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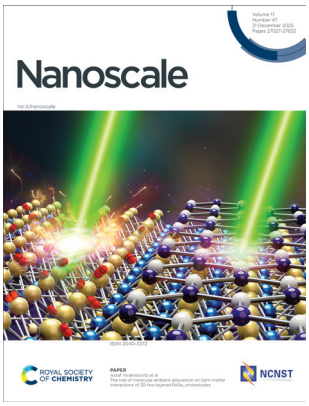

Cover
See Assaf Ya'akobovitz *et al.*, pp. 27216–27224.

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Inside cover
See Fangzhou Li *et al.*, pp. 27042–27065.

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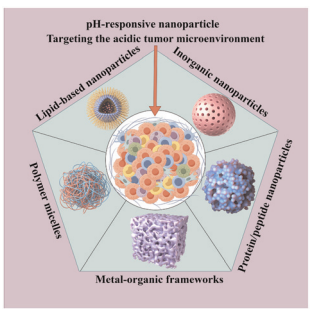
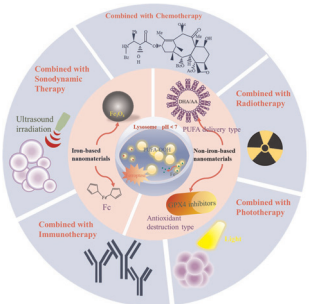
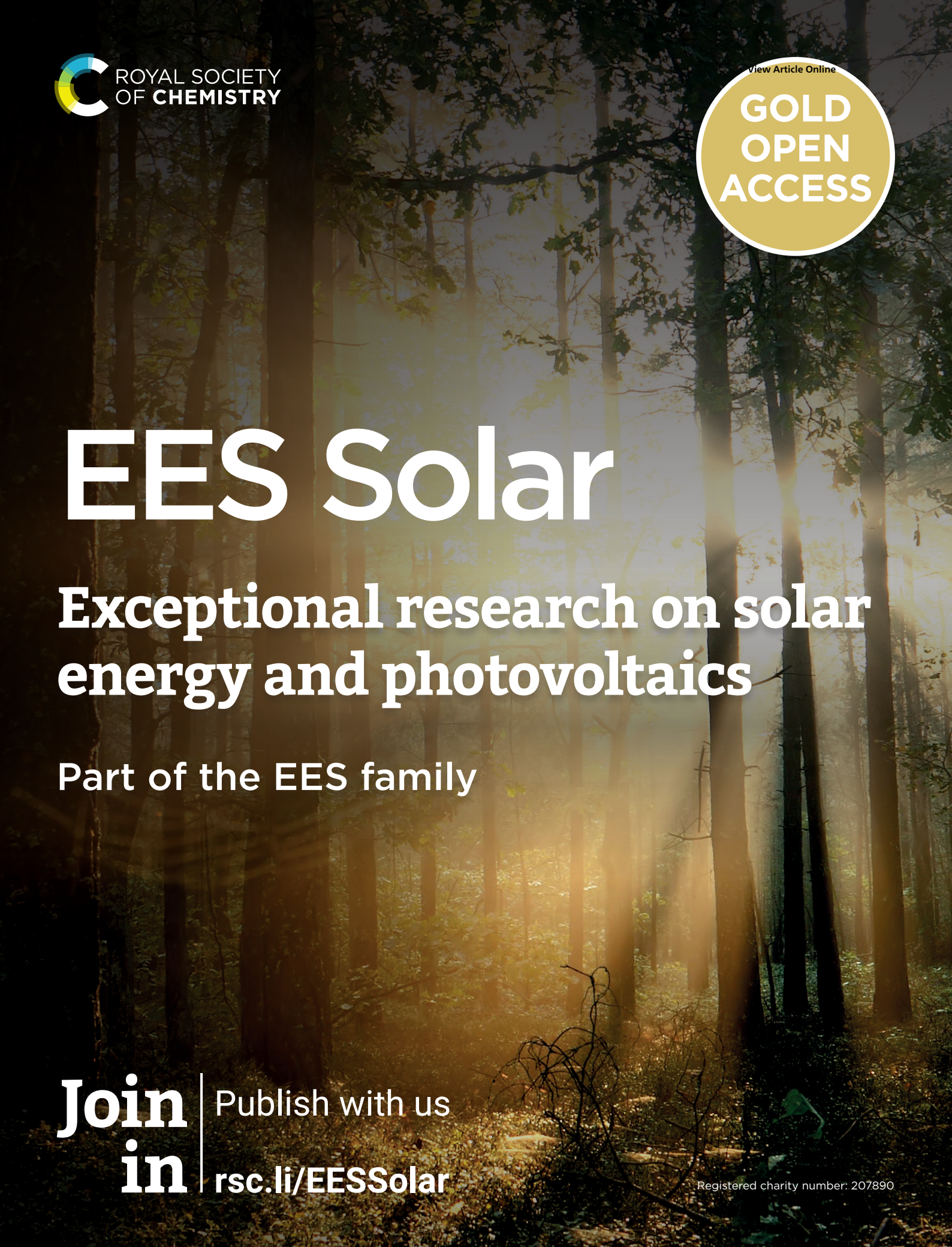
The nanomaterial components were created *via* Blender Foundation (www.blender.org).

REVIEWS



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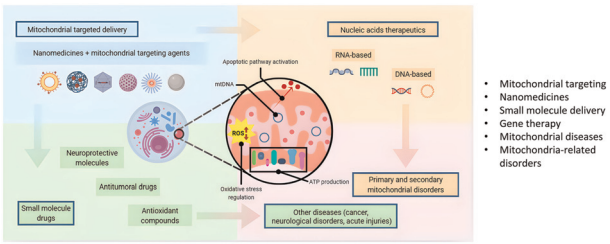

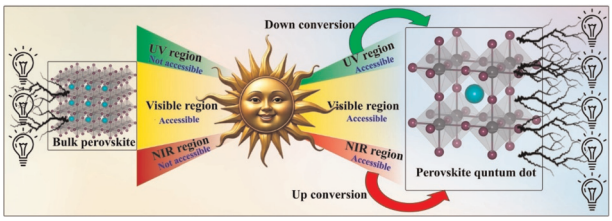

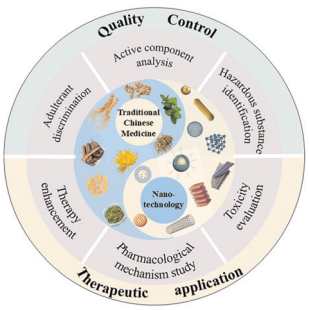

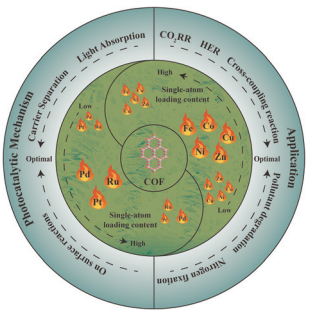

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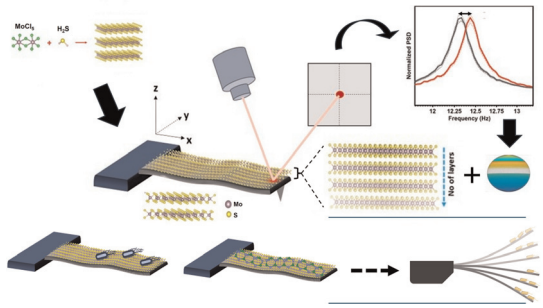

Two dimensional-material-coated microcantilevers for enhanced mass sensing and material characterization

Gourav Bhattacharya, Indrianita Lionadi, Stuart McMichael, Mike P. C. Taverne, James McLaughlin, Pilar Fernandez-Ibanez, Chung-Che Huang,* Ying-Lung Daniel Ho* and Amir Farokh Payam*

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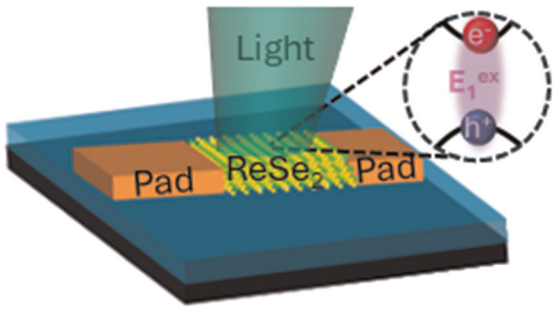
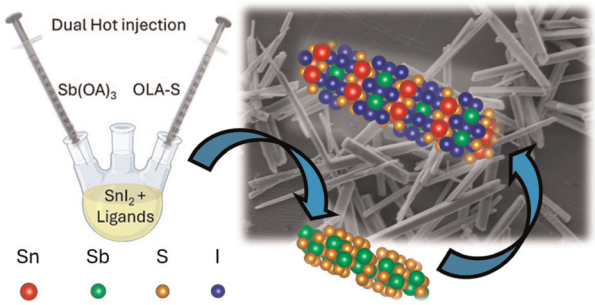


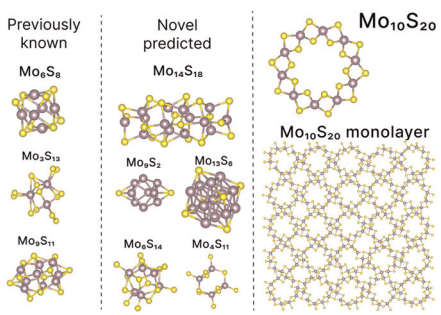
The role of molecular ambient adsorption on light–matter interactions of 2D few-layered $ReSe_2$ photodiodes

Nitzan Cohen, Yarden Mazal Jahn, Nathan Samuel Shultzman and Assaf Ya'akobovitz*



Controlled colloidal synthesis of anisotropic mixed-metal chalcohalides: insights into morphology and phase evolution

Davide Pratolongo, Ankita Bora, Suvodeep Sen, Niraj Nitish Patil, Stefano Alberti, Manoj Palabathuni, Federico Locardi and Shalini Singh*



Computational roadmap of stable Mo–S nanoclusters: atomic structures and magic compositions

Georgii Bychkov,* Konstantin Kravtsov and Ivan Kruglov*

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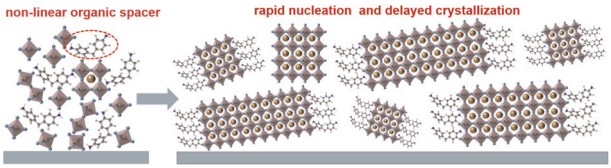

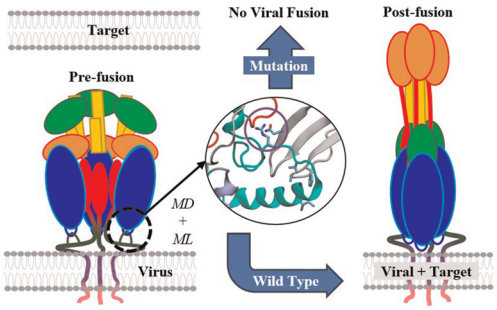

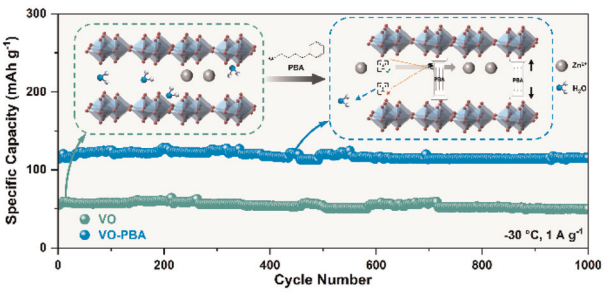

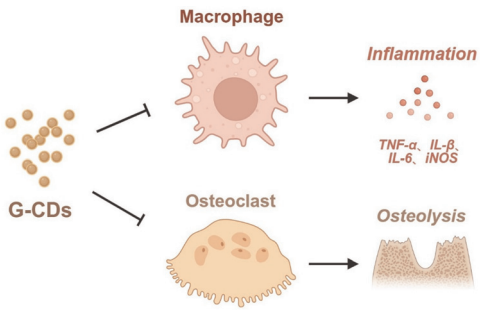

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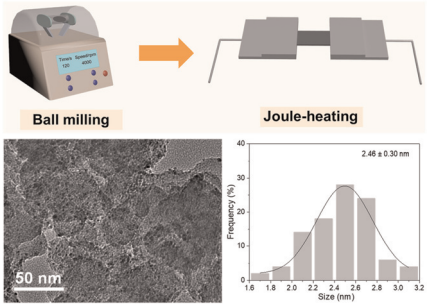

Joule-heating synthesis of Pd/C catalysts with excellent electrocatalytic performance

Shaonan Tian, Zhenya Hu, Mengyuan Ma, Hui Liu* and Jun Yang*

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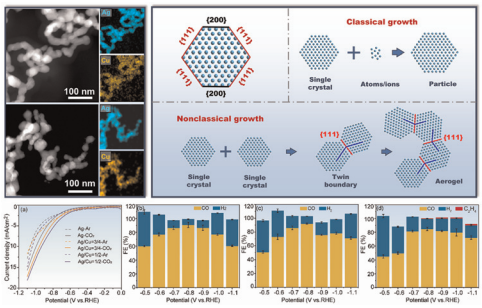

Tuning the configuration of Ag–Cu aerogels for electrocatalytic applications

Dingri Zhang, Jiaxuan Chen, Jiahao Duan, Ziang Yang, Dan Leng, Qiongzhi Zhou, Jian Shen,* Miao Song* and Kechao Zhou*

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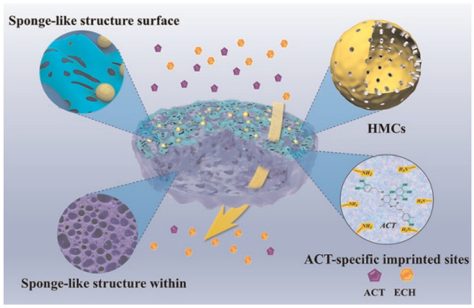

Constructing sponge-like structured molecularly imprinted composite membranes for acteoside separation

Yuchen Ma, Chen Chen, Qingxin Wu, Guoqing Yang and Haojie Li*

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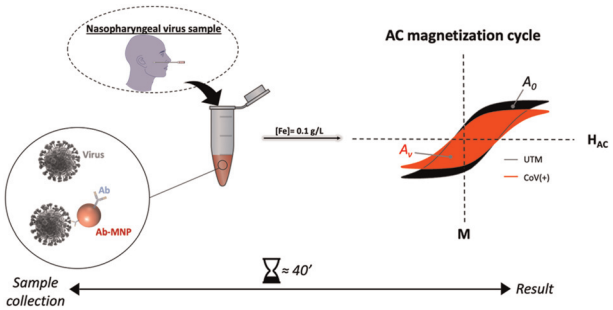

Magnetic nanoparticles as transducers for quick and direct virus detection in clinical samples

Idoia Mikelez-Alonso, Javier Sánchez-Martínez, Carlos Martínez-Boubeta, Emilio José Artés-Ibáñez, Georgi K. Tsirov, Iván Sanz-Muñoz, Aitziber L. Cortajarena and Francisco J. Terán*

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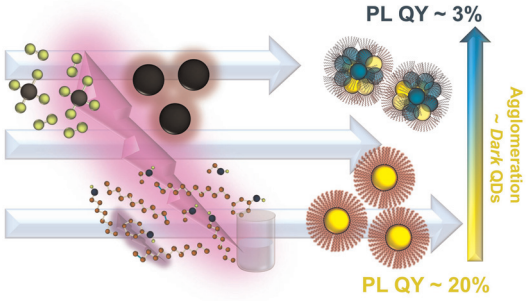

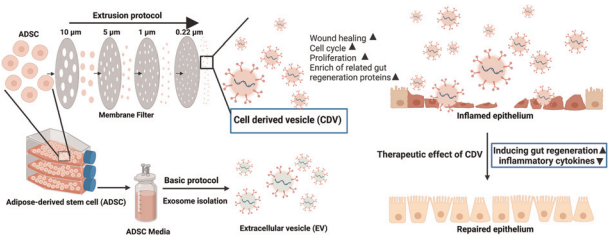

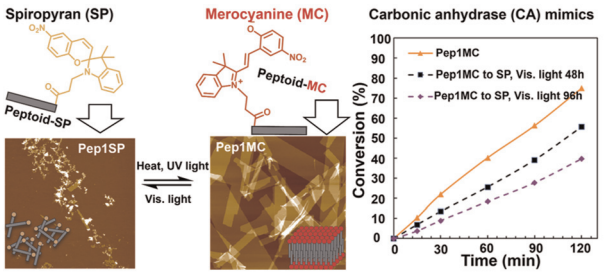

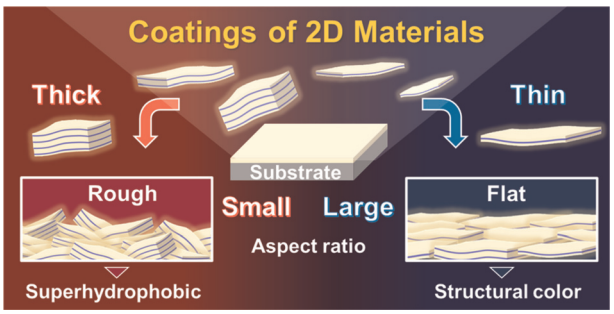

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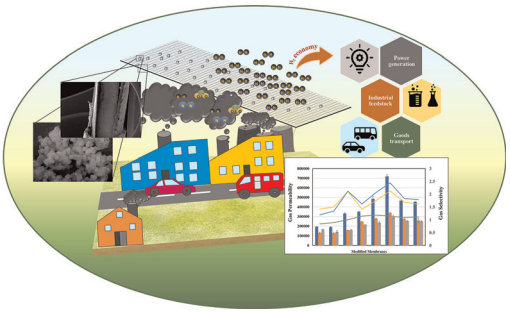

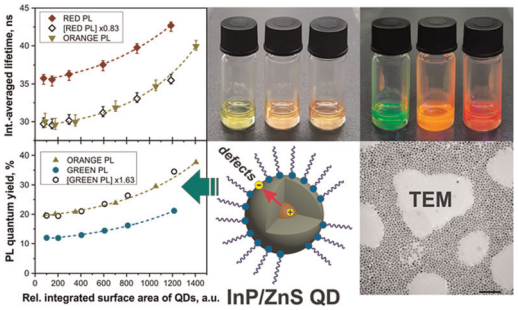

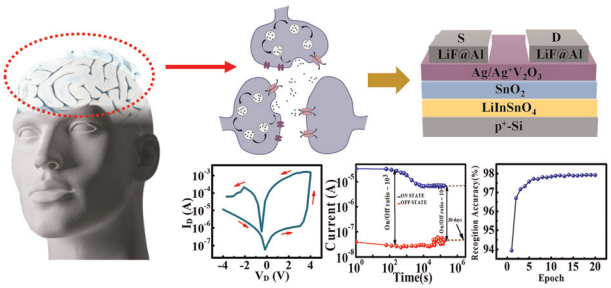

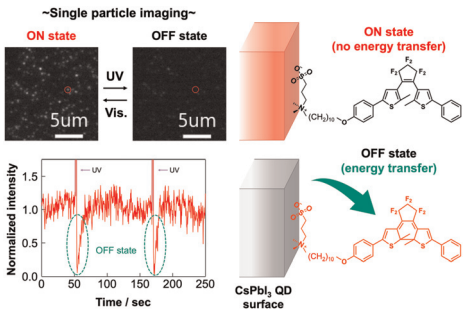

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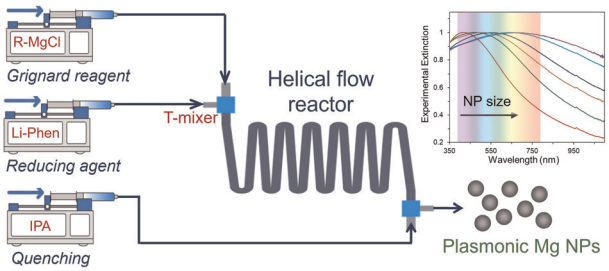
Continuous flow synthesis of plasmonic magnesium nanoparticles with tunable optical properties from grignard precursors

Vladimir Lomonosov, Andrey Ten, Bruno Pinho, Zeki Semih Pehlivan, Emilie Ringe and Laura Torrente-Murciano*



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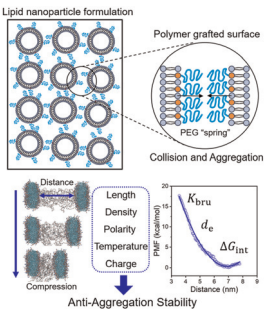
Unraveling the role of PEGylation in the anti-aggregation stability of lipid nanoparticles

Shao-Jun Feng, Chun-Huan Liu, Xin-Ming Xia, Bo-Yang Yu, Guang-Wen Chu, Hui Li* and Jian-Feng Chen*



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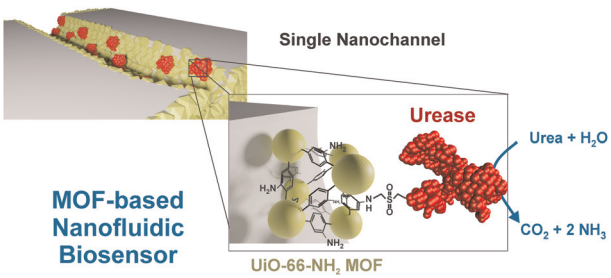
Expanding the synergy between MOFs and solid-state nanochannels: robust anchoring of enzymes for iontronic biosensing

Angel L. Huamani, Gregorio Laucirica, Maria Eugenia Toimil-Molares, Michael F. Wagner, Matias Rafti, Waldemar Marmisollé* and Omar Azzaroni*



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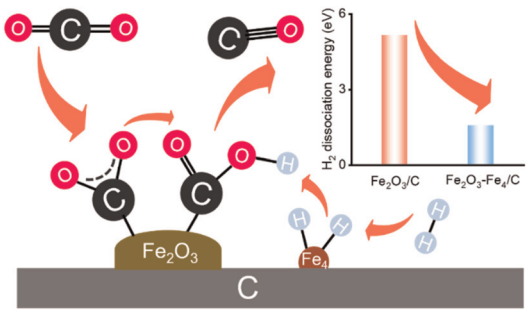
Integration of H_2-activating metal clusters with metal oxides for boosting the low-temperature reverse water–gas shift reaction

Shenglong Wu, Lixiong Du, Yajing Wang,* Kui Shen, Liyu Chen* and Yingwei Li*



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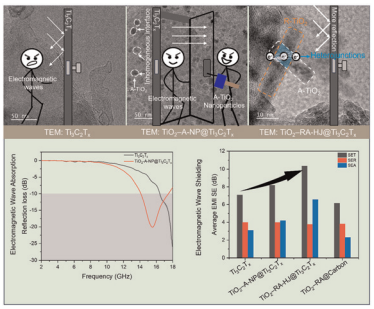

High-temperature annealing enables the dielectric modulation of MXene for enhanced electromagnetic wave absorption and shielding

Qingtao Lv, Lei Ding, Yawen Liu, Zhiyong Su, Teng Zhang, Yudan Wang, Tao Wu,* Xiaolong Wang* and Chunhong Zhang*

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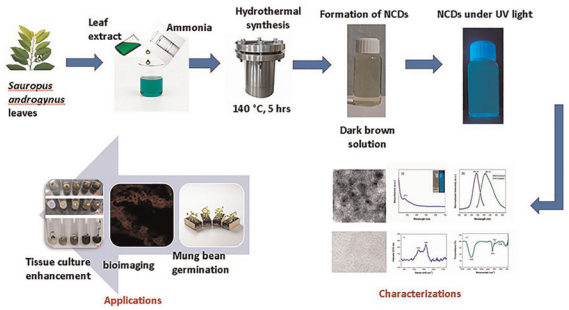

Eco-friendly nitrogen-doped carbon dots from *Sauropus androgynus* leaf extract: a sustainable tool for mung bean germination, bioimaging and tissue culture enhancement

Bitty Joseph, C. Annmary, T. R. Anju, N. J. Simi, S. Bharathi Bernadsha and V. V. Ison*

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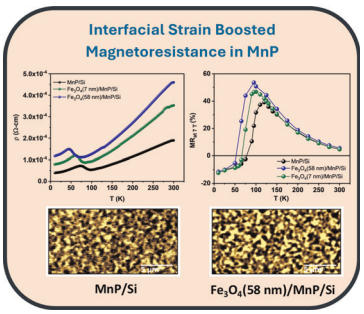

Boosting magnetoresistance in manganese phosphide helimagnets through iron oxide interface strain engineering

Nivarthana W. Y. A. Y. Mudiyanselage,* Derick DeTellem, Yasinthara M. Wadumesthri, Amit Chanda, Anh Tuan Duong, Emmanuel Olawale, Humberto Rodriguez Gutierrez, Xiaomei Jiang, Sarath Witanachchi and Manh-Huong Phan*

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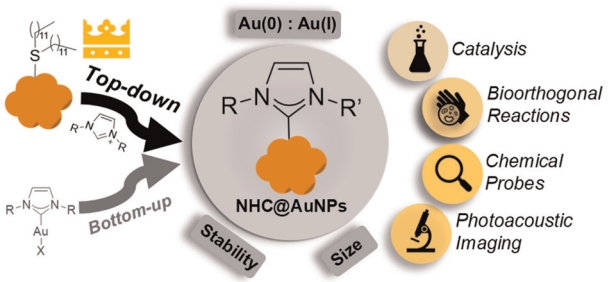

Water-soluble N-heterocyclic carbene stabilized gold nanoparticles by top-down synthesis: performance in catalysis and photoacoustic imaging

Sophie R. Thomas,* Ana Luiza de Andrade Querino, Guillermo Moreno-Alcántar, Thanh Tran, Tamara Rodríguez-Prieto, Simon Qian, Davide Di Giuseppe, Pia Anzenhofer, Vasilis Ntziachristos, Heveline Silva, Veronika Somoza, Roland A. Fischer and Angela Casini*

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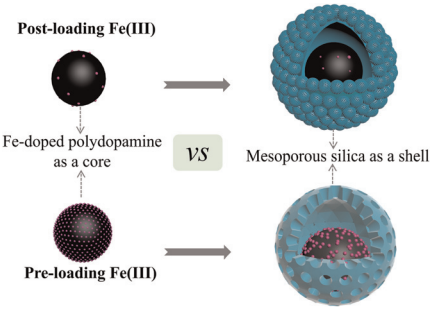
Asymmetric yolk@shell structured Fe-doped polydopamine or carbon@mesoporous silica composite particles

Baorui Liang, Ruonan Ouyang, Wenchao Li, Haodong Guo, Junjie Liu and Xin Du*



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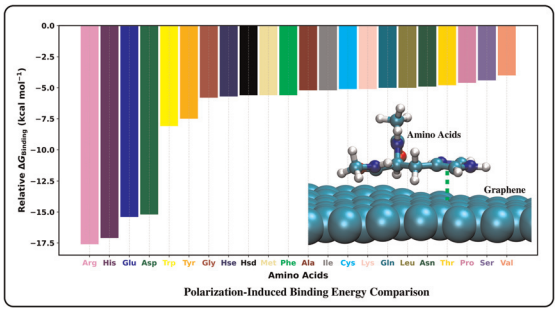
Unravelling amino acid–graphene interactions: insights from polarizable force field simulations

Sahil Soni, Ripan Halder, Mayank Luniwal and Sairam S. Mallajosyula*



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Enhanced magnetic and optical properties of $Y_3Fe_5O_{12}$ (YIG) films with Au nanoinclusions

Lizabeth Quigley, Katrina Evancho, Claire A. Mihalko, Yizhi Zhang, Chang Liu, Max Chhabra, Bharat Giri, Jialong Huang, Abhijeet Choudhury, Jeremy Gan, Zhengliang Lin, Xiaoshan Xu, Ping Lu, Raktim Sarma, Aleem Siddiqui and Haiyan Wang*