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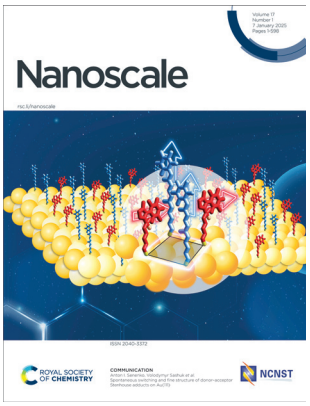

Cover
See Anton I. Senenko, Volodymyr Sashuk *et al.*, pp. 214–218.

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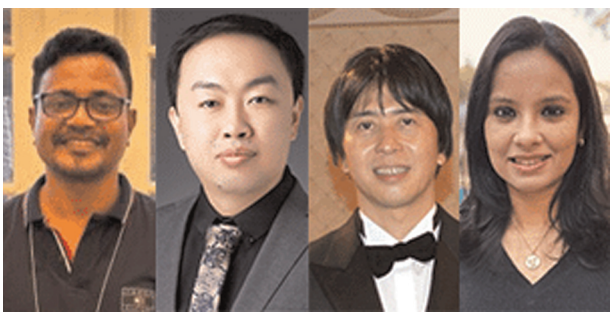
Introduction to metal nanoclusters

Sukhendu Mandal, Di Sun, Yuichi Negishi and Anindita Das



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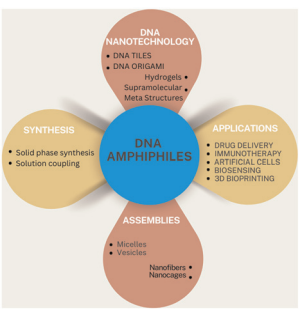
DNA-amphiphilic nanostructures: synthesis, characterization and applications

Nishkarsh Jain, Ankur Singh and Dhiraj Bhatia*



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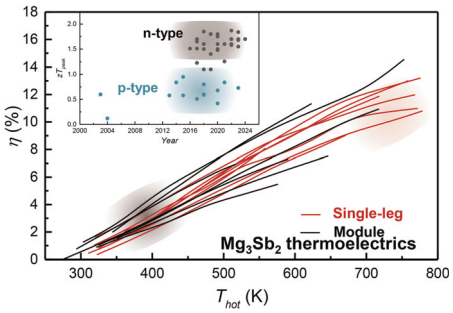
Advances in Mg_3Sb_2 thermoelectric materials and devices

Jing Tang, Vaskuri C. S. Theja, Kejia Liu, Vaithinathan Karthikeyan and Yue Chen*



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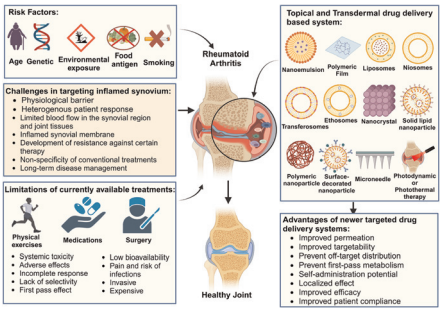
Revolutionizing rheumatoid arthritis treatment with emerging cutaneous drug delivery systems: overcoming the challenges and paving the way forward

Sakshi Priya, Kaushal Kailash Jain, Jeevika Daryani, Vaibhavi Meghraj Desai, Himanshu Kathuria and Gautam Singhvi*



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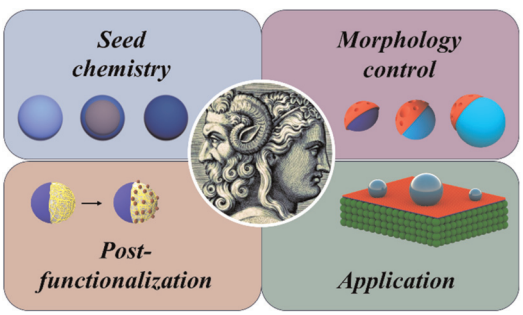
Two sides of the coin: synthesis and applications of Janus particles

Yifan Li, Fei Liu, Serkan Demirci, Utsav Kumar Dey, Thamer Rawah, Aneeba Chaudary, Ricardo Ortega, Zhengtao Yang, Emad Pirhadi, Bingrui Huang, Xin Yong and Shan Jiang*



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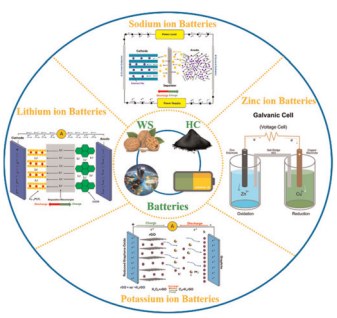
Lamiae Oulbaz, Meriem Kasbaji,* Mustapha Oubenali, Amine Moubarik, Zineb Kassab, Abdelwahed Chari, Mouad Dahbi and Mounir El Achaby*



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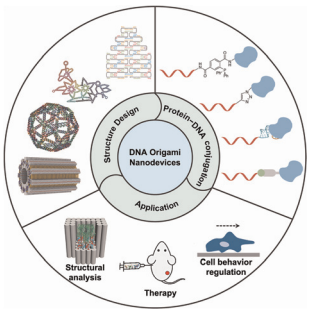

Constructing protein-functionalized DNA origami nanodevices for biological applications

Chuangyuan Zhao, Xinran Jiang, Miao Wang, Songbai Gui,* Xin Yan,* Yuanchen Dong* and Dongsheng Liu*

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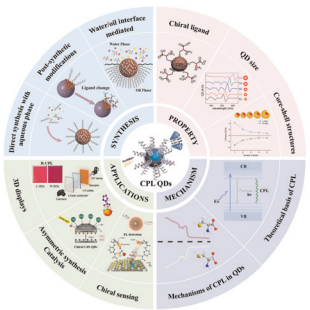

From synthesis to chiroptical activities: advancements in circularly polarized luminescent inorganic quantum dots

Xinyu Wang, Wenhui Yan, Dai-Wen Pang and Jiarong Cai*

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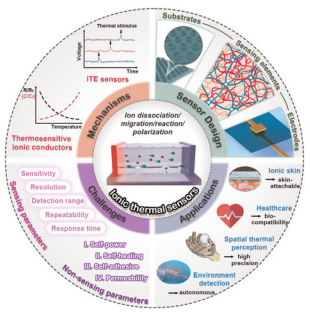

Advances in flexible ionic thermal sensors: present and perspectives

Zehao Zhao, Yun Shen, Run Hu and Dongyan Xu*

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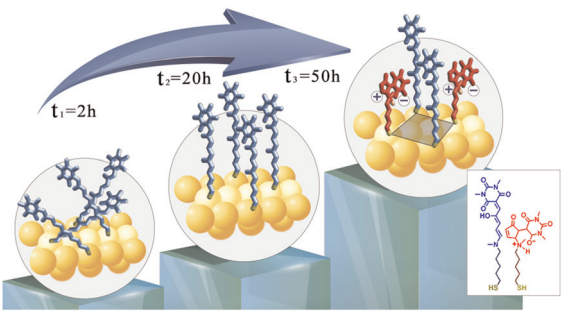

Spontaneous switching and fine structure of donor–acceptor Stenhouse adducts on Au(111)

Anton I. Senenko,* Alexandr A. Marchenko, Oleksandr Kurochkin, Oleksiy L. Kapitanchuk, Mykola Kravets, Vassili G. Nazarenko and Volodymyr Sashuk*

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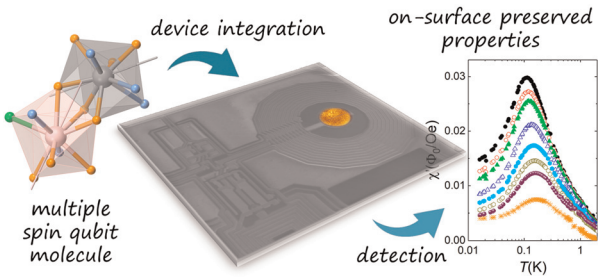
Asymmetric [Dy_2] molecules deposited into micro-SQUID susceptometers: *in situ* characterization of their magnetic integrity

Ana Repollés, María Carmen Pallarés, David Aguilà, Olivier Roubeau, Verónica Velasco, Diego Gella, Leoní A. Barrios, María José Martínez-Pérez, Javier Sesé, Dietmar Drung, Jesús Ignacio Martínez, Thomas Schurig, Boris Le Guennic, Anabel Lostao, Guillem Aromí* and Fernando Luis*



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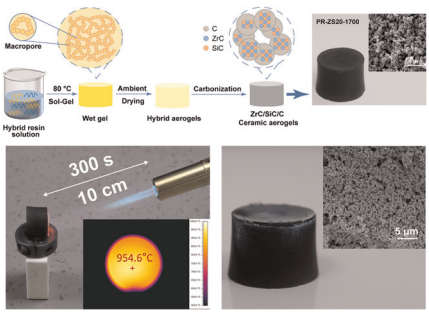
Preceramic polymer-hybridized phenolic aerogels and the derived ZrC/SiC/C ceramic aerogels with ultrafine nanocrystallines

Ding Nie, Hangyu Zhong, Hongli Hu, Zhenhua Luo* and Bo-xing Zhang*



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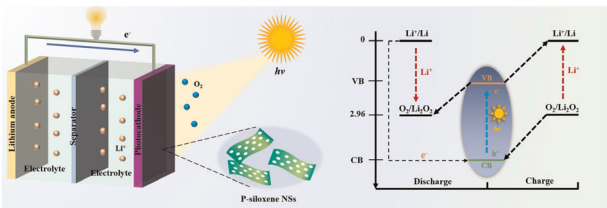
Holey etching strategy of siloxene nanosheets to improve the rate performance of photo-assisted Li–O_2 batteries

Wenpu Xu, Zitai Fu, Huanbao Shi, Qi Li,* Xuexia He, Jie Sun, Ruibin Jiang, Zhibin Lei and Zong-Huai Liu*



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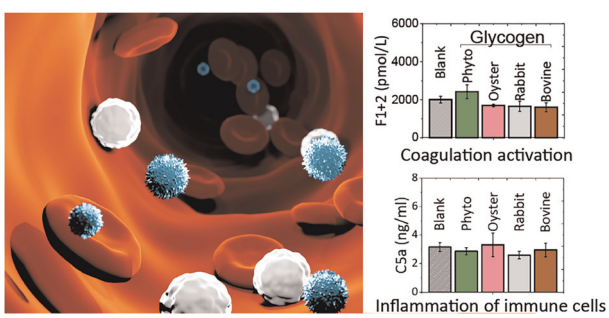
The interaction of glycogen nanoparticles with human blood

Nadiia Davydiuk, Vaidehi Londhe, Manfred F. Maitz, Carsten Werner, Andreas Fery and Quinn A. Besford*



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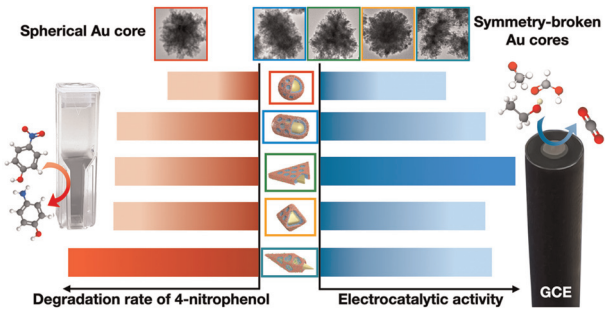

Symmetry breaking enhances the catalytic and electrocatalytic performance of core/shell tetrametallic porous nanoparticles

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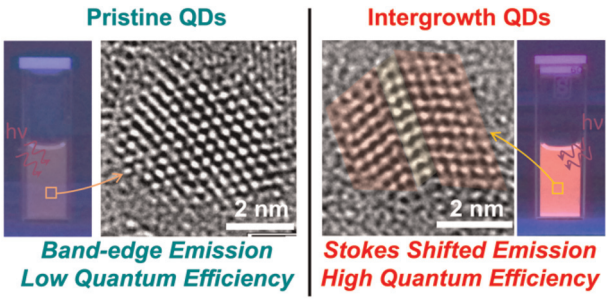

Boosting quantum efficiency and suppressing self-absorption in CdS quantum dots through interface engineering

Shyamashis Das, Biswajit Bhattacharyya, Ashutosh Mohanty, Poulomi Mukherjee, Arpita Mukherjee, Anirban Dutta, Anshu Pandey, Priya Mahadevan,* Ranjani Viswanatha* and D. D. Sarma*

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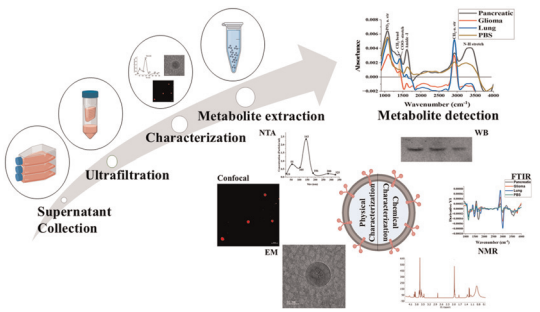

Uncovering metabolic signatures in cancer-derived exosomes: LC-MS/MS and NMR profiling

Nandini Bajaj and Deepika Sharma*

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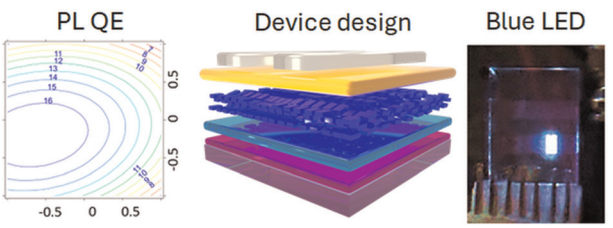

Blue CdSe/CdS core/crown nanoplatelet light-emitting diodes obtained *via* a design-of-experiments approach

Matilde Cirignano, Hossein Roshan, Emanuele Farinini, Alessio Di Giacomo, Sergio Fiorito, Davide Piccinotti, Sirous Khabbazabkenar, Francesco Di Stasio* and Iwan Moreels*

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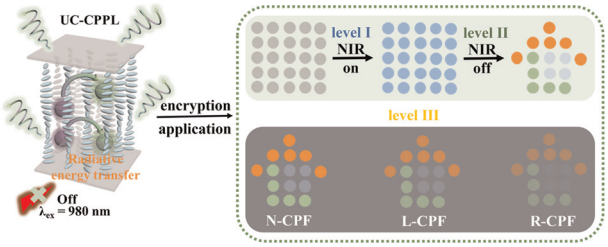
Radiative energy transfer enabling upconverted circularly polarized persistent luminescence for multilevel information encryption

Haolai Mao, Xuefeng Yang, Yonghong Shi, Tonghan Zhao, Yi Zhang, Xue Jin,* Pengfei Duan* and Jin Zhou*



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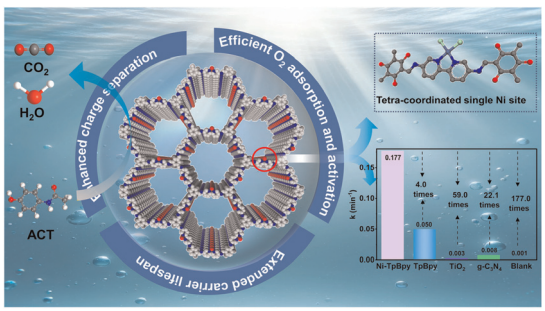
Nickel single atoms anchored on a bipyridine-based covalent organic framework: boosting active sites for photodegradation of acetaminophen

Guijiao Wen, Qianqian Peng, Chen Yuan, Juan He* and Xiandeng Hou*



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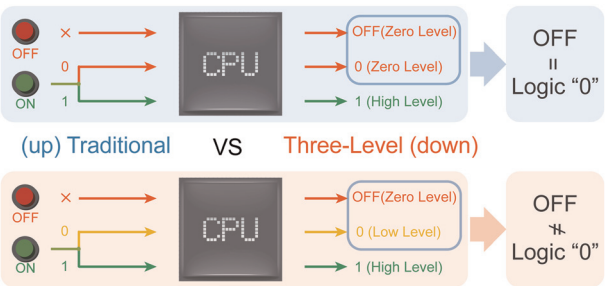
Refined design of a DNA logic gate for implementing a DNA-based three-level circuit

Yuanpeng Zhang, Bei Yan, Xingge Li, Huan Liu, Xiao Liu, Xianjin Xiao,* Zenghui Mao* and Zhihao Ming*



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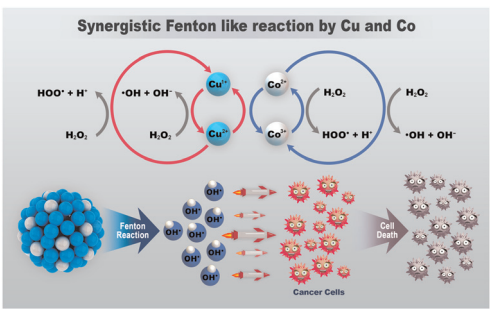
Copper–cobalt peroxide nanoparticles: a biomimetic cascade reaction for enhanced Fenton-like therapy at physiologically relevant pH

Maryam Farrokhnia, Hamed Manoochehri,* Mina Shirkani, Ramón Martínez-Máñez and Sadegh Karimi*



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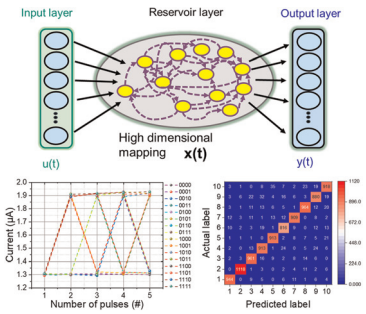

Dynamic $FeO_x/FeWO_x$ nanocomposite memristor for neuromorphic and reservoir computing

Muhammad Ismail, Maria Rasheed, Yongjin Park, Jungwoo Lee, Chandreswar Mahata and Sungjun Kim*

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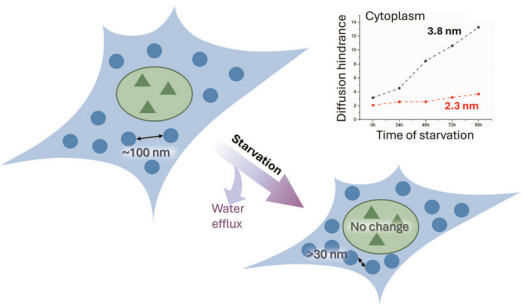

Starvation induces diffusion hindrance at the nanoscale in mammalian cells

Sakshi Sareen, Alicja Zgorzelska, Karina Kwapiszewska* and Robert Hołyst*

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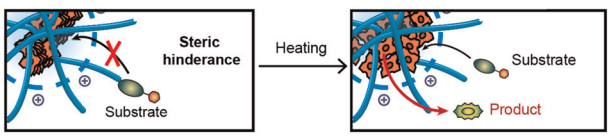

Controlled bioorthogonal catalyst self-assembly and activity using rationally designed polymer scaffolds

Rui Huang, Cristina-Maria Hirschbiegel, David C. Luther, Cheng-Hsuan Li, Ahmed Nabawy, Jungmi Park, Alexander Ribbe, Yisheng Xu and Vincent M. Rotello*

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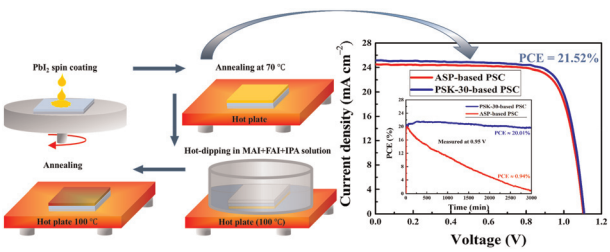

A facile approach for fabricating efficient and stable perovskite solar cells

Sajid Sajid, Salem Alzahmi,* Nouar Tabet, Mohammad Y. Al-Haik, Saleh T. Mahmoud, Yousef Haik, Ahmed Mourtada Elseman and Ihab M. Obaidat*

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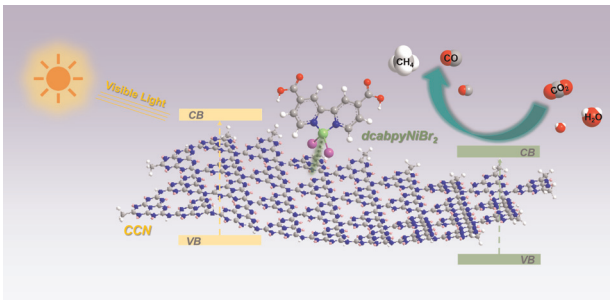
Constructing a nickel complex/crystalline carbon nitride hybrid with a built-in electric field for boosting CO_2 photoreduction

Yanrui Li,* Linda Wang, Bozhan Li, Liangqing Zhang, Xiaolin Zhu and Xiang Gao*



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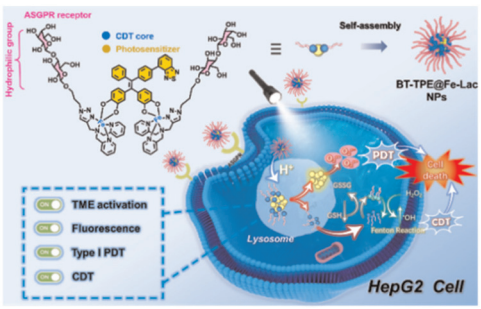
A glycosylated AIE-active Fe(III) photosensitizer activated by the tumor microenvironment for synergistic type I photodynamic and chemodynamic therapy

Gai-Li Feng, Wei Zhou, Jin-ping Qiao, Guang-Jian Liu and Guo-Wen Xing*



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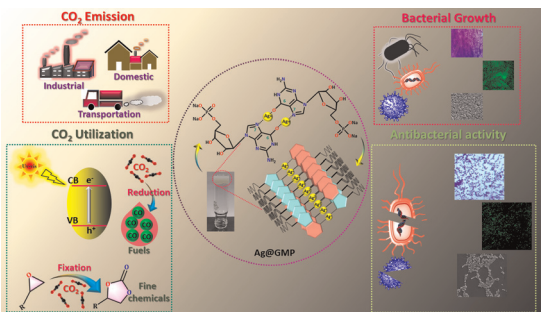
Self-template impregnated silver nanoparticles in coordination polymer gel: photocatalytic CO_2 reduction, CO_2 fixation, and antibacterial activity

Noohul Alam, Sumit Mondal, Niwesh Ojha, Subham Sahoo, Mohammad Tarique Zeyad, Sushant Kumar and Debajit Sarma*



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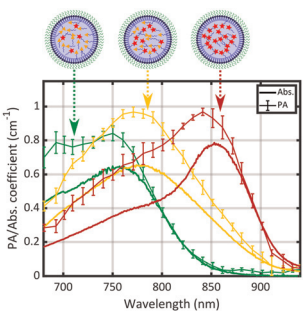
Quantitative photoacoustic spectral transformations in theranostic solid lipid nanoparticles labelled with increasing concentrations of a photoacoustic NIR BODIPY

Clément Linger, Giulia Maccini, Gilles Clavier, Rachel Méallet, Nicolas Tsapis* and Jérôme Gateau*



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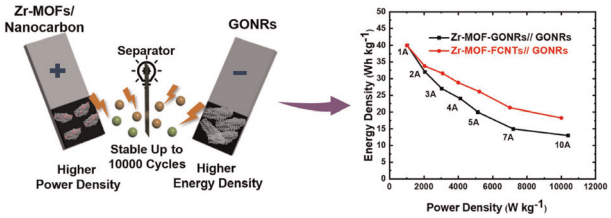

Zr-MOF composites with zipped and unzipped carbon nanotubes for high-performance electrochemical supercapacitors

Asmaa R. Heiba, M. O. Abdel-Salam, Taeho Yoon* and Ehab El Sawy*

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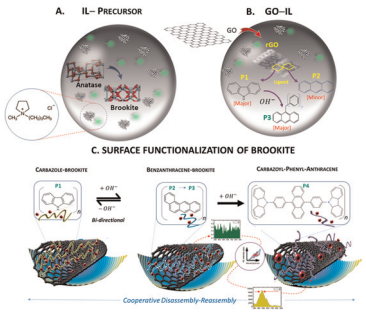

Conduction band photonic trapping *via* band gap reversal of brookite quantum dots using controlled graphitization for tuning a multi-exciton photoswitchable high-performance semiconductor

Sanjiv Sonkaria,* Tae Woo Lee, Aniket Kumar, Soo-Kyung Hwang, Piotr G. Jablonski and Varsha Khare*

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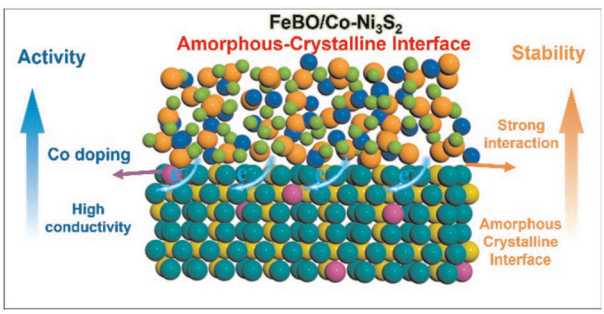

Deep reconstruction of crystalline–amorphous heterojunction electrocatalysts for efficient and stable water and methanol electrolysis

Fang Zheng, Mayur A. Gaikwad, Zhenhua Fang, Suyoung Jang and Jin Hyeok Kim*

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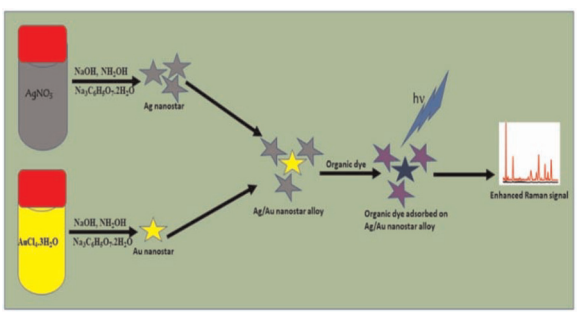

An advanced plasmonic bimetallic nanostar composite for ultra-sensitive SERS detection of crystal violet

Sintayehu Leshe Kitaw, Yohannis Wondosen Ahmed, Andy Candra, Tsung-Yun Wu, Beyadgalem Endawoke Anley, Ying-Yu Chen, Yu-Ting Cheng, Kuan-Ju Chen, Chayaporn Thammaniphit, Chen Chu Hsu, Yi Ting Wu, Mahvash Hira Khan and Hsieh-Chih Tsai*

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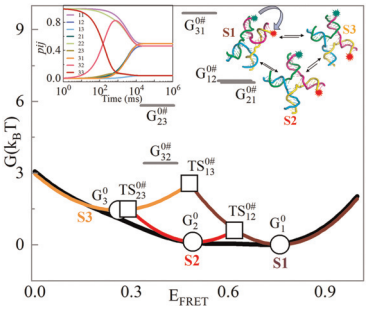
Differential Mg^{2+} deposition on DNA Holliday Junctions dictates the rate and stability of conformational exchange

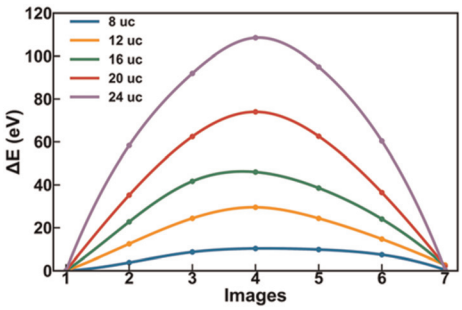
Pratibha Agarwala, Arumay Pal, Milan Kumar Hazra* and Dibyendu K. Sasmal*



533

Quantifying the polar skyrmion motion barrier in an oxide heterostructure

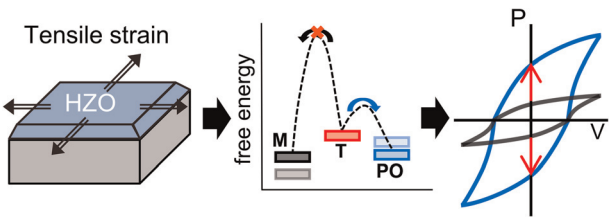
Lizhe Hu, Yuhui Huang, Yongjun Wu* and Zijian Hong*



540

Theoretical understanding of the in-plane tensile strain effects on enhancing the ferroelectric performance of $Hf_{0.5}Zr_{0.5}O_2$ and ZrO_2 thin films

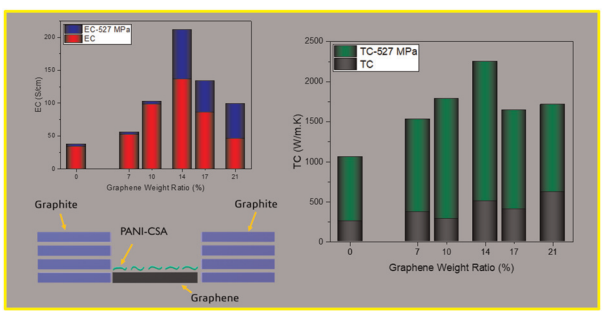
Kun Hee Ye, Taeyoung Jeong, Seungjae Yoon, Dohyun Kim, Cheol Seong Hwang* and Jung-Hae Choi*



552

Exploring graphene's impact on graphite/PANI matrix composites: high-pressure fabrication and enhanced thermal-electrical properties

Murat Ozlek, Merve Sehnaz Akbulut and Engin Burgaz*



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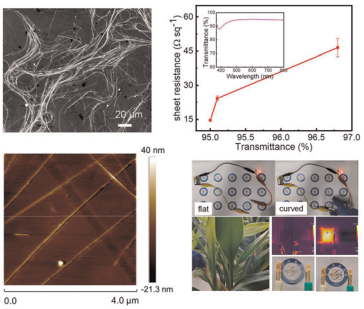

Synergistic role of Cl^- and Br^- ions in growth control and mechanistic insights of high aspect ratio silver nanowires for flexible transparent conductive films

Jia-Lei Xu, Rui-Dong Shi, Hai-ping Zhou, Guo-Tao Xiang, Zi-Dong Zhou, Yong-Da Hu* and Jin-Ju Chen*

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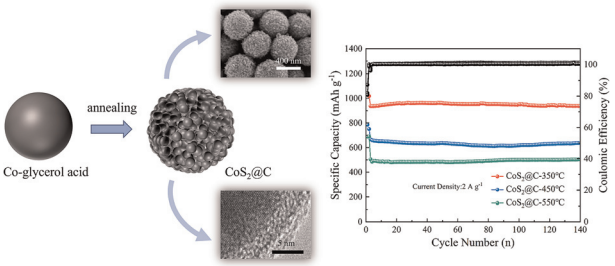

Facile synthesis of *in situ* carbon-coated CoS_2 micro/nano-spheres as high-performance anode materials for sodium-ion batteries

Lingling Chen, Pengfei Wang, Chen Bao, Yanyan Li, Bo Fan, Gaofeng Li* and Dianbo Ruan

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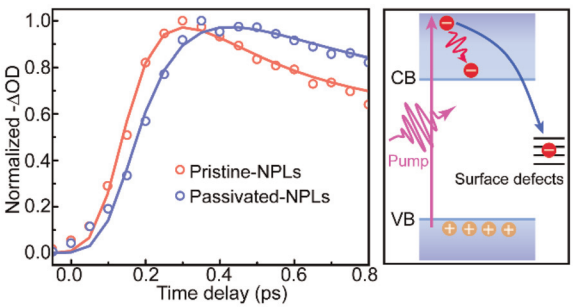

Modulating hot carrier relaxation and trapping dynamics in lead halide perovskite nanoplatelets by surface passivation

Yanshen Zhu, Shida Luo, Yuting Zhang, Yanping Liu, Yulu He, Tianfeng Li, Zhen Chi* and Lijun Guo*

EXPRESSIONS OF CONCERN

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Expression of concern: Anti-aggregation effect of carbon quantum dots on diabetogenic and beta-cell cytotoxic amylin and beta amyloid heterocomplexes

Anna Voronova, Alexandre Barras, Valérie Plaisance, Valerie Pawlowski, Rabah Boukherroub, Amar Abderrahmani* and Sabine Szunerits*

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EXPRESSIONS OF CONCERN

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Expression of concern: Iron oxide magnetic nanoparticles with versatile surface functions based on dopamine anchors

Mykola Mazur, Alexandre Barras, Victor Kuncser, Andrei Galatanu, Vladimir Zaitzev, Kostiantyn V. Turcheniuk, Patrice Woisel, Joel Lyskawa, William Laure, Aloysius Siriwardena, Rabah Boukherroub and Sabine Szunerits*

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Expression of concern: Heat-based transdermal delivery of a ramipril loaded cream for treating hypertension

Anna Voronova, Quentin Pagneux, Raphael Decoin, Eloise Woitrain, Laura Butruille, Alexandre Barras, Catherine Foulon, Marie Lecoeur, Diego Jaramillo, José Rumipamba, Sorin Melinte, Amar Abderrahmani, David Montaigne, Rabah Boukherroub and Sabine Szunerits*

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Expression of concern: Near-infrared light activatable hydrogels for metformin delivery

Li Chengnan, Quentin Pagneux, Anna Voronova, Alexandre Barras, Amar Abderrahmani, Valérie Plaisance, Valerie Pawlowski, Nathalie Hennuyer, Bart Staels, Lea Rosselle, Nadia Skandrani, Musen Li, Rabah Boukherroub* and Sabine Szunerits*

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