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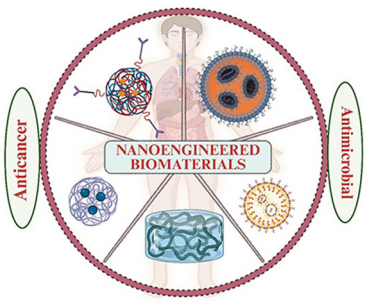
EDITORIAL

3756

Nanoengineered biomaterials for anticancer and antimicrobial drug targeting

Sabya Sachi Das, Janne Ruokolainen and Kavindra Kumar Kesari*

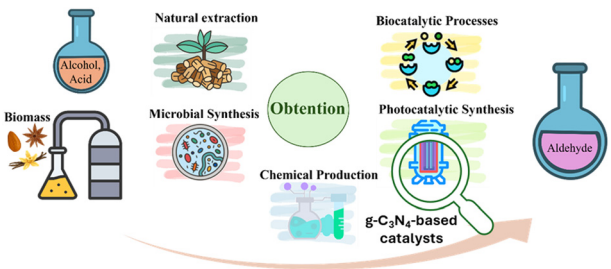


REVIEWS

3760

Selective production of aldehydes: from traditional alternatives to alcohol photo-oxidation using g-C_3N_4-based materials

M. A. Quintana, D. Rodriguez-Padrón, P. Jiménez-Calvo, M. Calero, R. R. Solís* and M. J. Muñoz-Batista*



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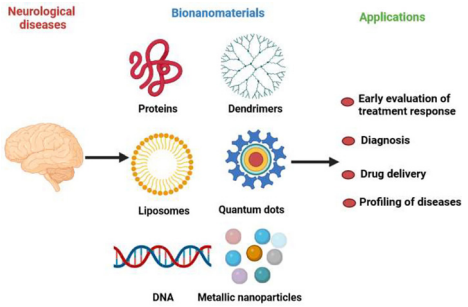
REVIEWS

3785

Applications of bionanomaterials in neurodegenerative diseases

Abhijit Biswas,* Pravin Hivare, Raghu Solanki, Sharad Gupta and Dhiraj Bhatia*

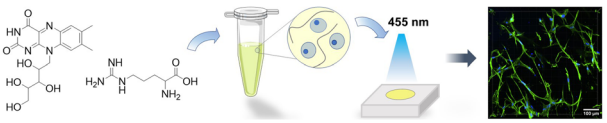


PAPERS

3805

Biobased photocrosslinkable gelatin-methacrylate hydrogels promote the growth and phenotype maintenance of human corneal keratocytes

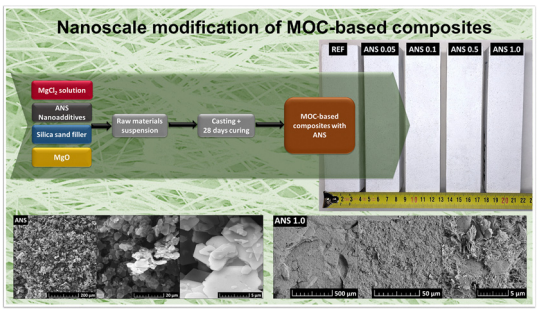
Friederike Dehli, Olivia Schless, Meret Kaliske, Isabel Potthof, Alexandre Taoum, Matthias Fuest and Daniela Duarte Campos*



3817

Nanoscale modification of MOC-based composites: the influence of alumina nanosheets on the microstructure and material properties

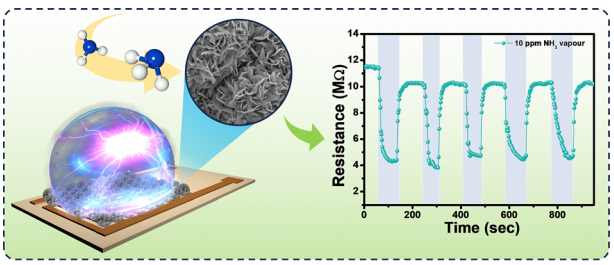
Anna-Marie Lauermannová,* Adéla Jiříčková, Martina Záleská, Milena Pavlíková, Adam Pivák, Ondřej Jankovský and Zbyšek Pavlík



3828

Highly selective ammonia sensing at room temperature using DC plasma-modified MoS_2 nanoflowers

Anurag Kashyap, Bipradip Chakraborty, Tonmoi Hazarika, Sanjeeb Chouhan, Bharat Kakati and Hemen Kalita*



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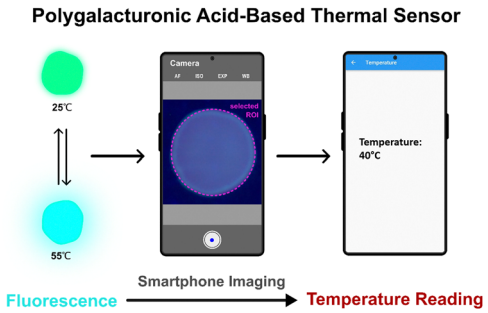
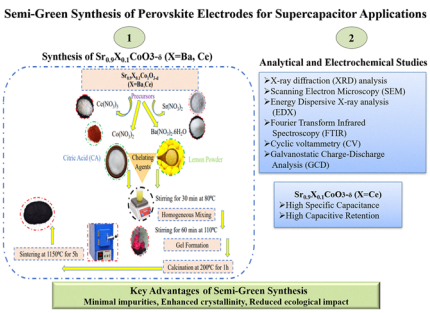
3841



Temperature-responsive fluorescent polygalacturonic acid: a step towards wound monitoring with smartphone imaging

Dana Kaafarani, Jad Kaj and Pierre Karam*

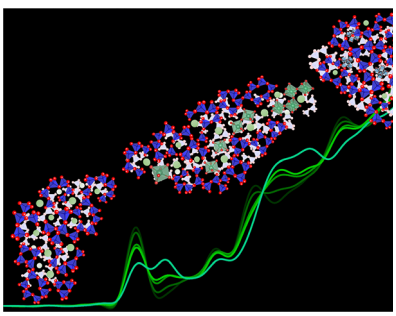
3851



Novel bio-chelating agent-assisted eco-friendly synthesis of $Sr_{0.9}X_{0.1}CoO_{3-\delta}$ (X = Ba, Ce) perovskite electrodes for supercapacitor applications

Muneeb Irshad,* Muhammad Asif, Muhammad Salim Butt, Muhammad Rafique, Misbah Durrani and Ahmed M. Fouda

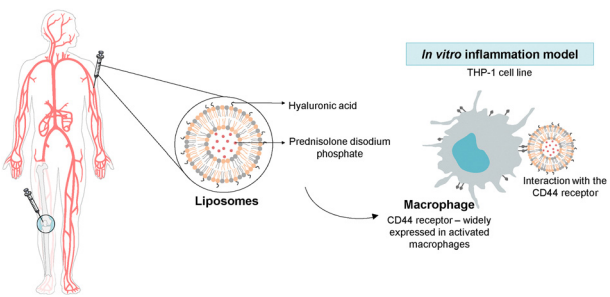
3863



Unraveling the structural complexity of niobate units in aluminosilicate glasses and glass–ceramics

Maria Rita Cicconi,* Koji Kimura, Henrik Bradtmüller, Hongyi Deng, Shinji Kohara, Yohei Onodera, Tomokatsu Hayakawa, Seiya Shimono, Koichi Hayashi and Dominique de Ligny

3875



Assessment of hyaluronic acid-conjugated pH-sensitive liposomes for prednisolone delivery to activated macrophages

Andreia Marinho, Salette Reis and Cláudia Nunes*

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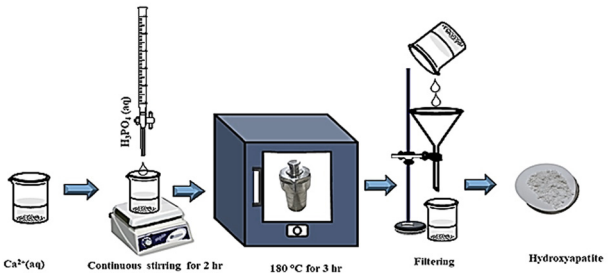
PAPERS

3889

Crystalline structure modification of hydroxyapatite *via* a hydrothermal method using different modifiers

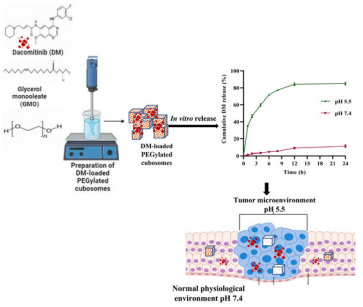
Md. Kawsar, Md. Sahadat Hossain,* Newaz Mohammed Bahadur, Dipa Islam and Samina Ahmed*



3903

Optimized PEGylated cubosomes: a novel approach for specific delivery of dacomitinib to non-small cell lung cancer cells

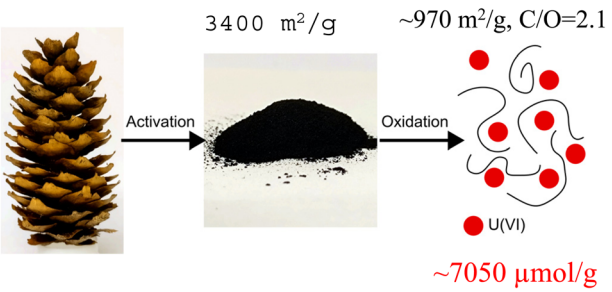
Mohamed Nasr,* Rania Mokhtar and Rania S. Abdel-rashid



3918

Extraordinary U(VI) sorption capacity of high surface area super-oxidized carbons

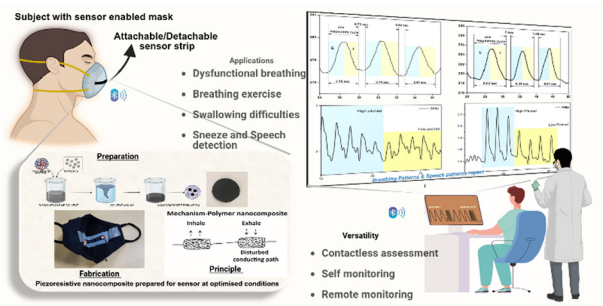
Tamuna Bakhiia, Bartosz Gurzeda, Gui Li, Nicolas Boulanger, Konstantin Maslakov, Anna Krot, Alexander Trigub, Anna Yu. Romanchuk,* Stepan N. Kalmykov and Alexandr V. Talyzin*



3929

Development of a face mask attachable wireless piezoresistive nanocomposite sensor for monitoring respiratory health

D. B. Niranjan, Mathew Peter, Jeevan Medikonda and Pramod Kesavan Namboothiri*



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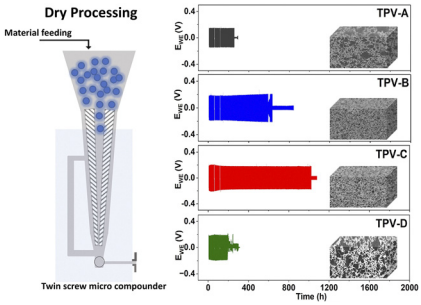
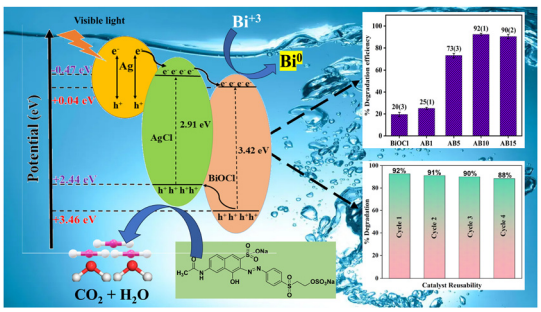
3945



Optimizing the dry processing parameters of thermoplastic vulcanizate electrolytes for improved microstructure and its impact on electrochemical stability

Mona Azimi, Gabrielle Foran, Cédric Barcha, Caroline St-Antoine, Arnaud Prébé and Mickael Dollé*

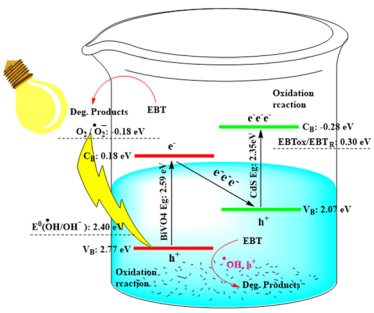
3957



Superior photocatalytic degradation of Reactive Orange 16 by Ag–AgCl/BiOCl nanocomposites under visible light

Kamya Jasuja and Raj Kumar Das*

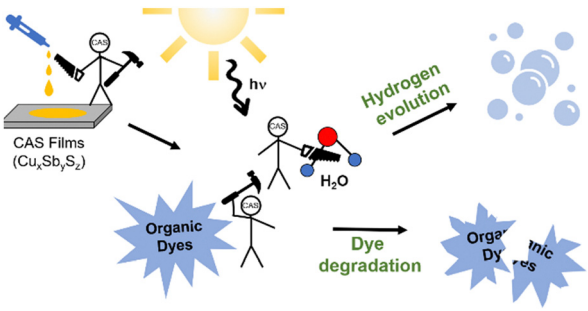
3969



A photodegradation study of the deposition fabricated CdS–$BiVO_4$ binary catalyst: a brief comparison with other fabrication procedures

Pooneh Hemmatpour, Alireza Nezamzadeh-Ejhieh* and Ali Ershadi

3985



Phase formation and photocatalytic properties of chalcostibite and tetrahedrite thin films derived from copper and antimony xanthates

Marco Sigl, Melissa Egger, Daniel Knez, Stephen Nagaraju Myakala, Connor M. J. Marshall, Joe Kaye, Ali Salehi-Reyhani, Heinz Amenitsch, Alexey Cherevan, Dominik Eder, Gregor Trimmel, Saif A. Haque and Thomas Rath*

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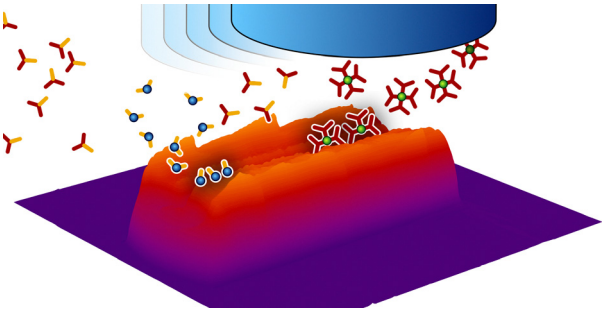
PAPERS

3998

Direct-patterning SnO_2 deposition by atomic-layer additive manufacturing

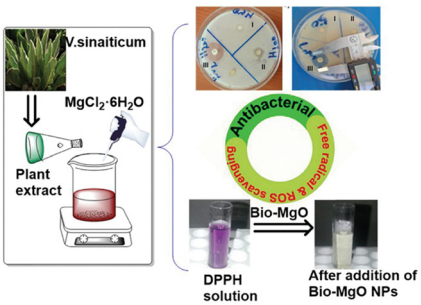
Sonja Kürten, Kimia Hashemizadeh, Mingjian Wu, Johannes Will, Ivan Kundrata, Erdmann Spiecker and Julien Bachmann*



4003

Biogenic synthesis and characterization of MgO nanoparticles using *Verbascum sinaiticum*: antibacterial, free radical, and reactive oxygen species scavenging activities

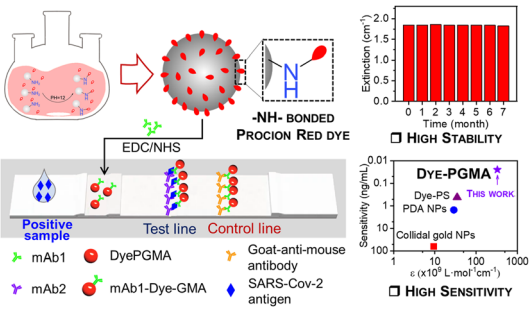
Wubshet Mekonnen Girma,* Muluset Shiferaw Aragie, Biniyam Abdu Berehe and Ayalew H. Assen



4016

Procion red dye chemically bonded PGMA microspheres towards leakage free and sensitivity improved lateral flow immunoassay

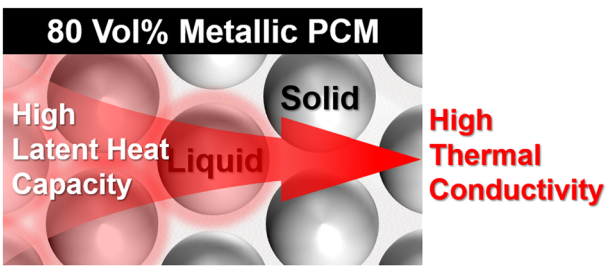
Yunpeng Wang, Xiaoru Dai, Songle Wang, Pragati Awasthi, Wenkun Dong, Dong Chen, Shisheng Ling, Xvsheng Qiao,* Zhiyu Wang, Xianping Fan and Guodong Qian



4027

Gallium-in-glycerol phase change material emulsions (PCMEs) with superior latent heat capacity and thermal conductivity

Chae Young Park, Suji Kim, Chimin Song, Jieun Kim and Joohyung Lee*



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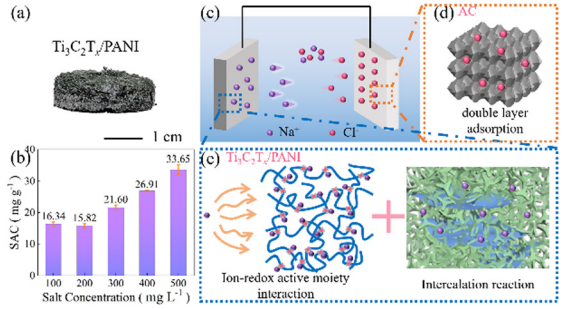
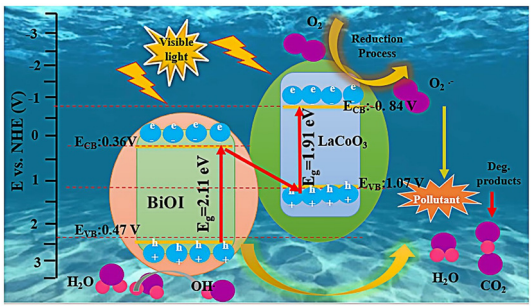


***In situ* polymerized porous $Ti_3C_2T_x$/PANI as an electrode material for enhanced desalination performance in asymmetric capacitive deionization**

Xiaoyan Yang,* Xiaoke Lv, Tao Wen, Zhen Wang, Yubin Zhou, Tianmeng Zhang and Jianfeng Zhang*

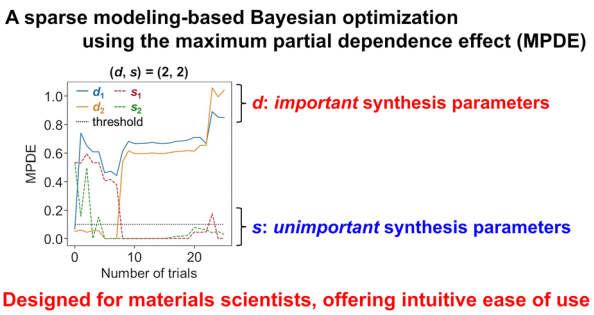
4046



An outstanding, efficient visible-light-driven BiOI/$LaCoO_3$ Z-scheme system toward cefixime degradation

Razieh Ahesteh, Alireza Nezamzadeh-Ejhieh* and Seyed Nezamoddin Mirsattari

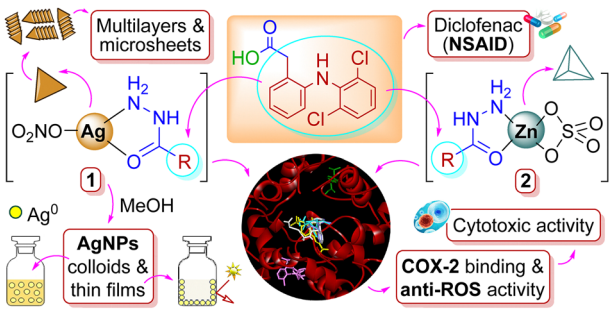
4062



Sparse modeling based Bayesian optimization for experimental design

Ryuji Masui,* Unseo Lee, Ryo Nakayama* and Taro Hitosugi

4070



A multilayered supramolecular chelate of diclofenac-appended Ag^I-hydrazide as an efficient anti-inflammatory, anticancer, and nanometal dispersing material, in comparison to analogous Zn^{II}-hydrazide

Qurrat-ul-Ain,* Sammer Yousuf, Summaiyah Bibi, Irum Hamid, Shazia Shah and Sumaira Khurshid

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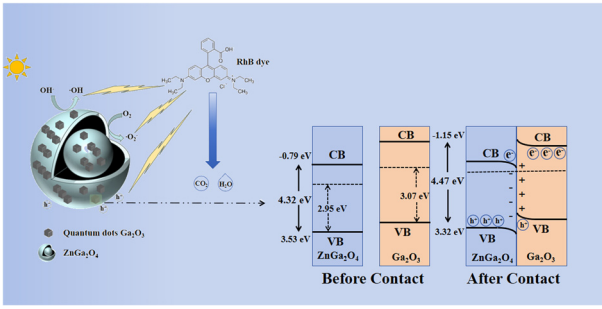
PAPERS

4096

High photocatalytic performance of $ZnGa_2O_4$/Ga_2O_3 double-shell hollow sphere structures prepared *via* a one-step hydrothermal method

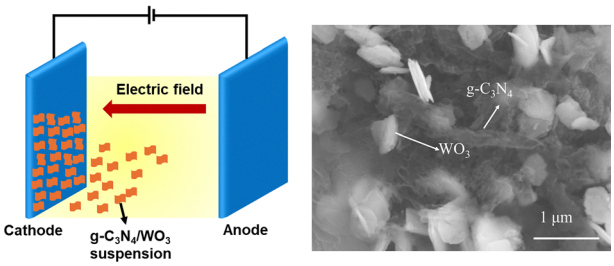
Zeyu Yang, Jizhou Yang and Haibo Fan*



4106

Unlocking photoanode performance through a roadmap for electrophoretic deposition of carbon nitride/tungsten oxide heterojunction thin films

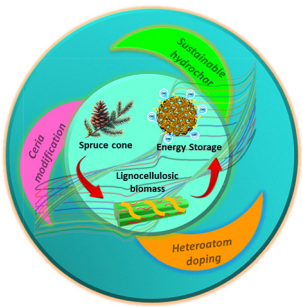
Madasamy Thangamuthu,* Tara M. LeMercier, Emerson C. Kohlrausch, Samuel Lewis, Matthew Macfarlane, Jesum Alves Fernandes and Andrei N. Khlobystov*



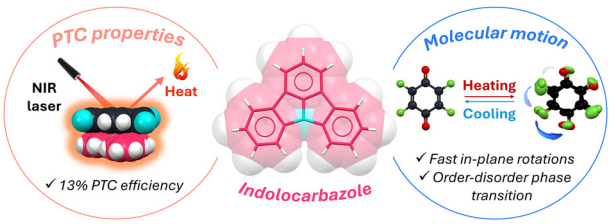
4115

Ionic liquid-assisted hydrothermal valorization and redox site engineering of spruce cone biowaste for high-performance heteroatom-doped and ceria-modified electrodes for sustainable supercapacitor applications

Khadija Chaudhary, Adeen Ilyas, Tomáš Zelenka, Hidetsugu Shiozawa, Muhammad Farooq Warsi, Eric W. Cochran* and Sonia Zulfiqar*



4132

Exploring the dynamic behaviour and optical properties of indolocarbazole charge-transfer cocrystals

Jade Cisneros, Ernesto A. Hernández-Morales, Armando Navarro-Huerta, Jan Blahut, Erika Bartůňková, Simon J. Teat, Rubén A. Toscano, Martin Dračínský* and Braulio Rodríguez-Molina*