

# Nanoscale Advances

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## IN THIS ISSUE

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### Cover

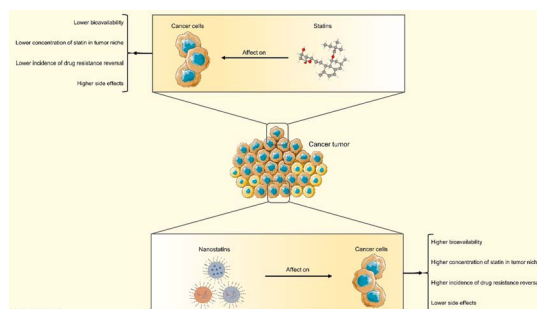
See Sherine O. Obare, Anthony L. Dellinger *et al.*, pp. 5833–5852.  
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### Nanomedicine marvels: crafting the future of cancer therapy with innovative statin nano-formulation strategies

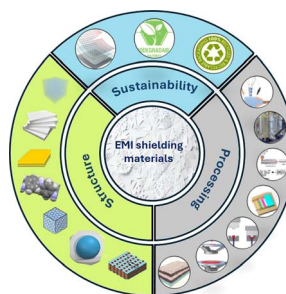
Ashkan Karimi Jirandehi, Reza Asgari, Sanaz Keshavarz Shahbaz\* and Nima Rezaei



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### A review on recent progress in polymer composites for effective electromagnetic interference shielding properties – structures, process, and sustainability approaches

Rajesh Kumar Bheema, Gopu J, Krithika Bhaskaran, Akshat Verma, Murthy Chavali and Krishna Chaitanya Etika\*



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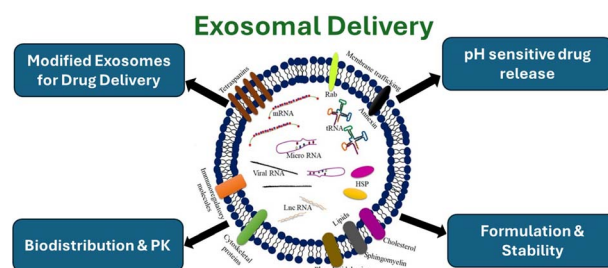
**Fundamental questions  
Elemental answers**

## REVIEWS

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### A comprehensive review of challenges and advances in exosome-based drug delivery systems

Sushesh Srivatsa Palakurthi, Brijesh Shah, Sumedha Kapre, Nitin Charbe, Susan Immanuel, Sindhura Pasham, Maharshi Thalla, Ankit Jain and Srinath Palakurthi\*

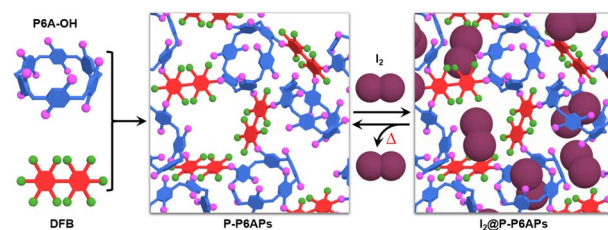


## COMMUNICATION

5827

### Porous pillar[6]arene-based polymers for reversible iodine capture

Shujie Lin, Ziliang Zhang, Di Gao, Longming Chen, Chengyang Tian, Junyi Chen\* and Qingbin Meng\*

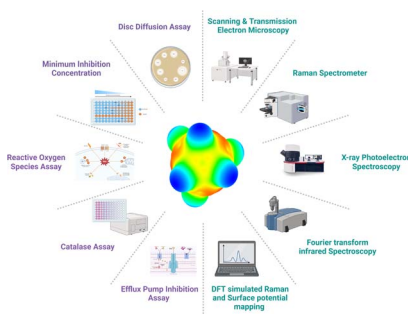


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### A rapid one-step synthesis of silver and copper coordinated chlorine functionalized fullerene nanoparticles with enhanced antibacterial activity

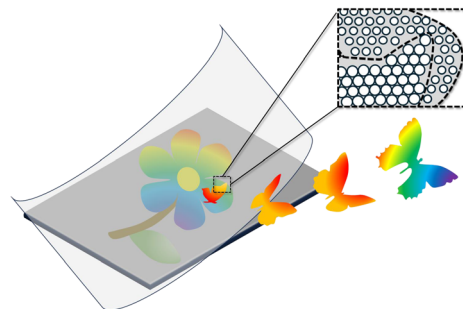
Abed Alqader Ibrahim, Tariq Khan, Kyle Nowlin, Jared Averitt, Gayani Pathiraja, Dennis LaJeunesse, Sherine O. Obare\* and Anthony L. Dellinger\*



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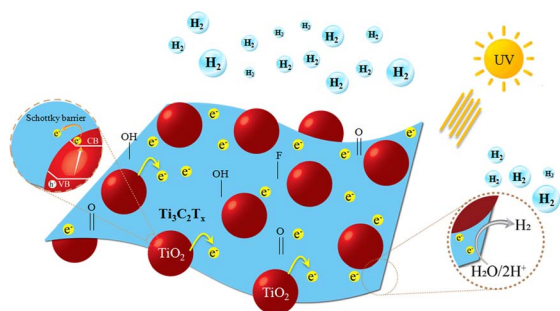
### Anti-counterfeiting labels of photonic crystals with versatile structural colors

Nguyen Hoang Minh, Kwanoh Kim, Do Hyun Kang, Yeong-Eun Yoo and Jae Sung Yoon\*





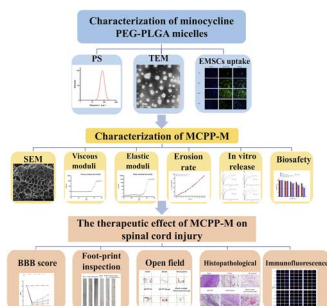
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### Unveiling the potential of MXene-fabricated catalysts: an effective approach for H<sub>2</sub> generation from water splitting

Muhammad Zeeshan Abid, Khezina Rafiq,<sup>\*</sup> Abdul Rauf and Ejaz Hussain<sup>\*</sup>

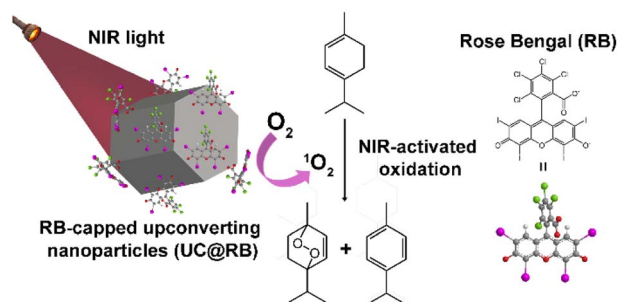
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### Preparation of a minocycline polymer micelle thermosensitive gel and its application in spinal cord injury

Jun Gu, Xiaohu Cai, Faisal Raza, Hajra Zafar, Bo Chu, Haitao Yuan, Tianqi Wang, Jiapeng Wang and Xiaojun Feng<sup>\*</sup>

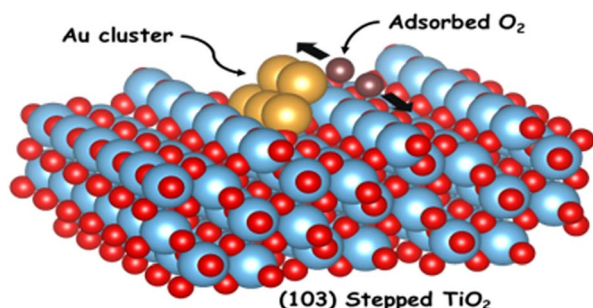
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### NIR-triggered photooxygenation of $\alpha$ -terpinene with upconversion nanohybrids

Laura Francés-Soriano, Delia Bellezza, Juan Ferrera-González, María González-Béjar<sup>\*</sup> and Julia Pérez-Prieto<sup>\*</sup>

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### Tailoring surface morphology on anatase TiO<sub>2</sub> supported Au nanoclusters: implications for O<sub>2</sub> activation

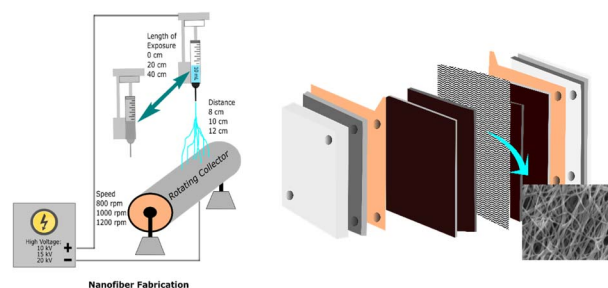
Muhammed Fasil Puthiyaparambath, Julian Ezra Samuel and Raghu Chathanathi<sup>\*</sup>



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## Fabricating ultra-thin nanofiber structures towards the advanced MEA of fuel cells: investigation of the degree of alignment, diameter, bead generation, and precision with Taguchi designs

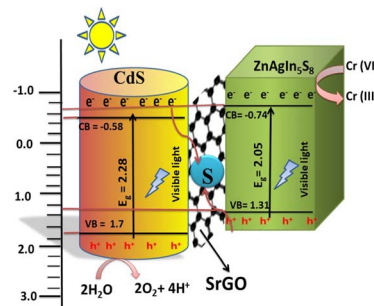
Muhammad Yusro\* and Viktor Hacker



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## Synergistic effect of Zn-AgIn<sub>5</sub>S<sub>8</sub>/CdS Z-scheme heterojunction and S-doped rGO for efficient removal of chromium from contaminated water

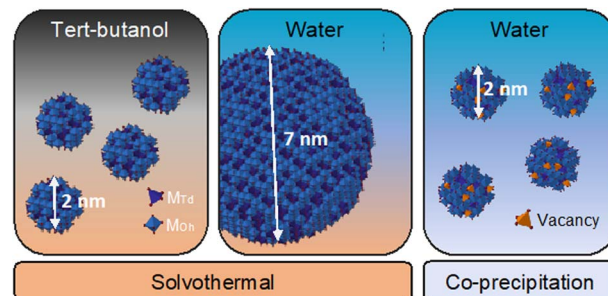
Soumya Mishra, Naresh Kumar Sahoo,\* Prasanta Kumar Sahoo, Satyanjib Sahoo, Prangya Ranjan Rout and Goutam Rath



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## Effect of solvothermal synthesis parameters on the crystallite size and atomic structure of cobalt iron oxide nanoparticles

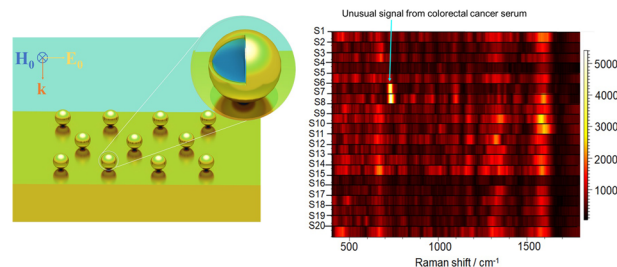
Olivia Aalling-Frederiksen, Rebecca K. Pittkowski, Andy S. Anker, Jonathan Quinson, Lars Klemeyer, Benjamin A. Frandsen, Dorota Koziej and Kirsten M. Ø. Jensen\*



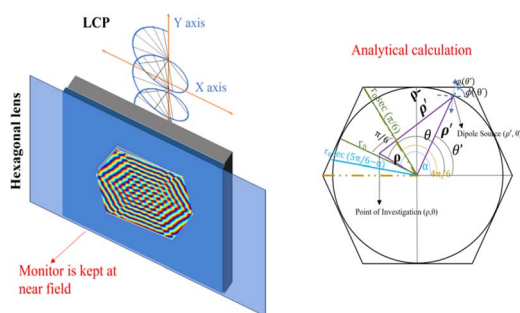
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## Fano enhancement of SERS for rapid early diagnosis of colorectal cancer

Tianxun Gong, Zhenjiang Wei, Libin Huang, Yan Hong, Yuan Li, Ke-ling Chen, Wen Huang, Xiaojing Zhong, Jinzhao He, Ming-Yi Lee, En-Chi Chang, Kien Voon Kong,\* Xiaosheng Zhang\* and Zongguang Zhou\*



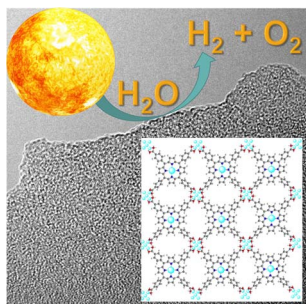
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### Optimization of a plasmonic lens structure for maximum optical vortices induced on Weyl semimetal surface states

Ritwik Banerjee and Tanmoy Maiti\*

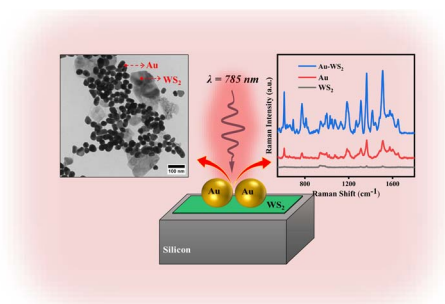
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### Photocatalytic activity of a 2D copper porphyrin metal–organic framework for visible light overall water splitting

Andrés Uscategui-Linares, Horatiu Szalad, Josep Albero\* and Hermenegildo García\*

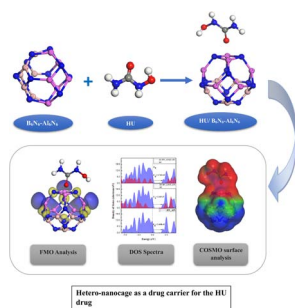
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### Highly sensitive label-free biomolecular detection using Au–WS<sub>2</sub> nanohybrid based SERS substrates

Om Prakash, Abhijith T, Priya Nagpal, Vivekanandan Perumal, Supravat Karak, Udai B. Singh and Santanu Ghosh\*

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### Understanding the adsorption performance of hetero-nanocages (C<sub>12</sub>–B<sub>6</sub>N<sub>6</sub>, C<sub>12</sub>–Al<sub>6</sub>N<sub>6</sub>, and B<sub>6</sub>N<sub>6</sub>–Al<sub>6</sub>N<sub>6</sub>) towards hydroxyurea anticancer drug: a comprehensive study using DFT

Mithila Roy Swarna, Mehedi Hasan Opi, Tanvir Ahmed, Afiya Akter Piya, Umme Habiba and Siraj Ud Daula Shamim\*

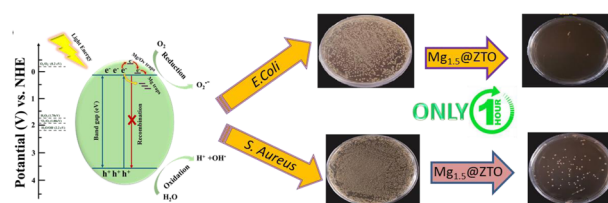


## PAPERS

6008

# Ternary zinc–tin–oxide nanoparticles modified by magnesium ions as a visible-light-active photocatalyst with highly strong antibacterial activity

Alaa Kamo, Ozlem Ates Sonmezoglu and Savas Sonmezoglu\*



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# Monolayers $\text{Sn}_2\text{Te}_2\text{X}_4$ ( $\text{X} = \text{P}, \text{As}$ ) as promising materials for photocatalytic water splitting and flexible devices: a DFT study

Dat D. Vo, Tuan V. Vu, A. I. Kartamyshev, Thi H. Ho and Nguyen N. Hieu\*

