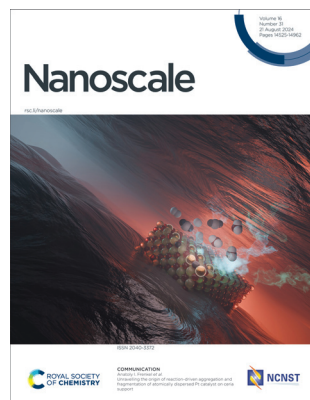


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ISSN 2040-3372 CODEN NANOHL 16(31) 14525–14962 (2024)



Cover

See Anatoly I. Frenkel *et al.*, pp. 14716–14721.

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PROFILE

14537

Nanoscale profiles: contributors to the 2024 Emerging Investigators collection

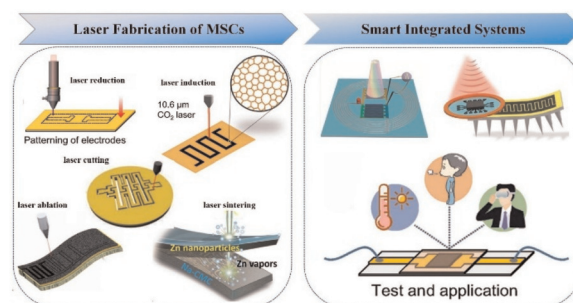


REVIEWS

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Laser-machined micro-supercapacitors: from microstructure engineering to smart integrated systems

Hongpeng Li,* Junhao Luo, Shumei Ding and Jiabao Ding



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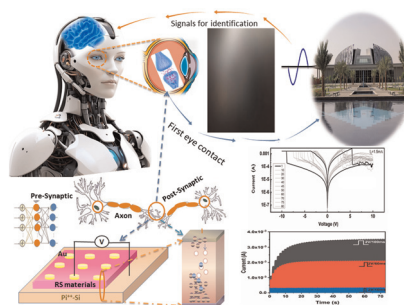
Fundamental questions
Elemental answers

REVIEWS

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Unveiling cutting-edge developments: architectures and nanostructured materials for application in optoelectronic artificial synapses

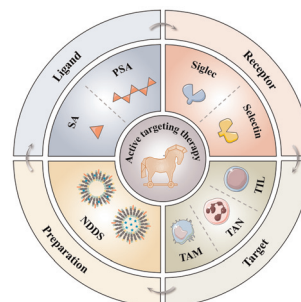
Rajwali Khan,* Naveed Ur Rahman, Muhammad Faisal Hayat, Djamel Ghernaout, Alsamani A. M. Salih, Ghulam Abbas Ashraf, Abdus Samad, Muhammad Adil Mahmood, Nasir Rahman, Mohammad Sohail, Shahid Iqbal, Sherzod Abdullaev and Alamzeb Khan



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Recent advances in sialic acid-based active targeting chemoimmunotherapy promoting tumor shedding: a systematic review

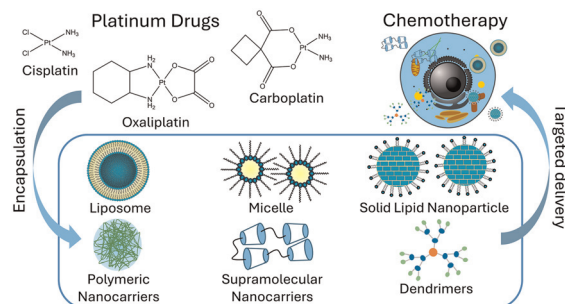
Jingyi Zhao, Kunfeng Zhang, Dezhi Sui, Shuo Wang, Yantong Li, Xueying Tang, Xinrong Liu, Yanzhi Song* and Yihui Deng*



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Platinum-based chemotherapy: trends in organic nanodelivery systems

João A. V. Santos, Daniela Silva, Maria Paula M. Marques* and Luís A. E. Batista de Carvalho

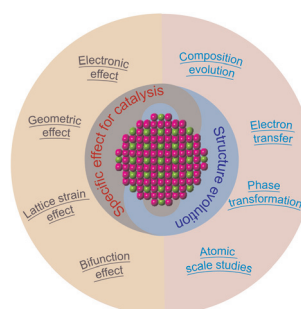


MINIREVIEWS

14687

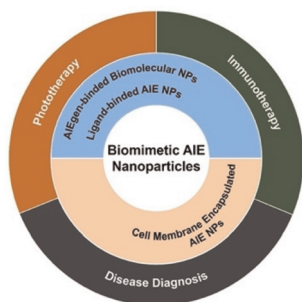
Structure evolution and specific effects for the catalysis of atomically ordered intermetallic compounds

Lei Wang,* Zequan Ma, Jia Xue, Yilin Dong, Lin-Wei Chen,* Yu Gu and Hui Shi*



MINIREVIEWS

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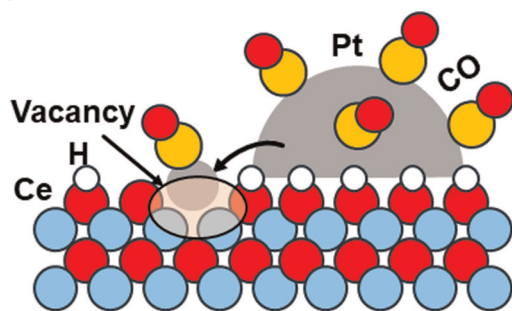


Advances in biomimetic AIE nanoparticles for diagnosis and phototherapy

Joe H. C. Chau, Michelle M. S. Lee, Eric Y. Yu, Ryan T. K. Kwok, Jacky W. Y. Lam,* Jianwei Sun and Ben Zhong Tang*

COMMUNICATIONS

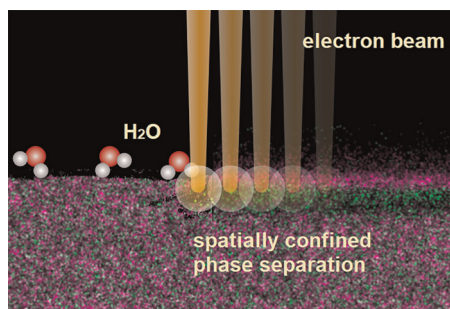
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Unravelling the origin of reaction-driven aggregation and fragmentation of atomically dispersed Pt catalyst on ceria support

Haodong Wang, Hyuk Choi, Ryuichi Shimogawa, Yuanyuan Li, Lihua Zhang, Hyun You Kim and Anatoly I. Frenkel*

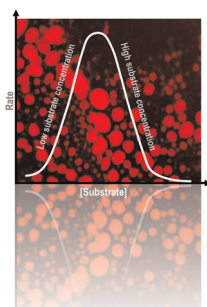
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Nanoscale, surface-confined phase separation by electron beam induced oxidation

Sven Barth,* Fabrizio Porrati, Daniel Knez, Felix Jungwirth, Nicolas P. Jochmann, Michael Huth, Robert Winkler, Harald Plank, Isabel Gracia and Carles Cané

14730



Substrate-induced phase transition within liquid condensates reverses the catalytic activity of nanoparticles

S. M. Rose, Silky Bedi, Sabyasachi Rakshit* and Sharmistha Sinha*

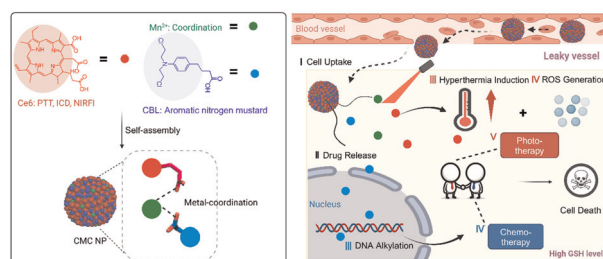


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A metal-coordination stabilized small-molecule nanomedicine with high drug-loading capacity and synergistic photochemotherapy for cancer treatment

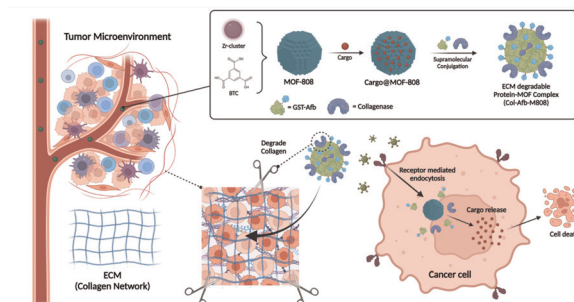
Han Chen, Haijing Qu, Beike Lu, Yuqing Pan, Jiaojiao Yang, Zhiran Duan, Jie Wu, Yanjun Wang, Chao Wang, Rong Hu* and Xiangdong Xue*



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A multifunctional protein pre-coated metal-organic framework for targeted delivery with deep tissue penetration

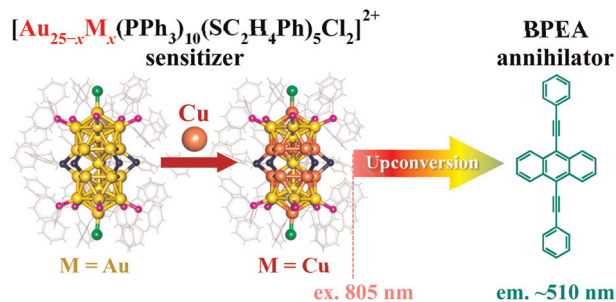
Jun Yong Oh, Min-Seok Seu, Ayan Kumar Barui, Hae Won Ok, Dohyun Kim, Eunshil Choi, Junmo Seong, Myoung Soo Lah and Ja-Hyoung Ryu*



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Tailoring sensitization properties and improving near-infrared photon upconversion performance through alloying in superatomic molecular Au₂₅ nanoclusters

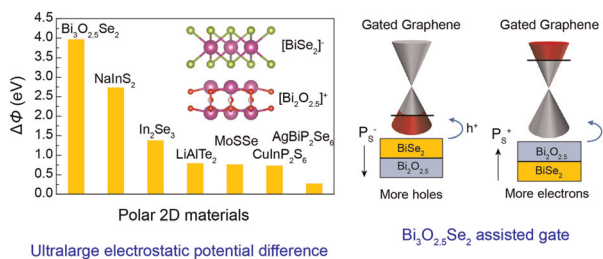
Masaaki Mitsui,* Yuki Miyoshi and Daichi Arima



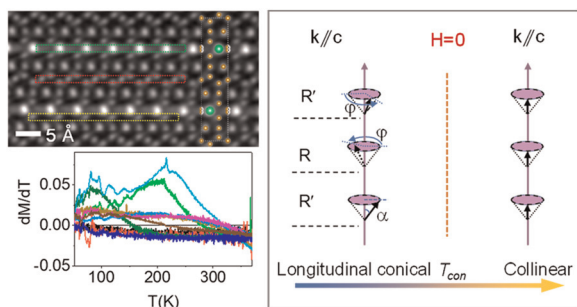
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Bi₃O_{2.5}Se₂: a two-dimensional high-mobility polar semiconductor with large interlayer and interfacial charge transfer

Xinyue Dong, Yameng Hou, Chaoyue Deng, Jinxiong Wu* and Huixia Fu*



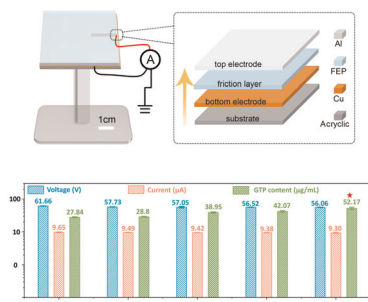
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Microstructure parameter-dependent non-collinear magnetic structures in scandium-doped M-type hexaferrite nanocrystals

Qiankun Qin, Afei Ding, W. L. Qubie, Pushpendra Kumar, Shixin Hu, Tianyang Yao and Junli Zhang*

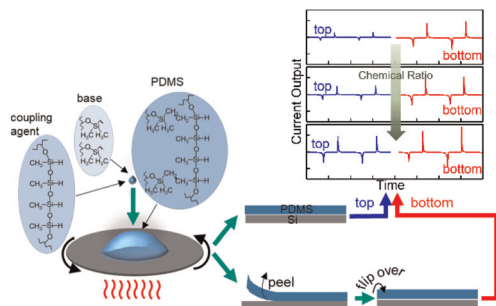
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A self-powered droplet sensor based on a triboelectric nanogenerator toward the concentration of green tea polyphenols

Guochen Lin, Chang Su, Chengmin Bao, Maoyi Zhang, Chuanbo Li* and Ya Yang*

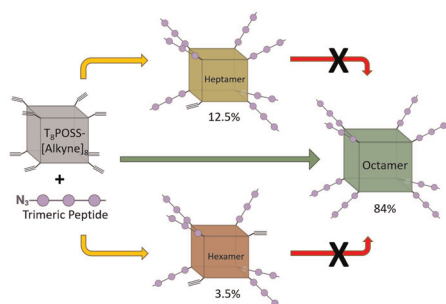
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Tailoring morphological and chemical contributions of nanoscale charge transfer for enhanced triboelectric nanogenerators

Jong Hun Kim, Da Woon Jin, Jae Hyeon Jeon, Dheeraj Kumar, HongYeon Yoon, Hunyoung Cho, Hyotcherl Ihee, Jeong Young Park* and Jong Hoon Jung*

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"Clicking" trimeric peptides onto hybrid T₈POSS nanocages and identifying synthesis limitations

Lewis R. Anderson, Ann P. Hunter, Matthew J. Kershaw, Sergey Y. Bylikin, James Bowen, Peter G. Taylor, Martin A. Birchall and Nazia Mehrban*

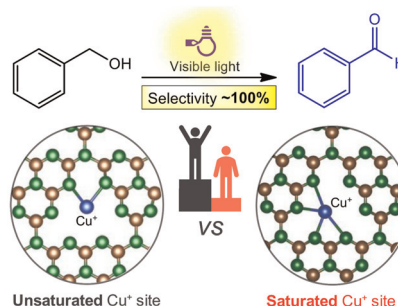


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Atomistic understanding of enhanced selectivity in photocatalytic oxidation of benzyl alcohol to benzaldehyde using graphitic carbon nitride loaded with single copper atoms

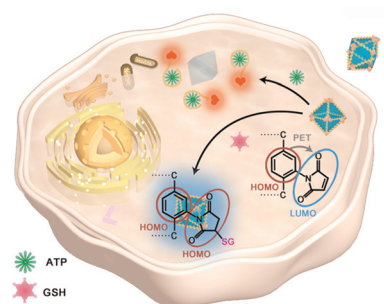
Hanggara Sudrajat,* Sasfan Arman Wella, Jakkapon Phanthuwongpakdee, Dmytro Lisovytskiy, Kamil Sobczak and Juan Carlos Colmenares*



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Synthesis of a metal–organic framework Cu–Mi–UiO–66-based fluorescent nanoprobe for the simultaneous sensing and intracellular imaging of GSH and ATP

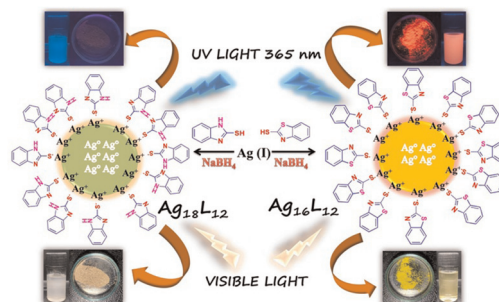
Yun Liu, Shuqi Xia, Meng Xiao, Mo Yang, Mengsu Yang and Changqing Yi*



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Novel 2-mercaptobenzothiazole and 2-mercaptobenzimidazole-derived Ag₁₆ and Ag₁₈ nanoclusters: synthesis and optical properties

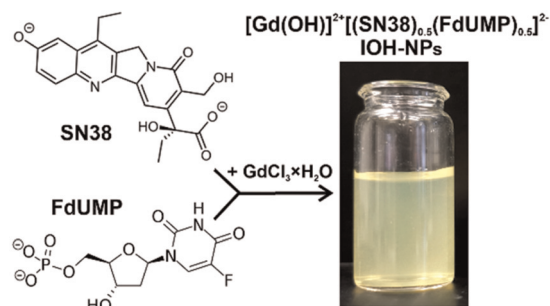
Bedanta Borah, Rohan Sharma, Pankaz K. Sharma* and Apurba Kr. Barman*



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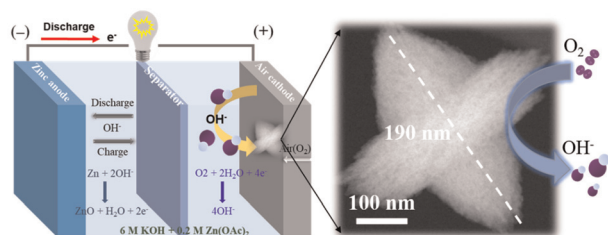
High-load nanoparticles with a chemotherapeutic SN-38/FdUMP drug cocktail

Kristina Sabljo, Myrto Ischyropoulou, Joanna Napp, Frauke Alves and Claus Feldmann*



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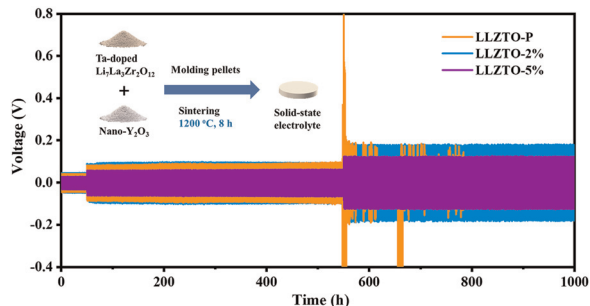
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A seed-like structured Mo@ZrS₂ catalyst on graphene nanosheets for boosting the performance of rechargeable Zn–air batteries

Ramasamy Santhosh Kumar, Dilmurod Sayfiddinov, S. Tamilarasi and Dong Jin Yoo*

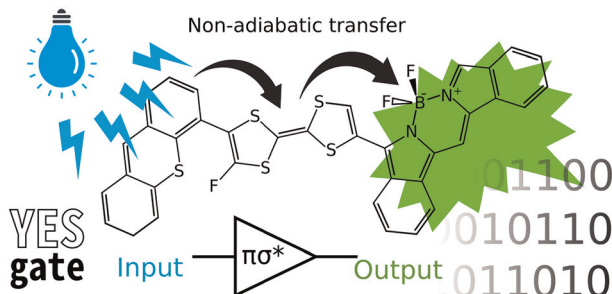
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Fusing Ta-doped Li₇La₃Zr₂O₁₂ grains using nanoscale Y₂O₃ sintering aids for high-performance solid-state lithium batteries

Hongyi Zhang, Yunfan Wu, Jie Zhu, Xujia Xie, Zixi Liu, Zewenhui Zhang, Yishu Ma, Ting Huang, Laisen Wang, Jie Lin,* Qingshui Xie* and Dong-Liang Peng*

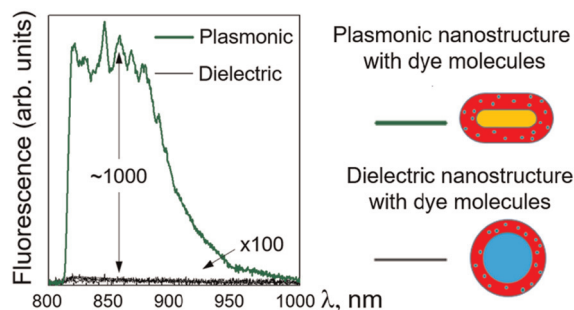
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Using non-adiabatic excitation transfer for signal transmission between molecular logic gates

A. I. Martynov,* A. S. Belov and V. K. Nevolin

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Quantum engineering of the radiative properties of a nanoscale mesoscopic system

I. V. Doronin, A. A. Zyablovsky, E. S. Andrianov, A. S. Kalmykov, A. S. Gritchenko, B. N. Khlebtsov, S.-P. Wang, Bin Kang, Victor I. Balykin and Pavel N. Melentiev*

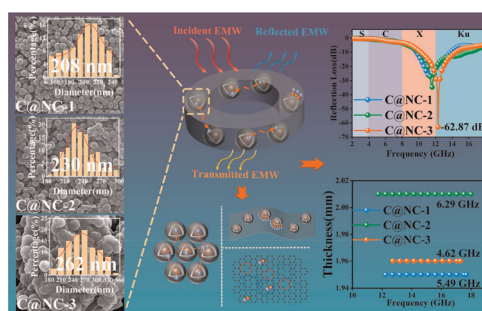


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N-doped carbon layer clad carbon sphere for broadband and boosted microwave attenuation capacity

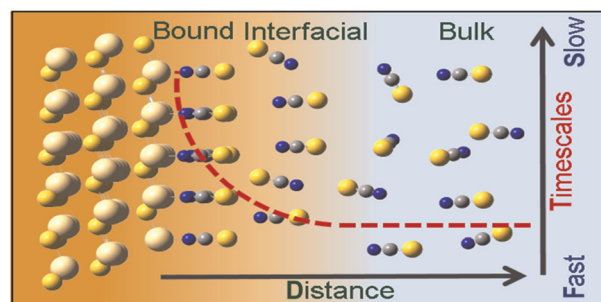
Yuke Zheng, Yunliang Dai, Yiwen Fu* and Xiaojuan Zhang*



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Probing surface interactions in CdSe quantum dots with thiocyanate ligands

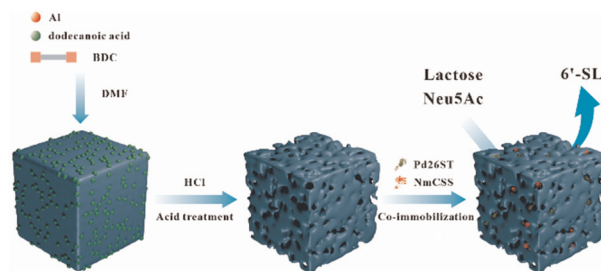
Samadhan H. Deshmukh, Sushma Yadav, Tubai Chowdhury, Akhil Pathania, Sameer Sapra* and Sayan Bagchi*



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Co-immobilization of a bi-enzymatic cascade into hierarchically porous MIL-53 for efficient 6'-sialyllactose production

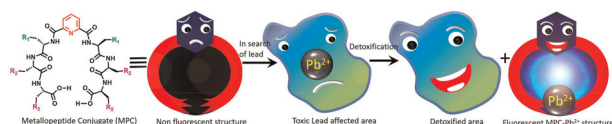
Xinlv Peng, Caixia Pei, Eika W. Qian, Yuguang Du* and Jian-Jun Li*



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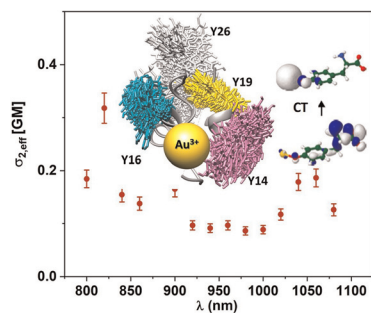
Metallopeptide nanoreservoirs for concurrent imaging and detoxification of lead (Pb) from human retinal pigment epithelial (hRPE1) cells

Aanand Kautu, Shruti Sharma, Ramesh Singh, Saurabh Singh Negi, Narendra Singh, Narayan Swain, Vikas Kumar, Nikunj Kumar, Puneet Gupta*, Dhiraj Bhatia* and Khashti Ballabh Joshi*



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One- and two-photon brightness of proteins interacting with gold. A closer look at gold–insulin conjugates

Dipankar Bain, Hao Yuan, Anna Pniakowska, Agata Hajda, Charlène Bouanchaud, Fabien Chiro, Clothilde Comby-Zerbino, Virginie Gueguen-Chaignon, Vlasta Bonačić-Koutecký, Joanna Olesiak-Banska, Željka Sanader Maršić* and Rodolphe Antoine*

CORRECTION

14959

Correction: Towards control of excitonic coupling in DNA-templated Cy5 aggregates: the principal role of chemical substituent hydrophobicity and steric interactions

Sebastián A. Díaz,* Gissela Pascual, Lance K. Patten, Simon K. Roy, Adam Meares, Matthew Chiriboga, Kimihiro Susumu, William B. Knowlton, Paul D. Cunningham, Divita Mathur, Bernard Yurke, Igor L. Medintz, Jeunghoon Lee* and Joseph S. Melinger*

