

# Nanoscale Horizons

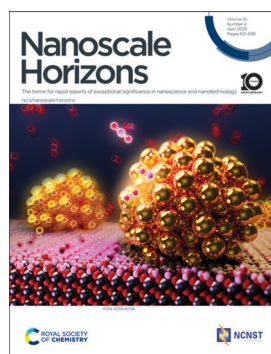
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### Cover

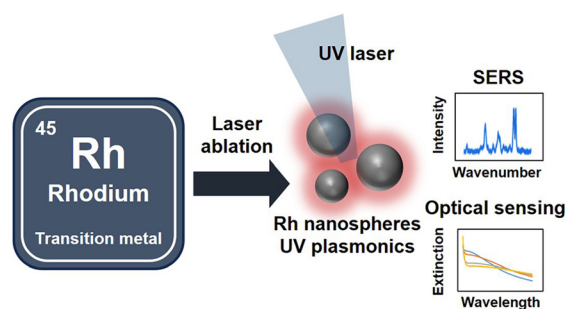
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## EDITORIALS

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### Rounding up Rh nanoparticles for ultraviolet plasmonic sensing

Yikai Xu



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### Nanoscale Horizons Emerging Investigator Series: Dr Jovana Milić, University of Fribourg, Switzerland



# Environmental Science: Atmospheres

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Fundamental questions  
Elemental answers

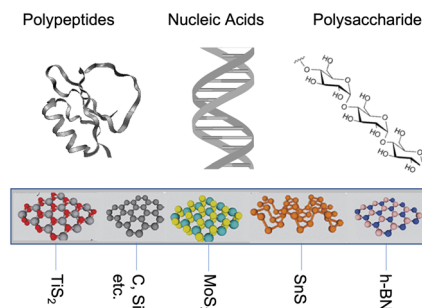


## REVIEWS

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## Biocomposites of 2D layered materials

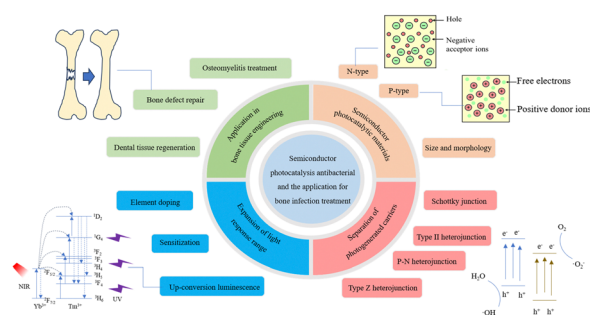
Mert Vural and Melik C. Demirel\*



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## Semiconductor photocatalytic antibacterial materials and their application for bone infection treatment

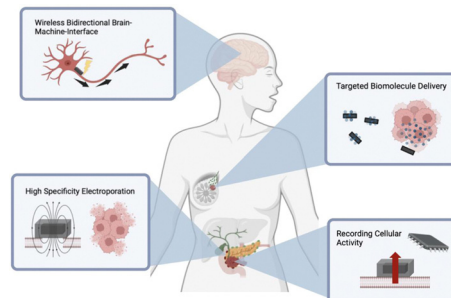
Ruizhong He, Yulong Gu, Jiye Jia, Feng Yang, Ping Wu, Pei Feng\* and Cijun Shuai\*



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## Foundational insights for theranostic applications of magnetoelectric nanoparticles

Victoria Andre, Mostafa Abdel-Mottaleb, Max Shotbolt, Shawnus Chen, Zeinab Ramezini, Elric Zhang, Skye Conlan, Ozzie Telisman, Ping Liang, John M. Bryant, Roman Chomko and Sakhrat Khizroev\*

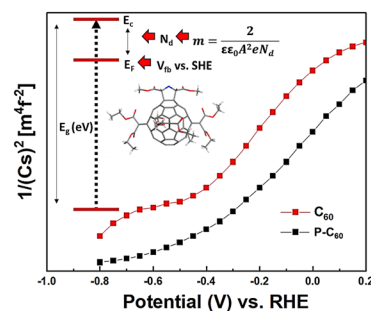


## COMMUNICATIONS

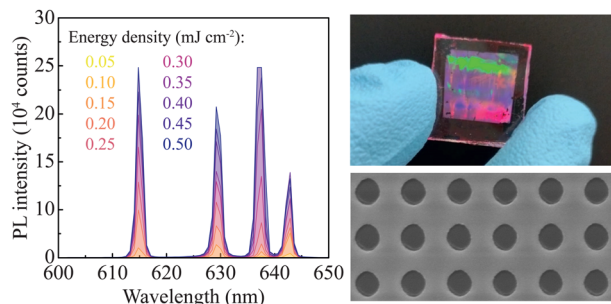
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Understanding the effects of adduct functionalization on C<sub>60</sub> nanocages for the hydrogen evolution reaction

Joy Spears, Mina Shawky Adly, Edison Castro, Alain R. Puente Santiago,\* Luis Echegoyen, Tianwei He,\* Christopher J. Dares and Mohamed Noufal\*



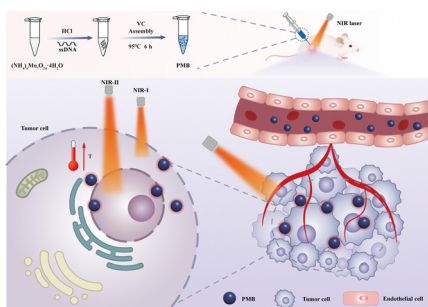
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### High-refractive-index 2D photonic structures for robust low-threshold multiband lasing

Ana Conde-Rubio, Juan R. Deop-Ruano, Luis Cerdán, Alejandro Manjavacas\* and Agustín Mihi\*

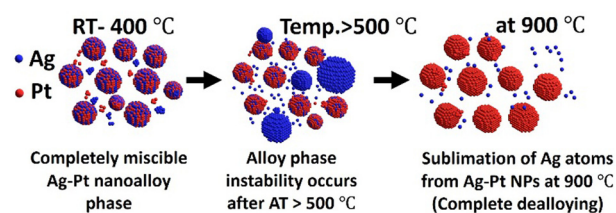
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### A phosphomolybdenum blue nano-photothermal agent with dual peak absorption and biodegradable properties based on ssDNA in near-infrared photothermal therapy for breast cancer

Baoru Fang, Siqi Geng, Ke Wang, Fang Wang, Yiqing Zhou, Jiaying Qin, Shengnan Luo, Yanping Chen and Zhangsen Yu\*

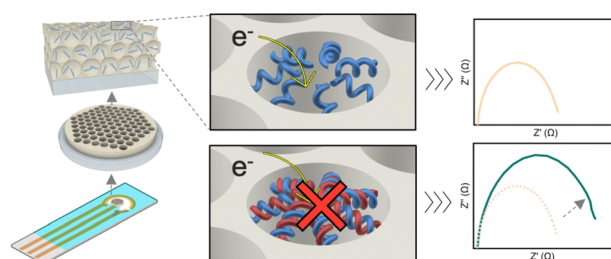
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### Thermal evolution of solid solution of silica-embedded AgPt alloy NPs in the large miscibility gap

Hemant Jatav, Anusmita Chakravorty, Ambuj Mishra, Matthias Schwartzkopf, Andrei Chumakov, Stephan V. Roth and Debdulal Kabiraj\*

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### Block copolymer-assembled nanopore arrays enable ultrasensitive label-free DNA detection

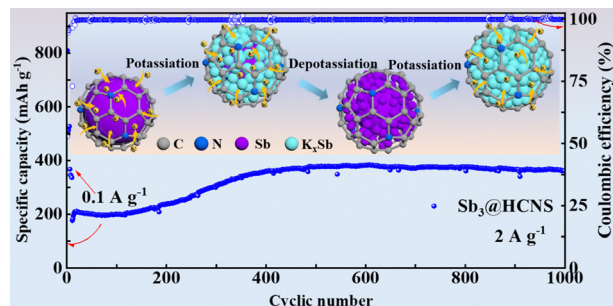
Maximiliano Jesus Jara Fornerod, Alberto Alvarez-Fernandez, Máté Füredi, Anandapadmanabhan A Rajendran, Beatriz Prieto-Simón, Nicolas H. Voelcker\* and Stefan Guldin\*



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### Multi-scale carbon@Sb mesoporous composites activated by *in situ* localized electrochemical pulverization as high-rate and long-life anode materials for potassium-ion batteries

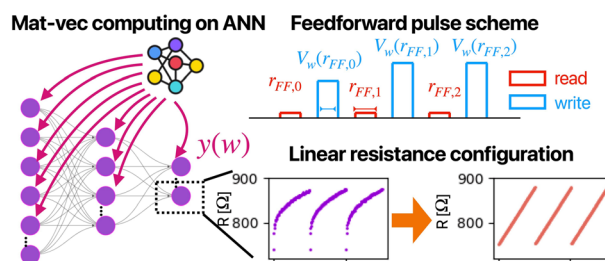
Jie Ren, Xiang Wang, Jihao Li, Qianzi Sun, Shaozhou Li, Ling Bai, Xianming Liu, Guilong Liu, Ziquan Li,\* Haijiao Zhang\* and Zhen-Dong Huang\*



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### Enhancing memristor multilevel resistance state with linearity potentiation *via* the feedforward pulse scheme

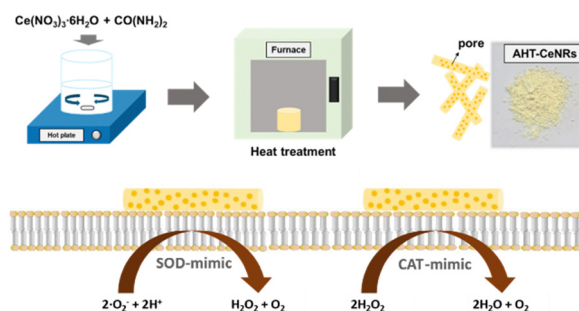
Zhuo Diao,\* Ryohei Yamamoto, Zijie Meng, Tetsuya Tohei and Akira Sakai\*



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### Large-sized and highly crystalline ceria nanorods with abundant Ce<sup>3+</sup> species achieve efficient intracellular ROS scavenging

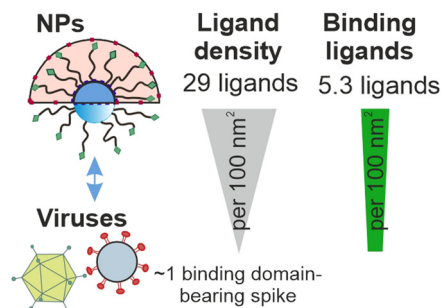
Trung Hieu Vu, Ha-Rim An, Phuong Thy Nguyen, Jiwon Seo, Chang Yeon Kim, Ji-In Park, Byoungchul Son, Hyeran Kim, Hyun Uk Lee\* and Moon Il Kim\*



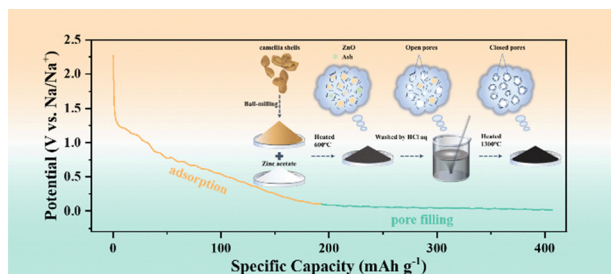
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### The quantity of ligand–receptor interactions between nanoparticles and target cells

Kathrin Schorr, Sebastian Beck, Oliver Zimmer, Felix Baumann, Max Keller, Ralph Witzgall and Achim Goepferich\*



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### Regulation of closed pores in hard carbon for enhanced electrochemical sodium storage

Ziying Zhang, Yingxinjie Wang, Kejian Tang, Zerui Chen, Xiaohui Li, Nan Zhang, Zhenjun Wu\* and Xiuqiang Xie\*

### EXPRESSION OF CONCERNS

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### Expression of concern: Innovative transdermal delivery of insulin using gelatin methacrylate-based microneedle patches in mice and mini-pigs

Bilal Demir, Lea Rosselle, Anna Voronova, Quentin Pagneux, Audrey Quenon, Valery Gmyr, Dorothee Jary, Nathalie Hennuyer, Bart Staels, Thomas Hubert, Amar Abderrahmani, Valerie Plaisance, Valerie Pawlowski, Rabah Boukherroub, Severine Vignoud\* and Sabine Szunerits\*

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### Expression of concern: Electrothermal patches driving the transdermal delivery of insulin

Quentin Pagneux, Ran Ye, Li Chengnan, Alexandre Barras, Nathalie Hennuyer, Bart Staels, D. Caina, J. I. Avila Osses, Amar Abderrahmani, Valérie Plaisance, Valérie Pawlowski, Rabah Boukherroub, Sorin Melinte\* and Sabine Szunerits\*

