

# Materials Advances

An open access journal publishing across the breadth of materials science

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## IN THIS ISSUE

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### Inside cover

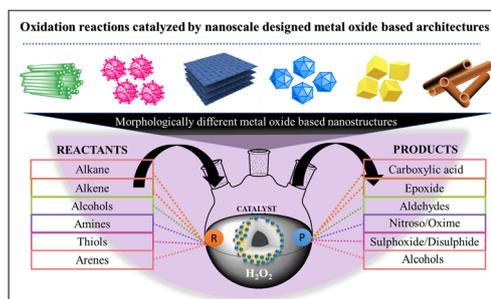
See Rakesh Kumar Sharma *et al.*, pp. 1795–1830. Image reproduced by permission of Rakesh Kumar Sharma from *Mater. Adv.*, 2023, 4, 1795.

## REVIEWS

1795

### Advanced metal oxide-based nanocatalysts for the oxidative synthesis of fine chemicals

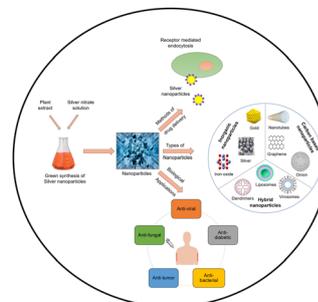
Rakesh Kumar Sharma,\* Rakeshwar Bandichhor, Vishwesh Mishra, Shivani Sharma, Sneha Yadav, Shilpa Mehta, Bhavya Arora, Pooja Rana, Sriparna Dutta and Kanika Solanki



1831

### Green synthesis of silver nanoparticles: methods, biological applications, delivery and toxicity

Vidyasagar, Ritu Raj Patel, Sudhir Kumar Singh and Meenakshi Singh\*



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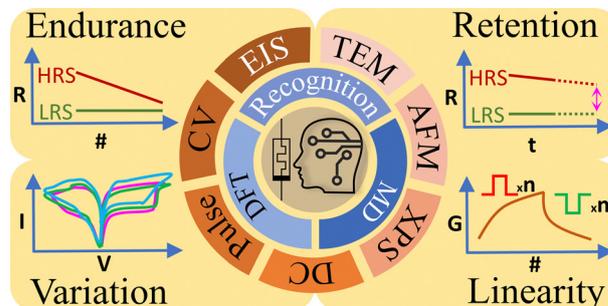


## REVIEWS

1850

### Enhancing memristor fundamentals through instrumental characterization and understanding reliability issues

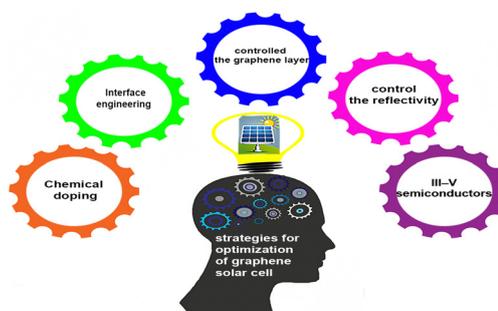
Fei Qin, Yuxuan Zhang, Han Wook Song and Sunghwan Lee\*



1876

### Rational and key strategies toward enhancing the performance of graphene/silicon solar cells

Parisa Fallahzad

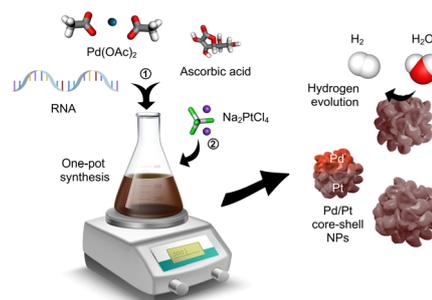


## COMMUNICATION

1900

### Green one-pot synthesis of bimetallic Pd–Pt nanosponges using biomolecules with enhanced catalytic activity for hydrogen evolution reactions

Fuat Topuz,\* Bhushan Patil and Tamer Uyar\*

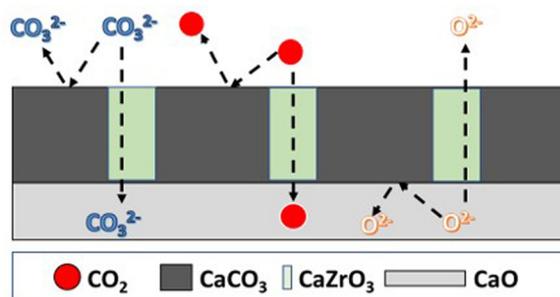


## PAPERS

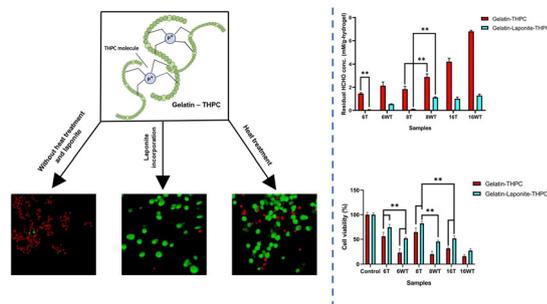
1905

### Upcycling natural Limestone waste for thermochemical energy storage by utilising tailored CaZrO<sub>3</sub> nanoadditives

Rehan Anwar, Jan Navrátil, Rajani K. Vijayaraghavan, Patrick J. McNally, Michal Otyepka, Piotr Błoński and M. Veronica Sofianos\*



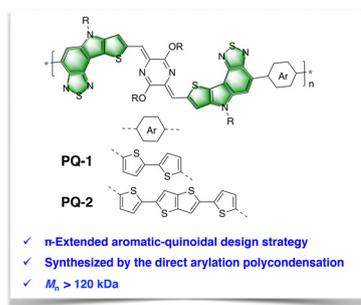
1916



### Development of cytocompatible protein-based hydrogels crosslinked using tetrakis(hydroxymethyl)phosphonium chloride

Jatin Jawhir Pandit, Archita Shrivastava, Tanmay Bharadwaj and Devendra Verma\*

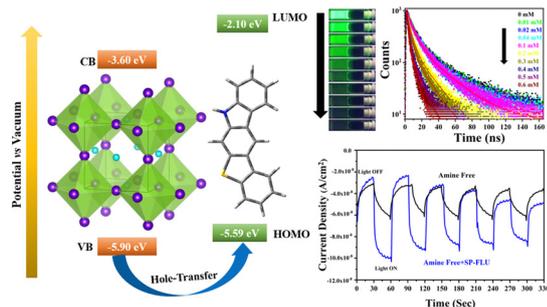
1927



### 6*H*-[1,2,5]Thiadiazolo[3,4-*e*]thieno[3,2-*b*]indole-flanked *para*-azaquinodimethane based aromatic-quinoidal polymer semiconductors with high molecular weights synthesized *via* direct arylation polycondensation

Yufa Xiao, Huajie Fu, Zefeng Li, Yingxuan Zheng, Ping Deng,\* Yanlian Lei\* and Yan Yu\*

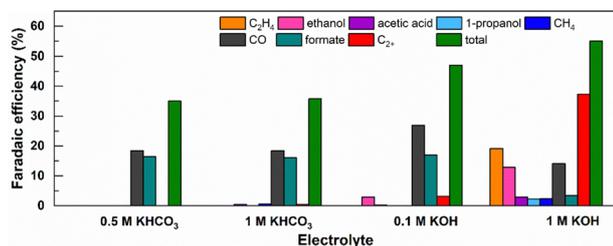
1935



### Surface engineering of CsPbBr<sub>3</sub> perovskite nanocrystals: hole transfer dynamics and enhanced photocurrent response using a novel organic molecule

D. Venkateswarlu, T. Swetha, Syed Akhil, Manoj Palabathuni, Nimai Mishra and Surya Prakash Singh\*

1941



### Control of evolution of porous copper-based metal–organic materials for electroreduction of CO<sub>2</sub> to multi-carbon products

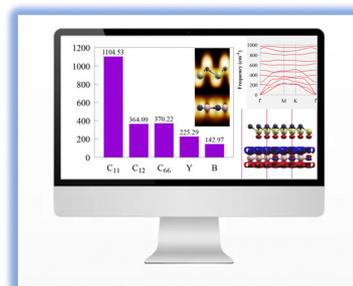
Lili Li, Lutong Shan, Alena M. Sheveleva, Meng He, Yujie Ma, Yiqi Zhou, Marek Nikiel, Laura Lopez-Odrozola, Louise S. Natrajan, Eric J. L. McInnes, Martin Schröder,\* Sihai Yang\* and Floriana Tuna\*



1949

### Rational design of 2D/2D CS/SiC van der Waals type-II heterojunctions: a visible-light-driven photocatalyst for hydrogen production

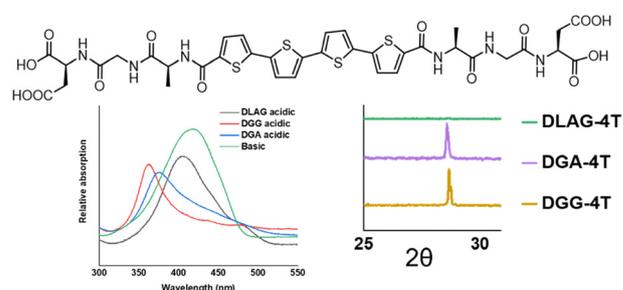
Francis Opoku,\* Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor and Anthony Apeke Adimado



1964

### Relation among absorbance shifts, mineralization morphology, and electronic conductivity of $\pi$ -peptide aggregates with different amino acid residues

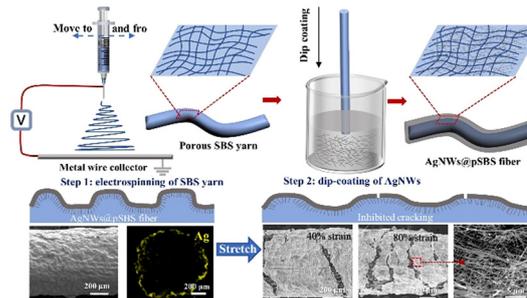
Taein Lee, Sayak Subhra Panda, Grant E. K. Hall, Yunjia Song, John D. Tovar and Howard E. Katz\*



1978

### An electrically stable and mechanically robust stretchable fiber conductor prepared by dip-coating silver nanowires on porous elastomer yarn

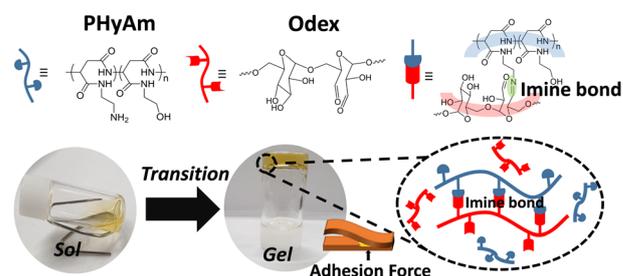
Xin He, Ningjing Zhou, Yushan Li, Puxian Xiong, Shuai Zhang\* and Zhijun Ma\*



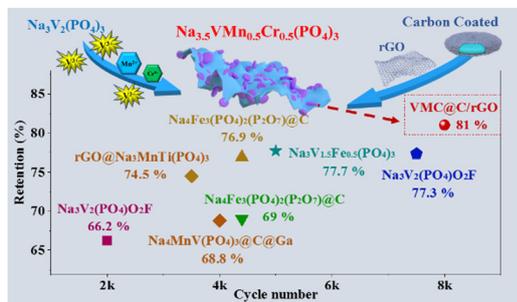
1989

### Preparation of polyaspartamide-based adhesive hydrogels via Schiff base reaction with aldehyde-functionalized dextran

Hend A. Hegazy, Hwi Hyun Moon, Dong-Hyun Lee, Suk Ho Bhang, Youn-Chul Kim,\* Changsik Song\* and Ji-Heung Kim\*



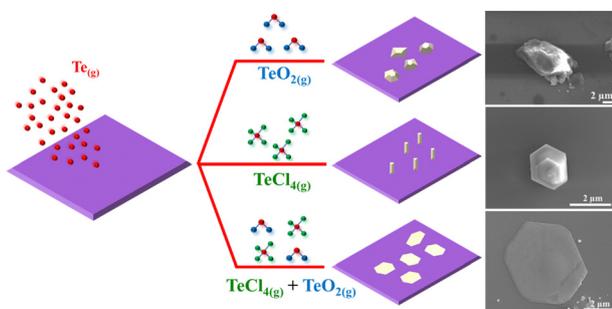
1998



### Hierarchical cathode constructed by carbon coated $\text{Na}_{3.5}\text{VMn}_{0.5}\text{Cr}_{0.5}(\text{PO}_4)_3$ nanoparticles on rGO for high-capacity and long-cycle life sodium storage

Jinhao Wang, Longzhu Zhao and Fengqi Lu\*

2008



### Chloride-assisted synthesis of tellurene directly on $\text{SiO}_2/\text{Si}$ substrates: growth mechanism, thermal properties, and device applications

Yi-Hsun Chan, Che-Yi Lin, Yu-Chang Chou, Alice Chinghsuan Chang, Yen-Fu Lin and Yu-Ze Chen\*

