

# Nanoscale Advances

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## IN THIS ISSUE

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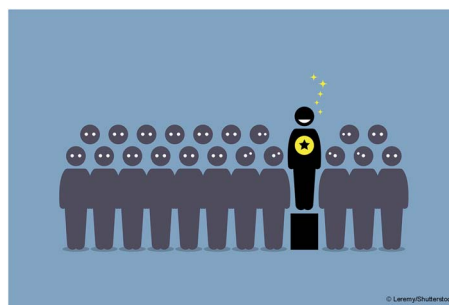


**Inside cover**  
See Bongju Kim, Dong-Wook Han *et al.*, pp. 3619–3628. Image reproduced by permission of Dong-Wook Han from *Nanoscale Adv.*, 2023, 5, 3619.

## EDITORIAL

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### Outstanding Reviewers for *Nanoscale Advances* in 2022

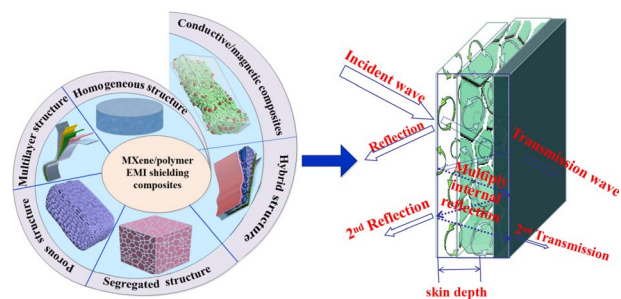


## REVIEWS

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### Structural design and preparation of $Ti_3C_2T_x$ MXene/polymer composites for absorption-dominated electromagnetic interference shielding

Qimei Zhang, Qi Wang, Jian Cui, Shuai Zhao, Guangfa Zhang, Ailin Gao and Yehai Yan\*



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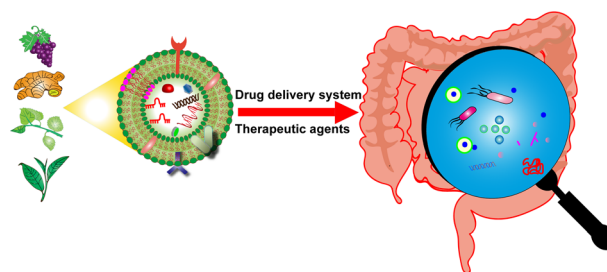


## REVIEWS

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**Plant-derived exosomal nanoparticles: potential therapeutic for inflammatory bowel disease**

De-feng Li, Qi Tang, Mei-feng Yang, Hao-ming Xu, Min-zheng Zhu, Yuan Zhang, Cheng-mei Tian, Yu-qiang Nie, Jian-yao Wang,\* Yu-jie Liang,\* Li-sheng Wang\* and Jun Yao\*

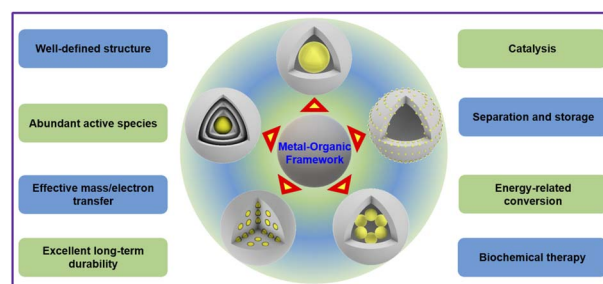


## MINIREVIEWS

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**Recent strategies for constructing hierarchical multicomponent nanoparticles/metal–organic framework hybrids and their applications**

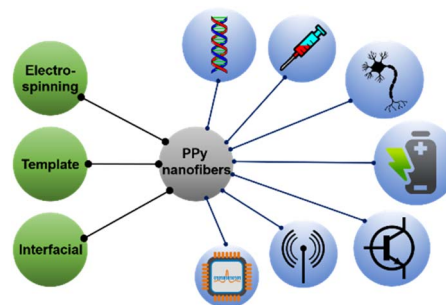
Ngoc Minh Tran, Anh Ngoc Nguyen, Jungeun Bae, Jinhee Kim, Dahae Kim and Hyojong Yoo\*



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**Synthesis and application of polypyrrole nanofibers: a review**

Yang Liu\* and Feng Wu\*

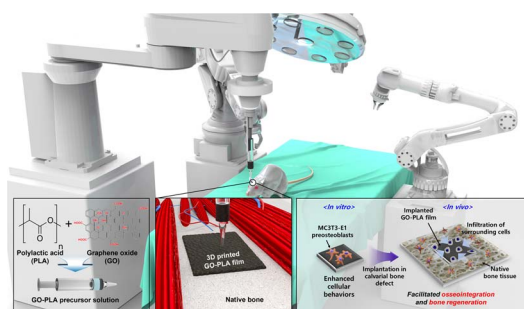


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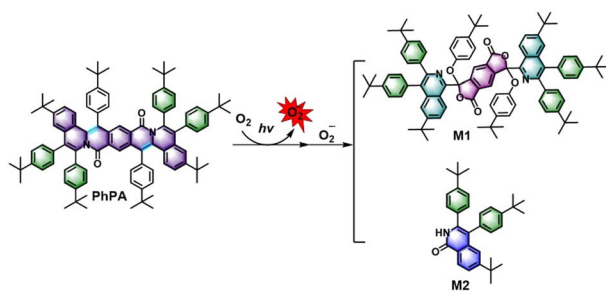
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**3D printed membranes of polylactic acid and graphene oxide for guided bone regeneration**

Hee Jeong Jang, Moon Sung Kang, Won-Hyeon Kim, Hyo Jung Jo, Sung-Ho Lee, Eun Jeong Hahm, Jung Hyun Oh, Suck Won Hong, Bongju Kim\* and Dong-Wook Han\*



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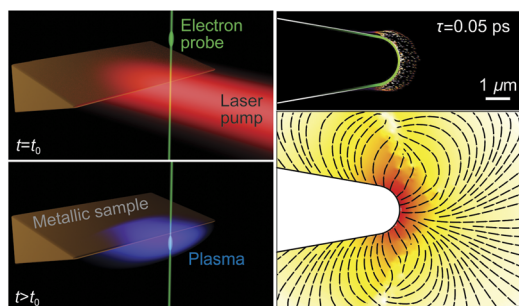


### Synthesis and properties of novel type I photosensitizer polycyclic amide

Kui Wang, Tao Ye, Haoyang Du, Xiangyu Jin, Xiaofen Yi, Huiying Gao, Yuan Zhang, Wei Dong, Shihui Liu, Jing Guan,\* Feng Lin\* and Debin Xia

## PAPERS

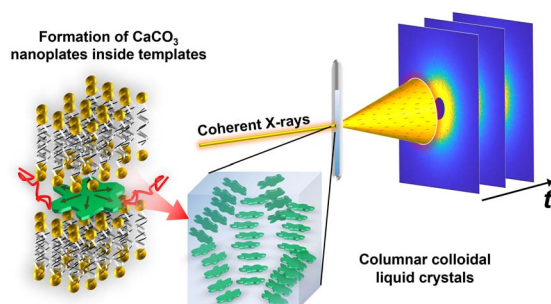
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### Generation and control of localized terahertz fields in photoemitted electron plasmas

Eduardo J. C. Dias,\* Ivan Madan, Simone Gargiulo, Francesco Barantani, Michael Yannai, Giovanni Maria Vanacore, Ido Kaminer, Fabrizio Carbone and F. Javier García de Abajo\*

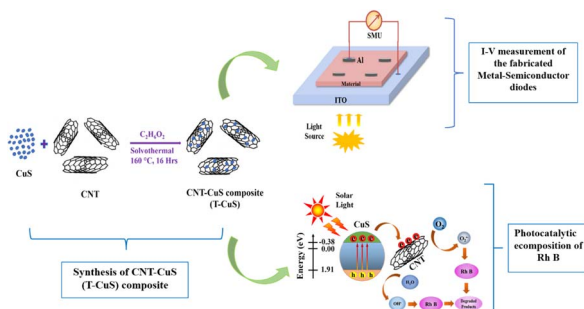
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### Experimental probing of dynamic self-organized columnar assemblies in colloidal liquid crystals

Taiki Hoshino,\* Masanari Nakayama,\* Yoshihiro Hosokawa, Kohei Mochizuki, Satoshi Kajiyama, Yoshiki Kohmura and Takashi Kato\*

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### Development of hierarchical copper sulfide-carbon nanotube (CuS-CNT) composites and utilization of their superior carrier mobility in efficient charge transport towards photodegradation of Rhodamine B under visible light

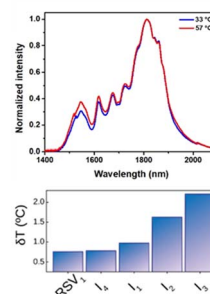
Mainak Das, Dhananjay Das, Sayantan Sil and Partha Pratim Ray\*



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### Lanthanide doped nanoparticles for reliable and precise luminescence nanothermometry in the third biological window

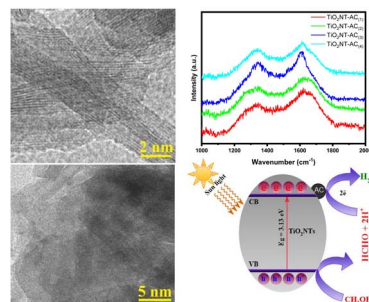
Ana C. C. Soares, Tasso O. Sales, Erving C. Ximendes, Daniel Jaque\* and Carlos Jacinto\*



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### Biomass-derived carbon deposited TiO<sub>2</sub> nanotube photocatalysts for enhanced hydrogen production

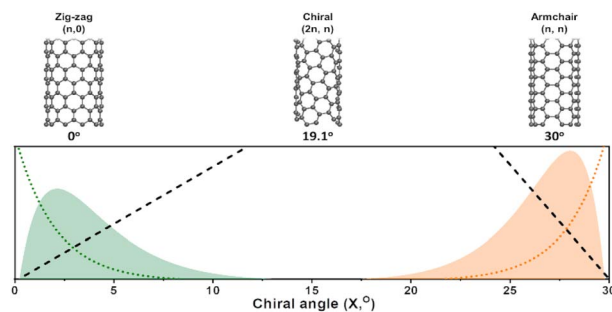
Shaeel Ahmed Althabaiti, Zaheer Khan, Maqsood Ahmad Malik\*, Salem Mohamed Bawaked, Soad Zahir Al-Sheheri, Mohamed Mokhtar, Sharf Ilahi Siddiqui and Katabathini Narasimharao\*



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### An extended model for chirality selection in single-walled carbon nanotubes

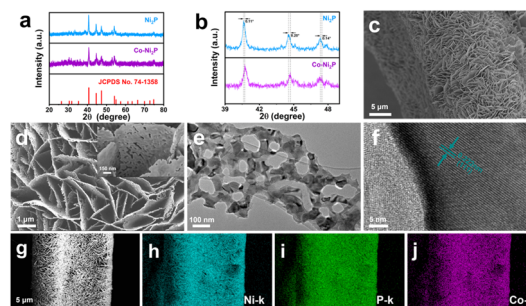
Nigora Turaeva, Yoosuk Kim and Irma Kuljanishvili\*



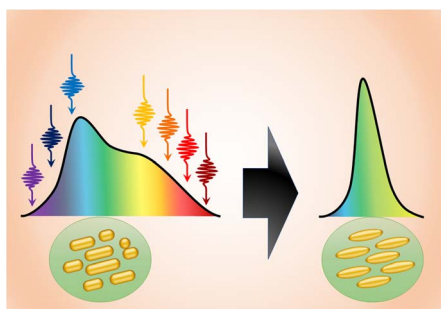
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### Defect engineering and atomic doping of porous Co-Ni<sub>2</sub>P nanosheet arrays for boosting electrocatalytic oxygen evolution

Qiangqiang Wang, Hongmin Ma, Xiang Ren, Xu Sun, Xuejing Liu, Dan Wu\* and Qin Wei\*



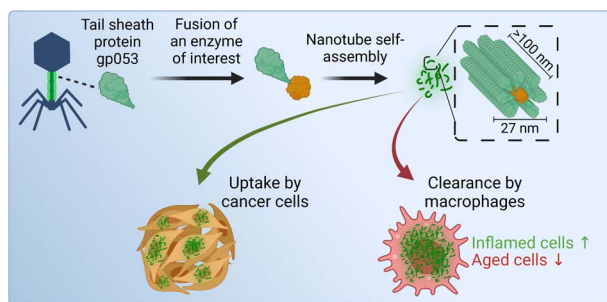
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### Tunable-wavelength nanosecond laser tailoring of plasmon resonance spectra of gold nanoparticle colloids

Thanyada Sukmanee, Michał Szuster, Aleksander Gorski, Marcin Hołdyński and Sylwester Gawinkowski\*

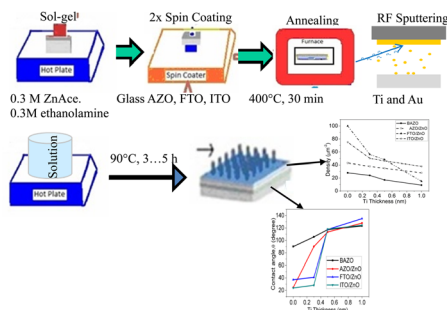
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### Nanotubes from bacteriophage tail sheath proteins: internalisation by cancer cells and macrophages

Dovydas Gabrielaitis, Vilmante Zitkute, Lina Saveikyte, Greta Labutyte, Martynas Skapas, Rolandas Meskys, Vida Casaite, Ausra Sasnauskiene\* and Urte Neniskyte\*

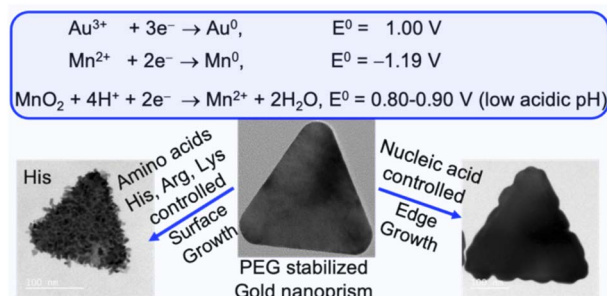
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### Effect of Ti and Au buffer layers on controlling the density and wettability of well-aligned ZnO nanorod arrays grown on different substrates

M. Kamruzzaman\* and J. A. Zapien\*

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### Seed free synthesis of polyethylene glycol stabilized gold nanoprisms exploiting manganese metal at low pH

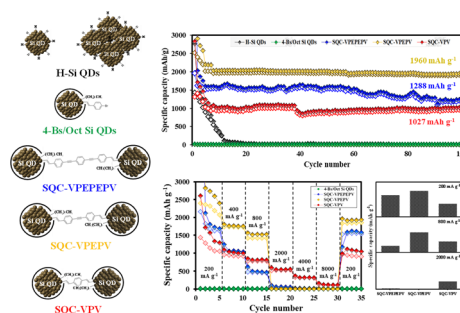
Kanika Bharti, Md Azimuddin Sk and Kalyan K. Sadhu\*



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## Influence of bridge structure manipulation on the electrochemical performance of $\pi$ -conjugated molecule-bridged silicon quantum dot nanocomposite anode materials for lithium-ion batteries

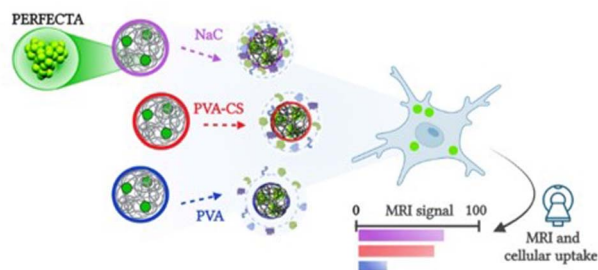
Young-Hwa Choi, Jiyoung Bang, Sunyoung Lee and Hyun-Dam Jeong\*



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## Pivotal role of the protein corona in the cell uptake of fluorinated nanoparticles with increased sensitivity for $^{19}\text{F}$ -MR imaging

Lodovico Gatti, Cristina Chirizzi, Giulia Rotta, Pietro Milesi, Maria Sancho-Albero, Victor Sebastián, Anna Mondino, Jesús Santamaría, Pierangelo Metrangolo, Linda Chaabane\* and Francesca Baldelli Bombelli\*



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## Highly selective $\text{CO}_2$ sensing response of lanthanum oxide nanoparticle electrodes at ambient temperature

Amutha Eswaran, Madhumitha Thirumalainambi, Rajadurai Pandian Subramaniam and Gurusamy Annadurai\*

