

# Materials Advances

An open access journal publishing across the breadth of materials science

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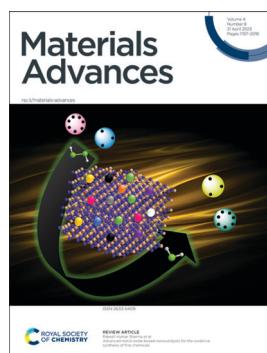
## IN THIS ISSUE

ISSN 2633-5409 CODEN MAADC9 4(8) 1787-2018 (2023)



Cover

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Inside cover

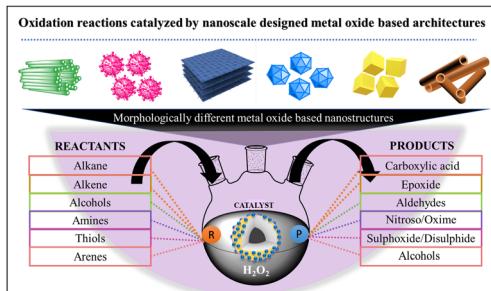
INSIDE COVER  
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## REVIEWS

1795

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

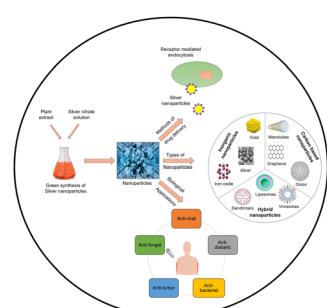
Rakesh Kumar Sharma,\* Rakeshwar Bandichhor, Vishwesh Mishra, Shivani Sharma, Sneha Yadav, Shilpa Mehta, Bhavya Arora, Pooja Rana, Sriparna Dutta and Kanika Solanki



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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Materials Advances (electronic: ISSN 2633-5409) is published 24 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

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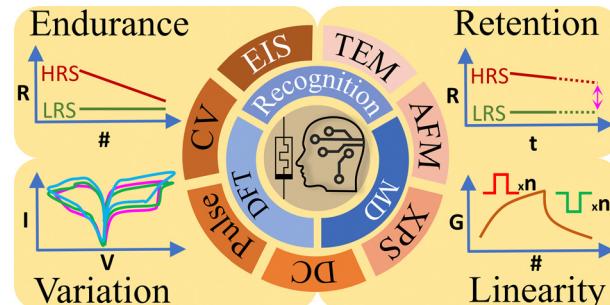


## REVIEWS

1850

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

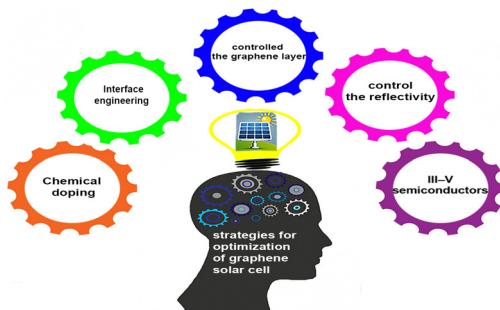
Fei Qin, Yuxuan Zhang, Han Wook Song and Sunghwan Lee\*



1876

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

Parisa Fallahazad

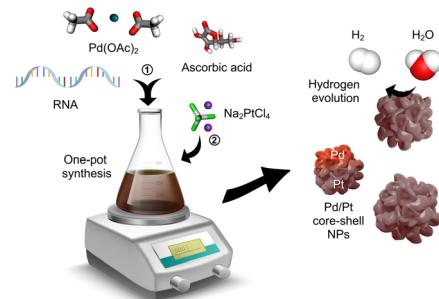


## COMMUNICATION

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\*

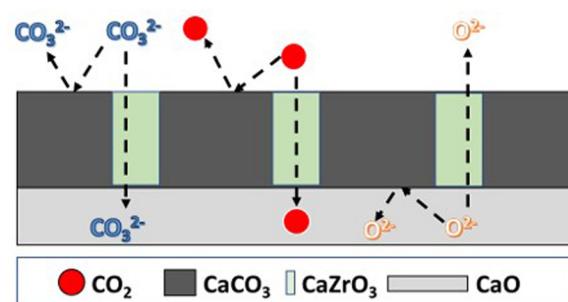


## PAPERS

1905

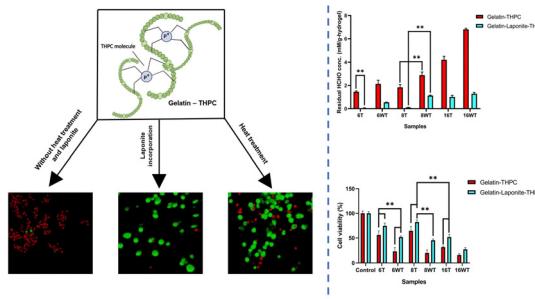
**Upcycling natural Limestone waste for thermochemical energy storage by utilising tailored  $\text{CaZrO}_3$  nanoadditives**

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



## PAPERS

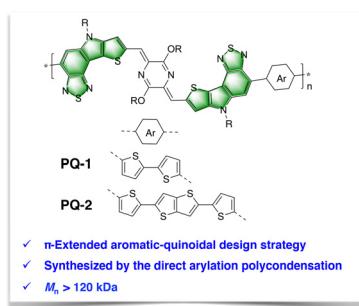
1916



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

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

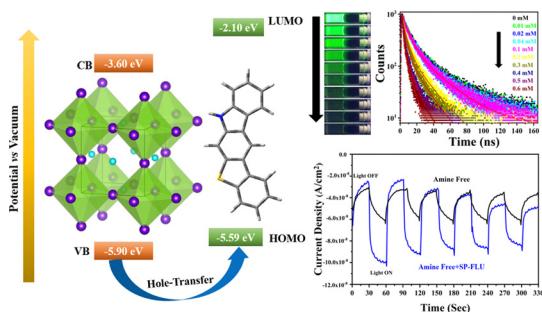
1927



## 6H-[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\*

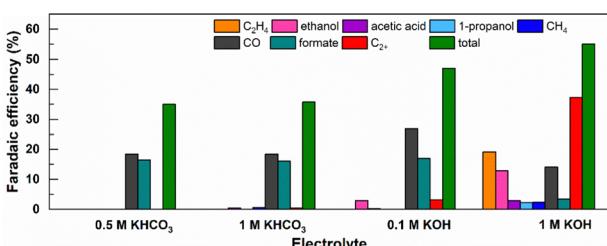
1935



## Surface engineering of $\text{CsPbBr}_3$ 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 $\text{CO}_2$ to multi-carbon products

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

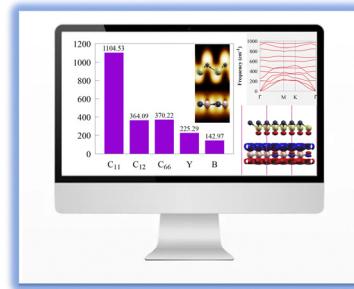


## PAPERS

1949

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

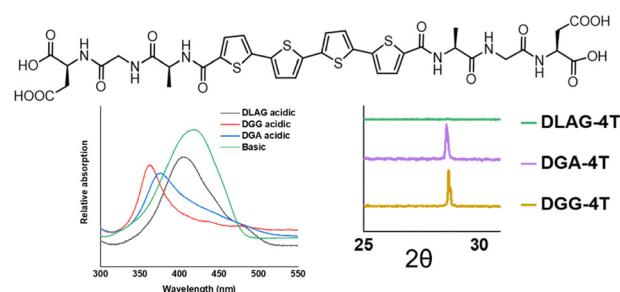
Francis Opoku,\* Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor and Anthony Apeke Adimado



1964

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

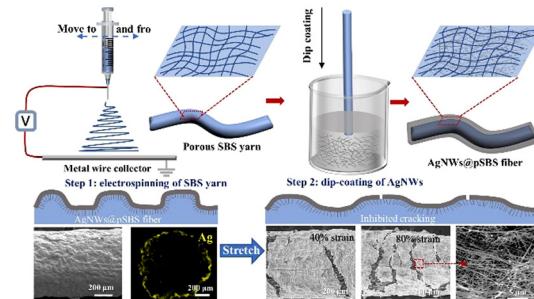
Taein Lee, Sayak Subhra Panda, Grant E. K. Hall, Yunjia Song, John D. Tovar and Howard E. Katz\*



1978

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

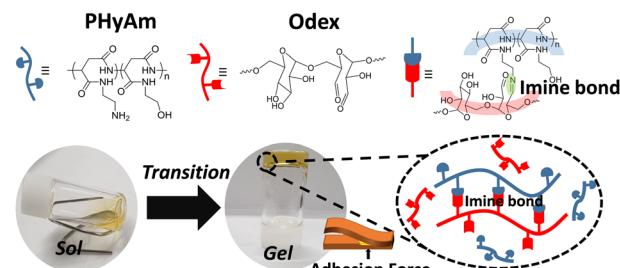
Xin He, Ningjing Zhou, Yushan Li, Puxian Xiong, Shuai Zhang\* and Zhijun Ma\*



1989

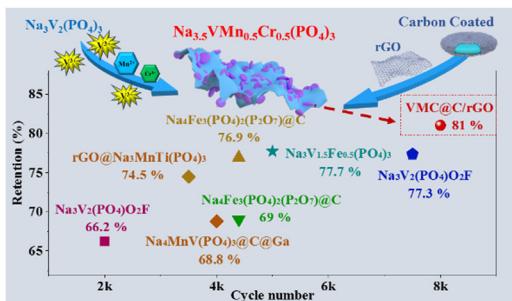
## Preparation of polyaspartamide-based adhesive hydrogels via Schiff base reaction with aldehyde-functionalized dextran

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



## PAPERS

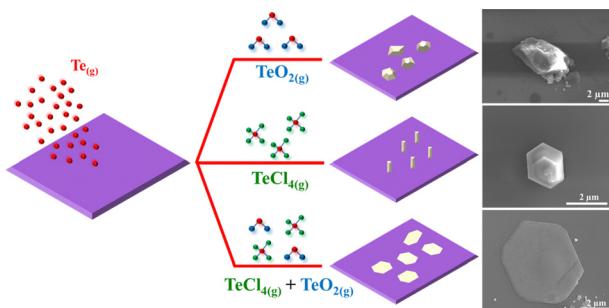
1998



## Hierarchical cathode constructed by carbon coated Na<sub>3.5</sub>VMn<sub>0.5</sub>Cr<sub>0.5</sub>(PO<sub>4</sub>)<sub>3</sub> 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 SiO<sub>2</sub>/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\*

