridine isomer molecule and kaolinite framework.

[CelB and -glucosidase immobilization for carboxymethyl cellulose hydrolysis](#)

Clara T. H. Tran, Neil J. Nosworthy, Alexey Kondyurin, David R. McKenzie and Marcela M. M. Bilek

RSC Adv., 2013,**3**, 23604-23611

DOI: 10.1039/C3RA43666G

Plasma immersion ion implantation (PIII) treatment on polymers for surface immobilization of enzymes.

[Reduced graphene oxide induced confined growth of PbTe crystals and enhanced electrochemical Li-storage properties](#)

Fangfang Tu, Ying Huo, Jian Xie, Gaoshao Cao, Tiejun Zhu, Xinbing Zhao and Shichao Zhang

RSC Adv., 2013,**3**, 23612-23619

DOI: 10.1039/C3RA42466A

PbTe nanocubes are anchored on rGO sheets by a facile one-pot solvothermal route. The presence of rGO changes the crystallization habit and improves the Li-storage properties of PbTe significantly.

[A three-dimensional neuronal culture technique that controls the direction of neurite elongation and the position of soma to mimic the layered structure of the brain](#) .

Aoi Odawara, Masao Gotoh and Ikuro Suzuki

RSC Adv., 2013,**3**, 23620-23630

DOI: 10.1039/C3RA44757J

Reconstruction techniques can mimic tissue structure using three-dimensional (3D) substrates or scaffolds to facilitate functional tissue engineering for transplantation or robust experimental models.

[Mechanically robust biocomposite films of chitosan grafted carbon nanotubes via the \[2 + 1\] cycloaddition of nitrenes](#)

Santosh Kumar Yadav, Sibdas Singha Mahapatra, Mukesh Kumar Yadav and Pradip Kumar Dutta

RSC Adv., 2013,**3**, 23631-23637

DOI: 10.1039/C3RA41990H

Mechanically robust biocomposite films of chitosan grafted multiwalled carbon nanotubes (MWCNTs) prepared using the [2 + 1] cycloaddition of nitrenes, followed by an amidation reaction with chitosan.

[Facile preparation, high microwave absorption and microwave absorbing mechanism of RGO–Fe₃O₄ composites](#)

Meng Zong, Ying Huang, Yang Zhao, Xu Sun, Chunhao Qu, Didi Luo and Jiangbo Zheng

RSC Adv., 2013,**3**, 23638-23648

DOI: 10.1039/C3RA43359E

Reduced graphene oxide (RGO)–Fe₃O₄ composites with obviously enhanced microwave absorption properties were successfully fabricated by a rational one-pot simplified co-precipitation route, which avoided the usage of an inert gas and any additional chemical agents (such as surfactants and stabilizers).

[Surface band structure of aryl-diazonium modified p-Si electrodes determined by X-ray photoelectron spectroscopy and electrochemical measurements](#)

Thomas Cottineau, Mario Morin and Daniel Bélanger

RSC Adv., 2013,**3**, 23649-23657

DOI: 10.1039/C3RA44366C

The control of the surface properties of p-Si, modified by grafted organic layers is characterized by XPS and electrochemical methods.

[Inkjet printing of palladium source and drain electrodes on individual single-wall carbon nanotubes to fabricate field effect transistors](#)

Kaikun Yang, Liwei Huang, Yayong Liu, Congkang Xu, Yanhu Bai, Shaoming Huang, Zhihao Yang, Zhiyong Xu and Howard Wang

RSC Adv., 2013,**3**, 23658-23663

DOI: 10.1039/C3RA43922D

Field effect transistors (FETs) have been fabricated on individual single-wall carbon nanotubes by inkjet printing of source and drain electrodes using palladium nanoparticles.

[Peptide-based surface modified silica particles: adsorption materials for dye-loaded wastewater treatment](#)

Sudipta Ray, Makoto Takafuji and Hirotaka Ihara

RSC Adv., 2013,**3**, 23664-23672

DOI: 10.1039/C3RA43871F

Surface-modified silica particles were prepared *via* solid-phase grafting methodology, and their prospective utility in wastewater treatment was evaluated.

[Mesoporous TiO₂ as a nanostructured substrate for cell culture and cell patterning](#)

Sangphil Park, Sung Hoon Ahn, Hyun Jong Lee, Ui Seok Chung, Jong Hak Kim and Won-Gun Koh

RSC Adv., 2013,**3**, 23673-23680

DOI: 10.1039/C3RA45136D

Graft copolymer-templated mesoporous TiO₂ films were utilized as substrates for cell culture and cell micropatterning, promoting various behaviors of fibroblasts.

[Spectroscopic and DFT investigations on the corrosion inhibition behavior of tris\(5-methyl-2-thioxo-1,3,4-thiadiazole\)borate on high carbon steel and aluminium in HCl media .](#)

Ramalingam Tamilarasan and Anandaram Sreekanth

RSC Adv., 2013,**3**, 23681-23691

DOI: 10.1039/C3RA43681K

This is the first investigation of a scorpionate ligand as a corrosion resistive inhibitor. The scorpionate ligand protects both metals from corrosion by the acid. The inhibiting properties have been studied by electrochemical spectroscopy, surface analysis, adsorption and theoretically.

[Enantioselective total syntheses and determination of absolute configuration of marine toxins, oxazinins](#)

Dattatraya H. Dethe and Alok Ranjan

RSC Adv., 2013,**3**, 23692-23703

DOI: 10.1039/C3RA44631J

The enantioselective total syntheses of natural marine toxins, oxazinin-1, -2, -4, -5, -6 and linear precursor preoxazinin-7 are described.

[-Phase transformation and energy transfer induced photoluminescence modulation of fluorene based coploymer mono-dispersive nanoparticles](#)

Mingliang Sun, Jieliang Yu, Xing Huang, Hongtao Xue and Chun-Sing Lee

RSC Adv., 2013,**3**, 23704-23708

DOI: 10.1039/C3RA44713H

1–3 nm fluorene based coploymer mono-dispersive nanoparticles photoluminescence can be modulated by -phase transformation and energy transfer.

[Morphology-controlled fabrication of hierarchical mesoporous NiCo₂O₄ micro-/nanostructures and their intriguing application in electrochemical capacitors](#) .

Le Yu, Haobin Wu, Tian Wu and Changzhou Yuan

RSC Adv., 2013,**3**, 23709-23714

DOI: 10.1039/C3RA44546A

Hierarchical mesoporous NiCo₂O₄ micro-/nanostructures with NW or NS building blocks deliver remarkable electrochemical performance with high specific capacitance and decent life span as potential electrodes for advanced supercapacitors.

[Synthesis and electromagnetic interference shielding effectiveness of ordered mesoporous carbon filled poly\(methyl methacrylate\) composite films](#)

Hu Zhou, Jiacheng Wang, Jiandong Zhuang and Qian Liu

RSC Adv., 2013,**3**, 23715-23721

DOI: 10.1039/C3RA44267E

Novel thin films of ordered mesoporous carbon composited with poly(methyl methacrylate) were fabricated as efficient electromagnetic interference shielding materials.

[A general synthesis of metal \(Mn, Fe, Co, Ni, Cu, Zn\) oxide and silica nanoparticles based on a low temperature reduction/hydrolysis pathway](#)

Vinith Yathindranath, Matthew Worden, Zhizhi Sun, Donald W. Miller and Torsten Hegmann

RSC Adv., 2013,**3**, 23722-23729

DOI: 10.1039/C3RA44565H

A simple, fast and general method for the synthesis of Mn_3O_4 , Fe_3O_4 , Co_3O_4 , Ni/NiO , $\text{Cu/Cu}_2\text{O}$, and ZnO NPs with a 5 nm domain size is presented. This method was extended to larger silica NPs, *in situ* fluorescent dye containing silica NPs, and silica NPs surface-modified with magnetic Fe_3O_4 -NPs.

[Effect of electroactive phase transformation on electron structure and dielectric properties of uniaxial stretching poly\(vinylidene fluoride\) films](#)

Hui-Jian Ye, Li Yang, Wen-Zhu Shao, Song-Bai Sun and Liang Zhen

RSC Adv., 2013,**3**, 23730-23736

DOI: 10.1039/C3RA43966F

Simple stretching leads to the increase of -phase fraction in PVDF films, as well as the morphology variation of spherulites (see figure, left is pristine film and right is stretched sample). The changes of electron structure and dielectric properties were also presented.

[A strategy to fabricate bismuth ferrite \(BiFeO₃\) nanotubes from electrospun nanofibers and their solar light-driven photocatalytic properties .](#)

Sakar Mohan and Balakumar Subramanian

RSC Adv., 2013,**3**, 23737-23744

DOI: 10.1039/C3RA44085K

Fabrication of bismuth ferrite nanotubes from the as-electrospun fibers and their solar-light driven photocatalytic activity has been demonstrated.

[Thermal decomposition synthesis of Al-doped ZnO nanoparticles: an in-depth study](#)

Hanne Damm, Anke Kelchtermans, Anne Bertha, Freya Van den Broeck, Ken Elen, José C. Martins, Robert Carleer, Jan D'Haen, Christopher De Dobbelaere, Joke Hadermann, An Hardy and Marlies K. Van Bael
RSC Adv., 2013,**3**, 23745-23754

DOI: 10.1039/C3RA43328E

Nucleophilic reaction of 1,2-hexadecanediol on Zn and Al acetylacetonates gives rise to Al-doped ZnO nanoparticles, in-situ stabilized with deprotonated oleic acid. Effective Al incorporation is shown by the HAADF-STEM image.

[CdS quantum dot-decorated titania/graphene nanosheets stacking structures for enhanced photoelectrochemical solar cells](#)

Kefeng Wang, Sijie Wan, Qingqing Liu, Nailiang Yang and Jin Zhai

RSC Adv., 2013,**3**, 23755-23761

DOI: 10.1039/C3RA43770A

CdS quantum dot-decorated titania/graphene nanosheets stacking structures have been fabricated through a layer-by-layer method combined with a successive ionic layer adsorption and reaction method. Photoanodes based on such stacking structures exhibit enhanced photocurrent responses under simulated solar light irradiation.

[Fluorine doped Fe₂O₃ nanostructures by a one-pot plasma-assisted strategy](#)

G. Carraro, A. Gasparotto, C. Maccato, E. Bontempi, O. I. Lebedev, S. Turner, C. Sada, L. E. Depero, G. Van Tendeloo and D. Barreca

RSC Adv., 2013,**3**, 23762-23768

DOI: 10.1039/C3RA43775B

A facile plasma-assisted vapor-phase deposition route for the fabrication of F-doped Fe₂O₃ nanostructures with controlled chemical composition and morphological organization is reported.

[Modeling aqueous-phase hydrodeoxygenation of sorbitol over Pt/SiO₂-Al₂O₃](#)

Brian M. Moreno, Ning Li, Jechan Lee, George W. Huber and Michael T. Klein

RSC Adv., 2013,**3**, 23769-23784

DOI: 10.1039/C3RA45179H

In this paper, we investigated the effects of temperature, hydrogen partial pressure, and sorbitol concentration on the aqueous-phase hydrodeoxygenation (APHDO) of sorbitol over a bifunctional 4 wt% Pt/SiO₂-Al₂O₃ catalyst in a trickle bed reactor.

[Mesoporous TiO₂ as the support of tetraethylenepentamine for CO₂ capture from simulated flue gas](#)

Fujiao Song, Qin Zhong, Jie Ding, Yunxia Zhao and Yunfei Bu

RSC Adv., 2013,**3**, 23785-23790

DOI: 10.1039/C3RA42998A

Mesoporous TiO₂ (MT) was prepared by a hydrothermal method and used as the supporting material for the immobilization of tetraethylenepentamine (TEPA) to develop a new type of adsorbent for CO₂ capture from flue gas.

[Enhancement of hydrogen production via hydrogen peroxide as an oxidant](#)

Radwa A. Elsalamony, Dalia R. Abd El-Hafiz, Mohamed A. Ebiad, Abdo M. Mansour and Lamia. S. Mohamed

RSC Adv., 2013,**3**, 23791-23800

DOI: 10.1039/C3RA43560A

Hydrogen peroxide is an effective oxidant for OSRE over Ni/Ce_{1-x}Zr_xO₂ catalysts due to, its ability to suppress CO formation, carbon deposition and increase H₂/CO ratio.

[Mesoporous NiO nanoarchitectures for electrochemical energy storage: influence of size, porosity, and morphology](#)

Mohamed Khairy and Sherif A. El-Safty

RSC Adv., 2013,**3**, 23801-23809

DOI: 10.1039/C3RA44465A

Superior supercapacitor devices based on mesoporous NiO NCs with slice- and platelet-like morphologies were fabricated under microwave-reflux conditions.

[Hydrogen generation from solvolysis of sodium borohydride in ethylene glycol–water mixtures over a wide range of temperature](#)

Da-Wei Zhuang, Hong-Bin Dai and Ping Wang

RSC Adv., 2013,**3**, 23810-23815

DOI: 10.1039/C3RA43136C

A hydrogen generation system composed of NaBH₄, EG–H₂O mixture and CoCl₂ additive can deliver 4.2 wt% H₂ within 6 min at 0 °C.

[Oxidation of ferrocenemethanol grafted to a hydrogel network through cysteine for triggering volume phase transition](#)

Klaudia Kaniewska, Jan Romaski and Marcin Karbarz

RSC Adv., 2013,**3**, 23816-23823

DOI: 10.1039/C3RA42405G

The swelling and electrochemical properties of new gels based on *N*-isopropylacrylamide and cystine modified with ferrocenemethanol.

[Effect of substitution of B-sites by Mn, Fe and Co in double perovskite-type Ba₃CaNb₂O₉ on structure and electrical properties](#) .

Wang Hay Kan, Milad Roushanafshar, Adrien Vincent, Tobias Fürstenhaupt, Masood Parvez, Jingli Luo and Venkataraman Thangadurai
RSC Adv., 2013,**3**, 23824-23832
DOI: 10.1039/C3RA44429E
A novel family of metal oxides of chemical formula Ba₂Ca_(1-xy)M_(x+z)Nb_(1z+y)O₆ (M = Mn, Fe and Co) was developed as mixed ion and electronic conductors (MIECs) for application in solid oxide fuel cells (SOFCs).

Cover

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RSC Adv., 2013,**3**, 23833-23834
DOI: 10.1039/C3RA90132G