

# RSC Mechanochemistry

rsc.li/RSCMechanochem

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 2976-8683 CODEN RMSED4 2(3) 325–490 (2025)



**Cover**  
See Koji Kubota, Hajime Ito *et al.*, pp. 389–393. Image reproduced by permission of Hajime Ito from *RSC Mechanochem.*, 2025, 2, 389.



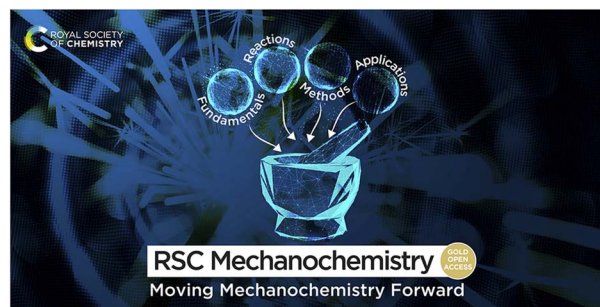
**Inside cover**  
See Xuhai Pan, Madeleine J. Bussemaker *et al.*, pp. 399–418. Image reproduced by permission of Yucheng Zhu *et al.* and Yanqing Zhu (co-creators of the image) from *RSC Mechanochem.*, 2025, 2, 399.

## EDITORIAL

333

### Moving Mechanochemistry Forward: Mechanochemistry and the non-covalent bond

Adam A. L. Michalchuk and Tomislav Friščić



## REVIEWS

336

### Access to enzyme@porous organic framework biocomposites based on mechanochemical synthesis

Qing Chen, Zhi-Wei Li,\* Siming Huang, Guosheng Chen\* and Gangfeng Ouyang



# 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)



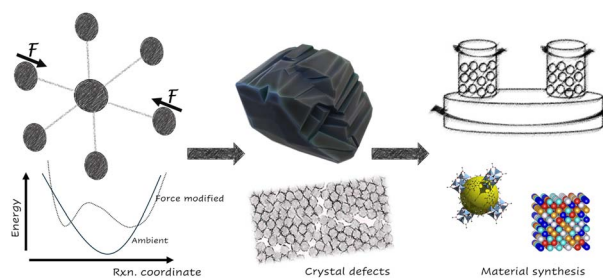
**SAVE  
10%**

## REVIEWS

351

### Reassessing mechanochemical processes in polyatomic systems for smart fabrication of nanocomposites

Mamoru Senna\* and Adam A. L. Michalchuk



## PERSPECTIVE

370

### Conquering the impossible: mechanochemistry as a tool for tackling coordination chemistry challenges

Huanxin Zhang, Nathan Davison\* and Erli Lu\*

Mechanochemistry

#### Coordination Chemistry Challenges

- Solvent-induced decomposition
- Insoluble reactant
- Unfavourable solvent coordination
- And more.....

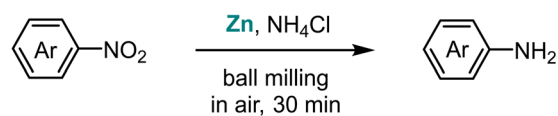
## COMMUNICATIONS

389

### Solvent-free zinc-mediated Béchamp reduction using mechanochemistry

Koji Kubota,\* Asahi Nagao and Hajime Ito\*

#### First mechanochemical protocol for Béchamp reduction

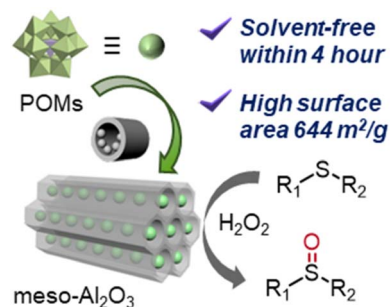


typically <30 min  
solvent-free and air-tolerant

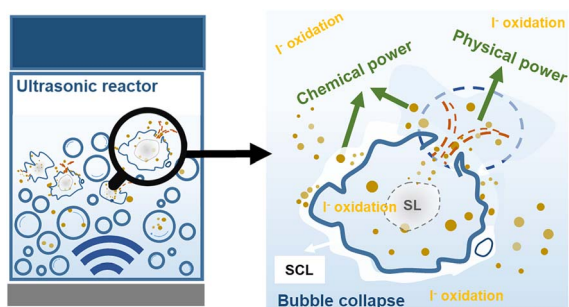
394

### Mechanochemical templated synthesis of mesoporous alumina-supported polyoxometalate catalysts toward selective oxidation of sulfides

Kang Xia, Shengtai Hou, Qiang Niu, Kosuke Suzuki and Pengfei Zhang\*



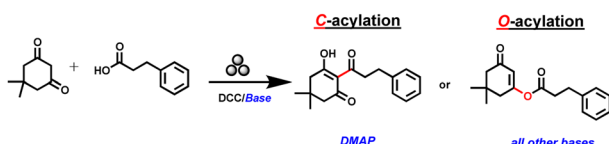
399



### Correlation of sonochemical activities measured via dosimetry and an area-selective analysis of sono(chemi)luminescence

Yucheng Zhu, Xueliang Zhu, Xuhai Pan,\* Lian X. Liu and Madeleine J. Bussemaker\*

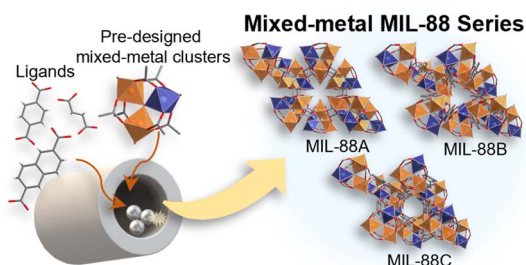
419



### Chemoselectivity switch by mechanochemistry in the base-catalysed dione-acylation

Sally Nijem, Alexander Kaushansky, Svetlana Pucovski, Elisa Ivry, Evelina Colacino, Ivan Halasz and Charles E. Diesendruck\*

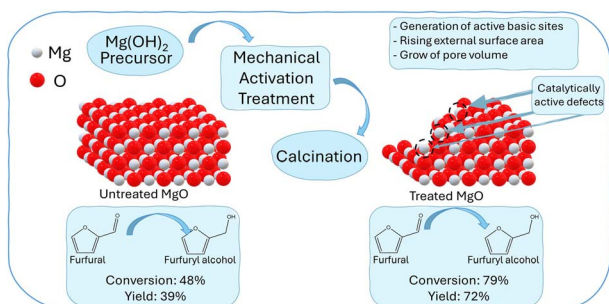
426



### A mechanochemical synthetic strategy of isorecticular flexible metal–organic frameworks with pre-designed mixed metal clusters

Hong Kyu Lee and Hoi Ri Moon\*

432



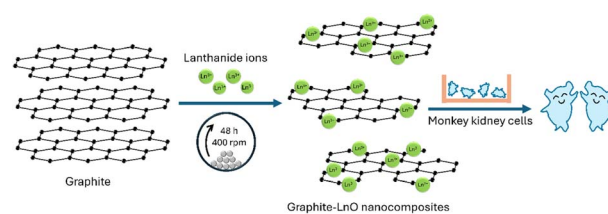
### Catalytic transfer hydrogenation of furfural using mechanically activated MgO as catalyst

Antonio Manuel Pérez-Merchán, Benjamín Torres-Olea, Marcella Scala, Nikolaos Dimitratos, Irene Malpartida, Cristina García-Sancho, Josefa M. Mérida-Robles, Pedro Maireles-Torres, Ramón Moreno-Tost and Juan Antonio Cecilia\*

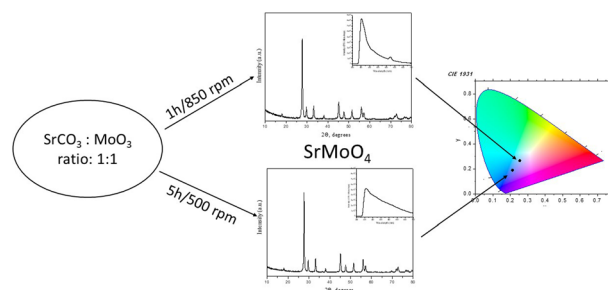


## PAPERS

443

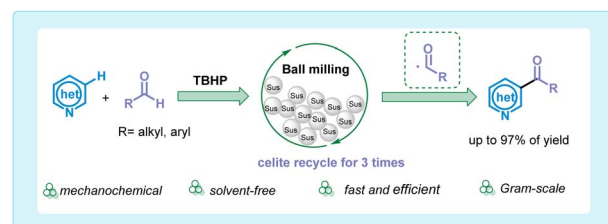
**Green mechanochemical fabrication of graphite-lanthanide oxide nanocomposites**Diego A. Acevedo-Guzmán,<sup>\*</sup> Brian Monroy-Torres, Petra Rudolf, Vladimir A. Basiuk and Elena V. Basiuk<sup>\*</sup>

459

**Direct mechanochemical synthesis of SrMoO<sub>4</sub>: structural and luminescence properties**Maria Gancheva,<sup>\*</sup> Reni Iordanova, Georgi Avdeev, Iskra Piroeva and Petar Ivanov

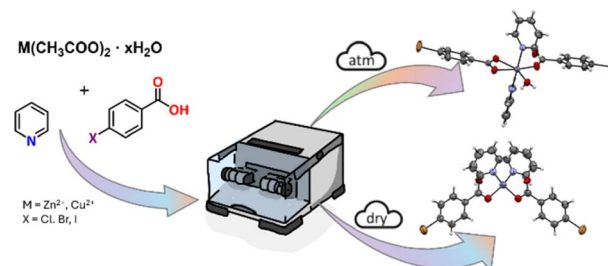
## COMMUNICATIONS

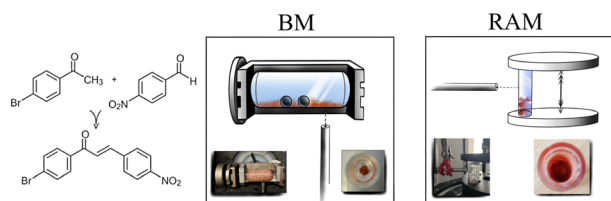
468

**Stainless-steel-initiated acylation of quinoxalin-2(1H)-ones with aldehydes under mechanochemical conditions**Diandian Wei, Zongwei Li, Heng Li and Bingxin Yuan<sup>\*</sup>

## PAPERS

475

**Comparison between mechanochemical and solution synthesis of Zn and Cu complexes containing pyridine and p-halogen substituted benzoates**Giorgio Cagossi, Paolo P. Mazzeo, Alessia Bacchi and Paolo Pelagatti<sup>\*</sup>



### *In situ* Raman spectroscopy for comparing ball milling and resonant acoustic mixing in organic mechanochemistry

Leonarda Vugrin, Christos Chatzigiannis, Evelina Colacino\* and Ivan Halasz\*

