

# Sustainable Energy & Fuels

Interdisciplinary research for the development of sustainable energy technologies

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**Cover**  
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**Inside cover**  
See Mrigendra Dubey *et al.*, pp. 3015–3019. Image reproduced by permission of Mrigendra Dubey from *Sustainable Energy Fuels*, 2024, 8, 3015.

## PERSPECTIVE

3001

### Future perspectives in green hydrogen production by catalyzed sono-photolysis of water

Piergiovanni Domenighini,\* Ferdinando Costantino, Pier Luigi Gentili, Anna Donnadio, Morena Nocchetti, Alceo Macchioni, Federico Rossi and Franco Cotana

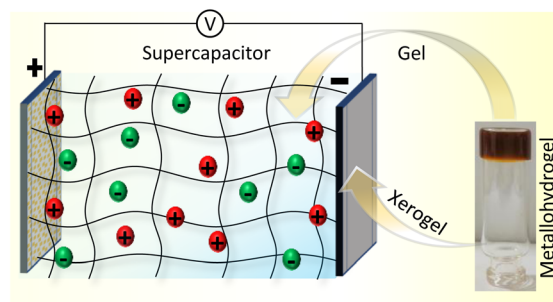


## COMMUNICATIONS

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### Electrochemical performance of a Li<sup>+</sup>-enriched metallohydrogel as an electrolyte and electrode material for supercapacitors

Yeeshu Kumar, Moupia Mukherjee, Manish Kumar Dixit, Abul Kalam and Mrigendra Dubey\*



# Environmental Science: Atmospheres

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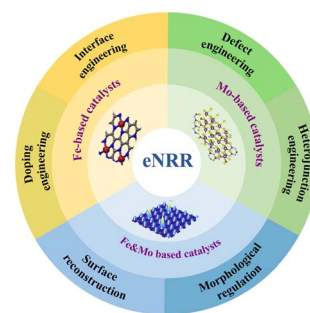
Fundamental questions  
Elemental answers



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## Recent advances in Fe, Mo-based electrocatalysts for nitrogen reduction under ambient conditions

Xiaoyu Li, Yutong Yang, Qin Ding and Yin Wang\*

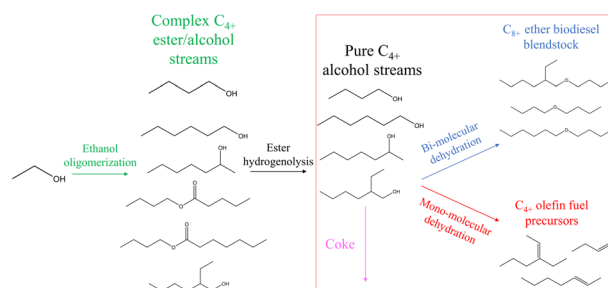


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## Production of drop-in biodiesel blendstocks via competitive acid-catalyzed dehydration reactions using ethanol oligomerization products

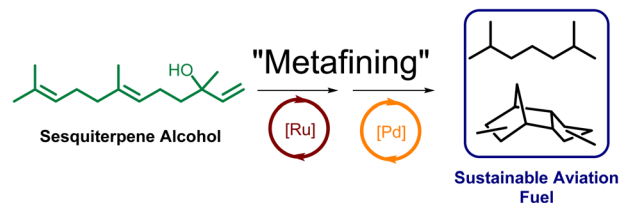
Emmanuel Canales, Samuel C. Hower, Daniel Paul Li, Aditya Tambe, David Rothamer and George W. Huber



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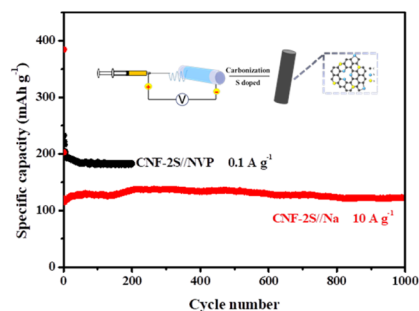
C. Luke Keller, Christopher J. Walkling, Derek D. Zhang and Benjamin G. Harvey\*



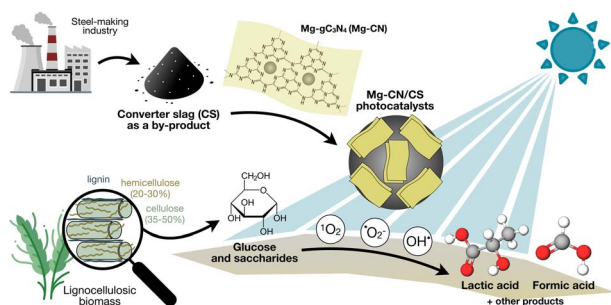
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## Sulfur-doped carbon nanofibers as stable and high performance anode materials for sodium-ion batteries

Mengwei Lu, Ying Huang,\* Xianping Du and Xitong Sheng



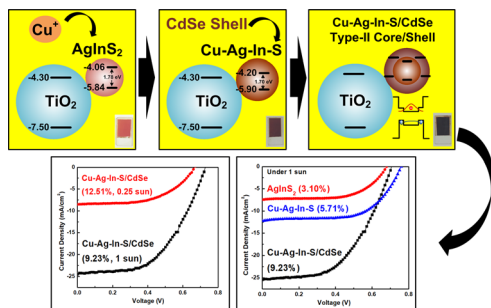
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### Mg-modified graphitic carbon nitride/converter slag composites as an efficient photocatalyst for sugar conversion

Assadawoot Srikhaow, Chitiphon Chuaicham, Jirawat Trakulmututa, Kaiqian Shu and Keiko Sasaki\*

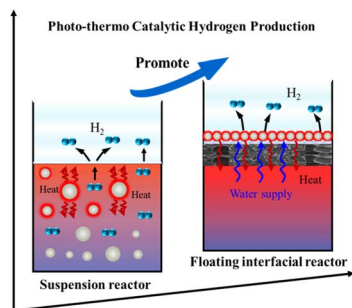
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### Cu-mediated broadening of the absorption band of quaternary Cu-Ag-In-S/CdSe type-II core/shell quantum dot-sensitized solar cells with an efficiency of 12.51% under 0.25 sun

Siti Utari Rahayu, Andy Candra, Jen-Bin Shi and Ming-Way Lee\*

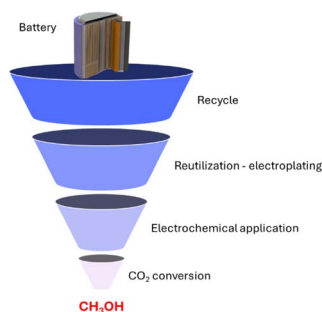
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### Photo-thermo-catalytic hydrogen production by an interfacial reactor with potassium-doped polymeric carbon nitride/titanium nitride

Dechao Wang, Hang Zhao, Jianglin Tu, Xun Zhu, Dingding Ye, Yang Yang, Hong Wang, Rong Chen\* and Qiang Liao

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### Recycling spent batteries to green innovation: a CuCo-based composite as an electrocatalyst for CO<sub>2</sub> reduction

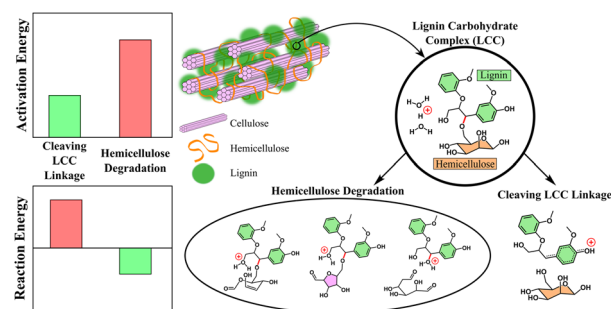
Jean C. da Cruz, Ricardo M. e Silva, Gelson T. S. T. da Silva, Lucia H. Mascaro and Caue Ribeiro\*



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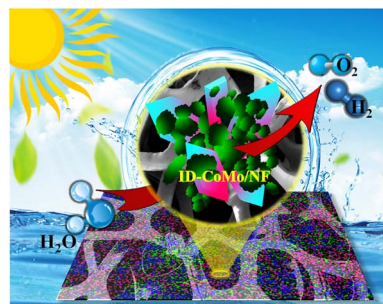
Seth Beck and Samir H. Mushrif\*



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## Design strategy of encapsulated nanoplates and nanorods (ID-CoMo): enhanced catalytic activity and sustainability for overall & solar cell water splitting

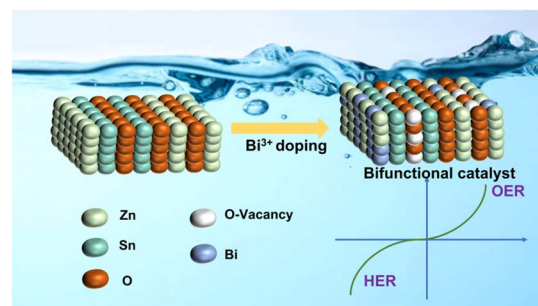
Muthukumar Sangamithirai, Murugan Vijayarangan, Arunagiri Gayathri, Murugan Muthamildevi and Jayaraman Jayabharathi\*



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## Enhanced electrocatalytic performance of bismuth-doped zinc stannate towards OER and HER through oxygen vacancies: p-block metal ion doping empowering d-block

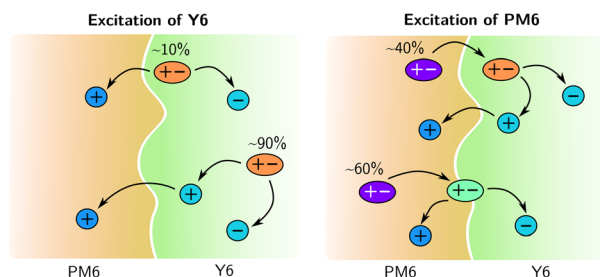
Reshmi T. Parayil, Santosh K. Gupta,\* Kalpana Garg, Sangeeta Jangra, Soumen Samanta, K. Sudarshan, M. Mohapatra and Tharamani C. Nagaiah\*



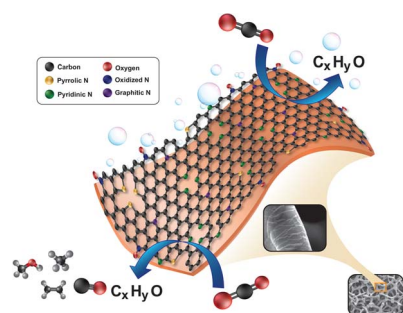
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## From light to hydrogen: the complete life cycle of free charges in photocatalytic nanoparticles

Jessica M. de la Perrelle, Rohan J. Hudson, Andrew Dolan, Sanjib Jana, Xun Pan, Mats R. Andersson, Howe-Siang Tan, Zuhur H. Alotaibi, Gunther G. Andersson, Trevor A. Smith, David M. Huang and Tak W. Kee\*



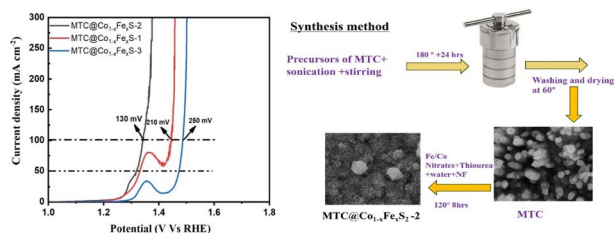
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### Selective conversion of carbon dioxide to formate using few-layer nitrogen-doped graphene on copper foam with enhanced suppression of the hydrogen evolution reaction

Thanthita Sasipatworakarn, Daranphop Pikulrat, Kan Homlamai, Salatan Duangdangchote and Montree Sawangphruk\*

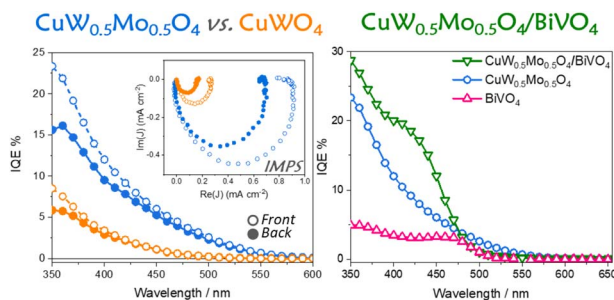
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### Boosting oxygen evolution with electrodes composed of metal sulfides and hydrogen bonded organic frameworks

Hina Naz, Rai Nauman Ali, Waqar Ahmad Qureshi, Amjad Ali, Nyaaba Akeno Albert and Guoxing Zhu\*

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### Improving the photoelectrocatalytic efficiency of $\text{CuWO}_4$ through molybdenum for tungsten substitution and coupling with $\text{BiVO}_4$

Annalisa Polo, Maria Vittoria Dozzi,\* Gianluigi Marra, Kevin Sivula and Elena Selli

