

# Chem Soc Rev

Chemical Society Reviews

[rsc.li/chem-soc-rev](https://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(7) 3209-3632 (2024)



### Cover

See Jianhua Zou, Zhengwei Mao, Xiaoyuan Chen et al., pp. 3224–3252. Image reproduced by permission of Jianhua Zou, Zhengwei Mao and Xiaoyuan Chen from *Chem. Soc. Rev.*, 2024, 53, 3224.



### Inside cover

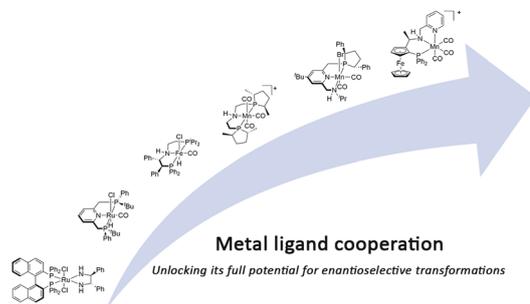
See Yufen Xiao, Jianzhong Du et al., pp. 3273–3301. Image reproduced by permission of Jianzhong Du from *Chem. Soc. Rev.*, 2024, 53, 3273.

## VIEWPOINT

3216

### Unlocking the potential of metal ligand cooperation for enantioselective transformations

Tizian-Frank Ramspoth, Johanan Kootstra and Syuzanna R. Harutyunyan\*

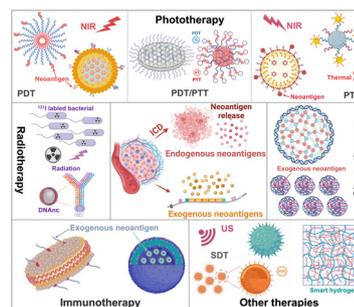


## TUTORIAL REVIEWS

3224

### Advancing nanotechnology for neoantigen-based cancer theranostics

Jianhua Zou,\* Yu Zhang, Yuanbo Pan, Zhengwei Mao\* and Xiaoyuan Chen\*



# RSC Advances

At the heart of open access for  
the global chemistry community

## Editor-in-chief

Russell J Cox

Leibniz Universität Hannover, Germany

## We stand for:



**Breadth** We publish work in all areas of chemistry and reach a global readership



**Affordability** Low APCs, discounts and waivers make publishing open access achievable and sustainable



**Quality** Research to advance the chemical sciences undergoes rigorous peer review for a trusted, society-run journal



**Community** Led by active researchers, we publish quality work from scientists at every career stage, and all countries

Submit your work now

[rsc.li/rsc-advances](https://rsc.li/rsc-advances)

@RSC\_Adv

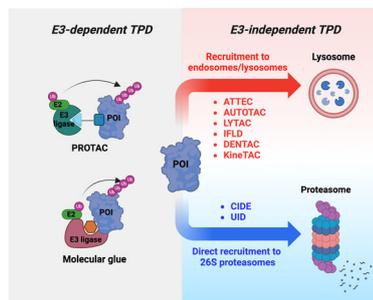


## TUTORIAL REVIEWS

3253

## Targeted protein degradation directly engaging lysosomes or proteasomes

Jiseong Kim, Insuk Byun, Do Young Kim, Hyunhi Joh, Hak Joong Kim\* and Min Jae Lee\*

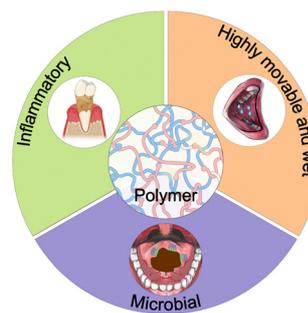


## REVIEW ARTICLES

3273

## Emerging polymeric materials for treatment of oral diseases: design strategy towards a unique oral environment

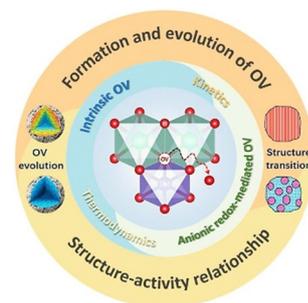
Bo Jia, Beibei Zhang, Jianhua Li, Jinlong Qin, Yisheng Huang, Mingshu Huang, Yue Ming, Jingjing Jiang, Ran Chen, Yufen Xiao\* and Jianzhong Du\*



3302

## Oxygen vacancy chemistry in oxide cathodes

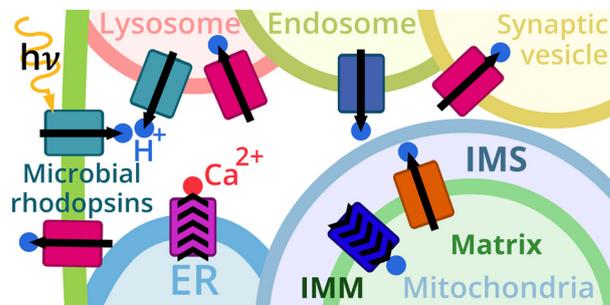
Yu-Han Zhang, Shu Zhang, Naifang Hu, Yuehui Liu, Jun Ma,\* Pengxian Han, Zhiwei Hu,\* Xiaogang Wang\* and Guanglei Cui\*



3327

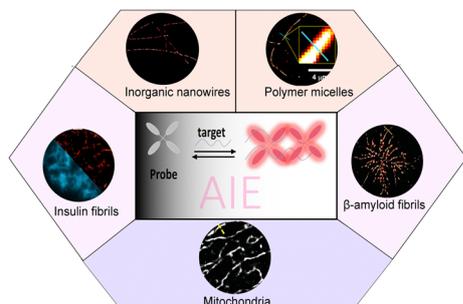
## Intracellular microbial rhodopsin-based optogenetics to control metabolism and cell signaling

Anastasiia D. Vlasova, Sjarhei M. Bukhalovich, Diana F. Bagaeva, Aleksandra P. Polyakova, Nikolay S. Ilyinsky, Semen V. Nesterov, Fedor M. Tsybrov, Andrey O. Bogorodskiy, Egor V. Zinovev, Anatolii E. Mikhailov, Alexey V. Vlasov, Alexander I. Kuklin, Valentin I. Borshchevskiy, Ernst Bamberg, Vladimir N. Uversky\* and Valentin I. Gordeliy\*



## REVIEW ARTICLES

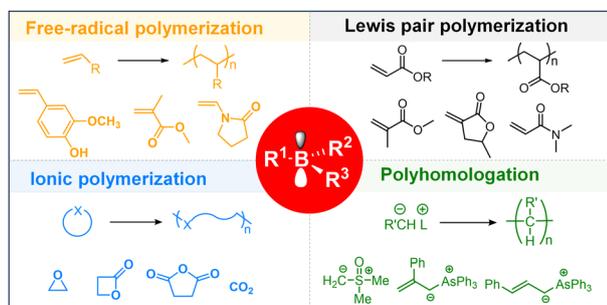
3350



## Recent advances in super-resolution optical imaging based on aggregation-induced emission

Feng-Yu Zhu, Li-Jun Mei, Rui Tian, Chong Li,\*  
Ya-Long Wang, Shi-Li Xiang, Ming-Qiang Zhu\* and  
Ben Zhong Tang\*

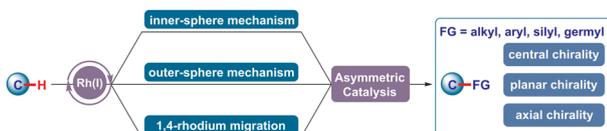
3384



## Organoboron-mediated polymerizations

Yao-Yao Zhang, Guan-Wen Yang, Chenjie Lu,  
Xiao-Feng Zhu, Yuhui Wang and Guang-Peng Wu\*

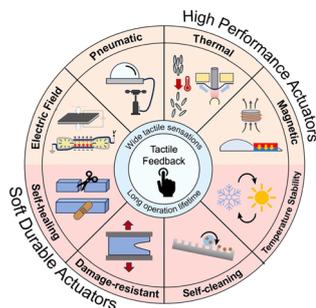
3457



## Recent advances in Rh(I)-catalyzed enantioselective C–H functionalization

Yue Zhang, Jing-Jing Zhang, Lujun Lou, Ruofan Lin,  
Nicolai Cramer,\* Shou-Guo Wang\* and Zhen Chen\*

3485



## Towards high performance and durable soft tactile actuators

Matthew Wei Ming Tan, Hui Wang, Dace Gao,  
Peiwen Huang and Pooi See Lee\*

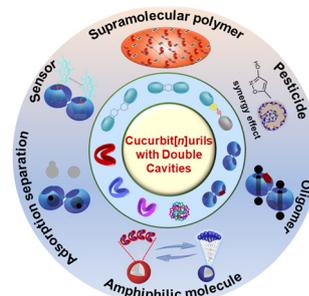


## REVIEW ARTICLES

3536

**Double-cavity cucurbiturils: synthesis, structures, properties, and applications**

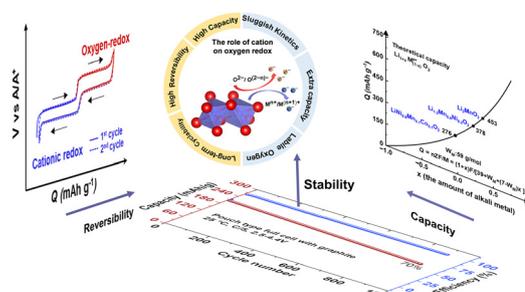
Qing Li,\* Zhengwei Yu, Carl Redshaw, Xin Xiao\* and Zhu Tao\*



3561

**Correlating concerted cations with oxygen redox in rechargeable batteries**

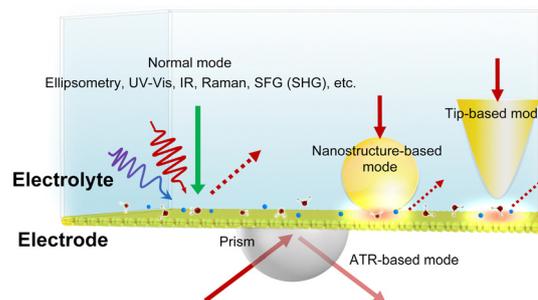
Shiqi Wang, Lifan Wang, David Sandoval, Tongchao Liu,\* Chun Zhan\* and Khalil Amine\*



3579

**Sixty years of electrochemical optical spectroscopy: a retrospective**

Chao-Yu Li and Zhong-Qun Tian\*



3606

**Thermally activated structural phase transitions and processes in metal–organic frameworks**

Celia Castillo-Blas,\* Ashleigh M. Chester, David A. Keen and Thomas D. Bennett

