

# Chem Soc Rev

Chemical Society Reviews

rsc.li/chem-soc-rev

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 0306-0012 CODEN CSRVBR 53(14) 7301-7634 (2024)



### Cover

See Yi Lu, Siqi Huan, Long Bai, Orlando J. Rojas *et al.*, pp. 7363–7391. Image reproduced by permission of Ayako Takagi from *Chem. Soc. Rev.*, 2024, 53, 7363. Image credit: Ayako Takagi.



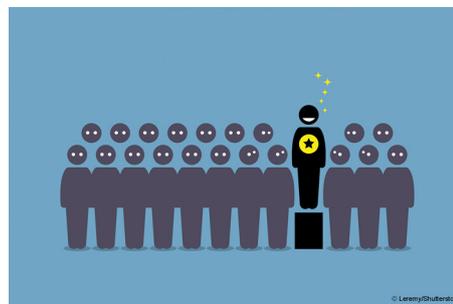
### Inside cover

See Hong Liu, Xiaowen Yu *et al.*, pp. 7392–7425. Image reproduced by permission of Hong Liu and Xiaowen Yu from *Chem. Soc. Rev.*, 2024, 53, 7392.

## EDITORIAL

7308

### Outstanding Reviewers for *Chemical Society Reviews* in 2023

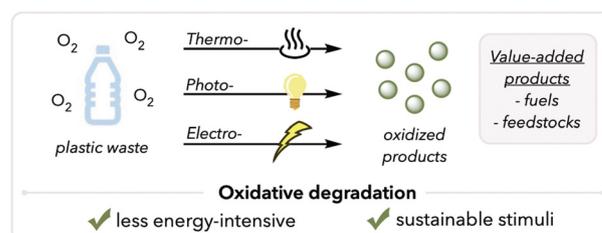


## TUTORIAL REVIEWS

7309

### Recent advances in oxidative degradation of plastics

Sewon Oh and Erin E. Stache\*



# Royal Society of Chemistry approved training courses

Explore your options.  
Develop your skills.  
Discover learning  
that suits you.

**Courses in the classroom,  
the lab, or online**

Find something for every  
stage of your professional  
development. Search our  
database by:

- subject area
- location
- event type
- skill level

Members **get at least 10% off**

Visit [rsc.li/cpd-training](https://rsc.li/cpd-training)



**SAVE  
10%**

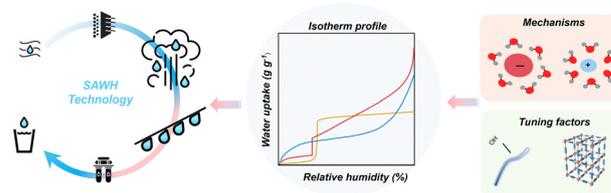


## TUTORIAL REVIEWS

7328

## Chemistries and materials for atmospheric water harvesting

Chuxin Lei, Weixin Guan, Yaxuan Zhao and Guihua Yu\*

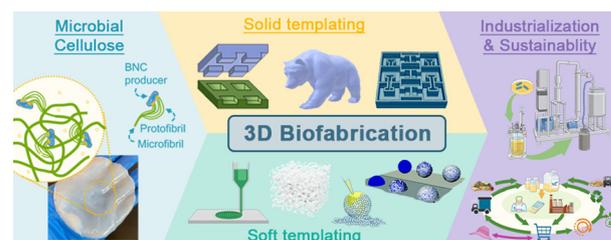


## REVIEW ARTICLES

7363

## Biofabrication with microbial cellulose: from bioadaptive designs to living materials

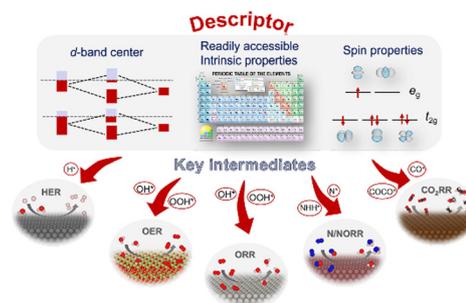
Yi Lu,\* Marina Mehling, Siqi Huan,\* Long Bai\* and Orlando J. Rojas\*



7392

## Advancing electrocatalytic reactions through mapping key intermediates to active sites via descriptors

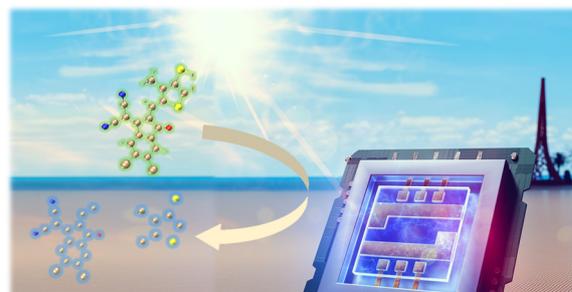
Xiaowen Sun, Rafael B. Araujo, Egon Campos dos Santos, Yuanhua Sang, Hong Liu\* and Xiaowen Yu\*



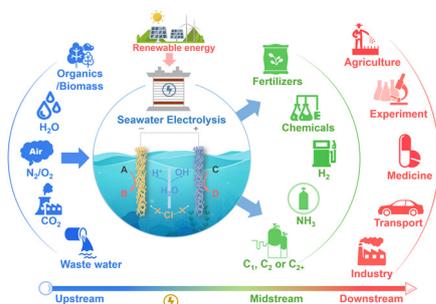
7426

## Understanding photochemical degradation mechanisms in photoactive layer materials for organic solar cells

Jianhua Han,\* Han Xu, Sri Harish Kumar Paleti, Anirudh Sharma and Derya Baran\*



7455



### Seawater electrolysis for fuels and chemicals production: fundamentals, achievements, and perspectives

Lin Chen, Chang Yu,\* Junting Dong, Yingnan Han, Hongling Huang, Wenbin Li, Yafang Zhang, Xinyi Tan and Jieshan Qiu\*

7489



### Renewable biomass-based aerogels: from structural design to functional regulation

Linfeng Chen, Xiaoxiao Yu, Mengyue Gao, Chengjian Xu, Junyan Zhang, Xinhai Zhang,\* Meifang Zhu and Yanhua Cheng\*

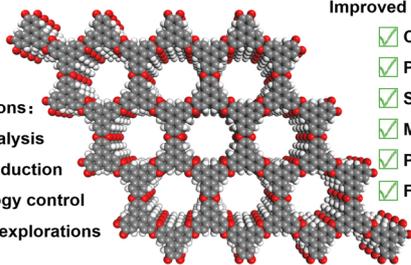
7531

### Catalyst and auxiliaries development in the synthesis of COFs

Improved properties:

- Crystallinity
- Porosity
- Stability
- Morphology
- Processability
- Functionality

Applications:  
Photocatalysis  
Scale production  
Morphology control  
Methods explorations

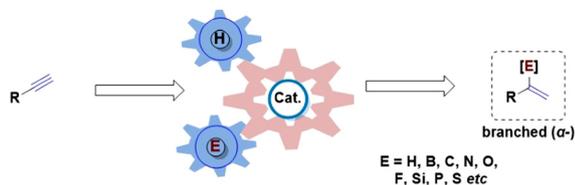


### The development of catalysts and auxiliaries for the synthesis of covalent organic frameworks

Wei Zhao, Qiang Zhu, Xiaofeng Wu and Dan Zhao\*

7566

Metal-catalyzed Markovnikov-type selective hydrofunctionalization of terminal alkynes:



### Metal-catalyzed Markovnikov-type selective hydrofunctionalization of terminal alkynes

Jieping Chen, Wen-Ting Wei, Zhuocheng Li and Zhan Lu\*



7590

## Fluorescent probes for targeting the Golgi apparatus: design strategies and applications

Silin Xu, Kai-Cheng Yan, Zhi-Hong Xu,\* Yuan Wang\* and Tony D. James\*

