

# RSC Mechanochemistry

rsc.li/RSCMechanochem

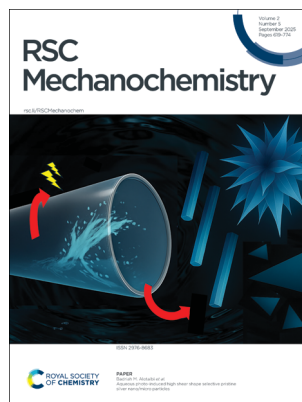
The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 2976-8683 CODEN RMSED4 2(5) 619–774 (2025)



**Cover**  
See Takashi Shirai *et al.*, pp. 641–652. Image reproduced by permission of Takashi Shirai from *RSC Mechanochem.*, 2025, 2, 641.



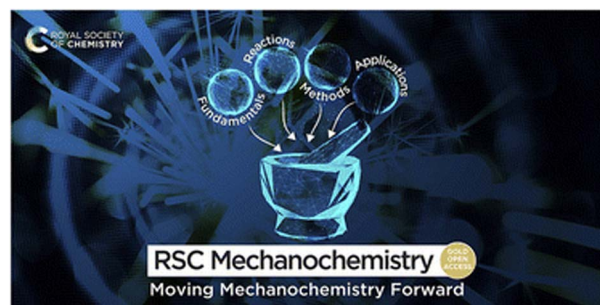
**Inside cover**  
See Badriah M. Alotaibi *et al.*, pp. 653–661. Image reproduced by permission of Badriah M. Alotaibi and Colin L. Raston from *RSC Mechanochem.*, 2025, 2, 653.

## EDITORIAL

627

### Moving mechanochemistry forward: programming force-induced responses into macromolecular systems

Kerstin G. Blank\* and Robert Göstl\*

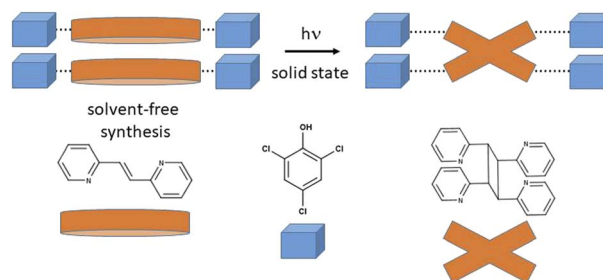


## COMMUNICATIONS

631

### Dry-vortex grinding facilitates a [2 + 2] cycloaddition reaction that triggers a cascade-like reaction that improves the yield under substoichiometric conditions

Angela A. Colmanet, Daniel K. Unruh and Ryan H. Groeneman\*



# 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)

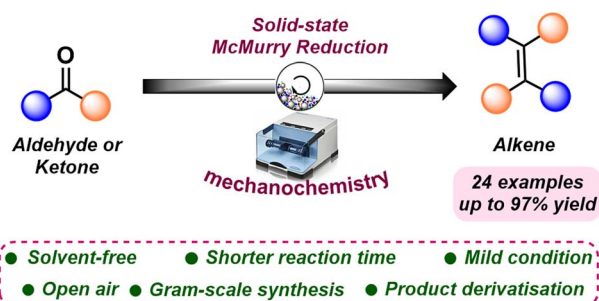


**SAVE  
10%**

636

**Mechanochemical McMurry reaction**

Sayan K. Jana, Sakshi Ajay Shirsath,  
Debjyoti Bhattacharjee, Pramod Kumar and Biplab Maji\*

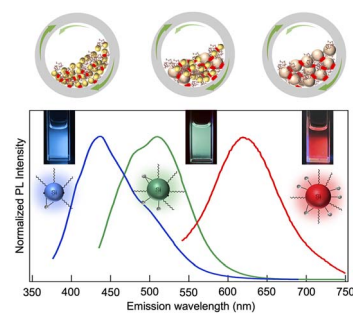


## PAPERS

641

**Photoluminescence evolution of functional silicon quantum dots assembled via a sustainable mechanochemical process**

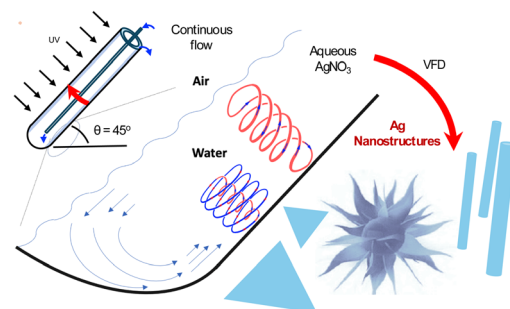
Yuping Xu, Yunzi Xin and Takashi Shirai\*



653

**Aqueous photo-induced high shear shape selective pristine silver nano/micro particles**

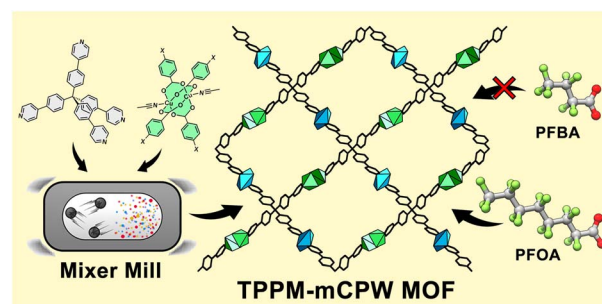
Badriah M. Alotaibi, Chengyi Liu, Xianjue Chen  
and Colin L. Raston\*



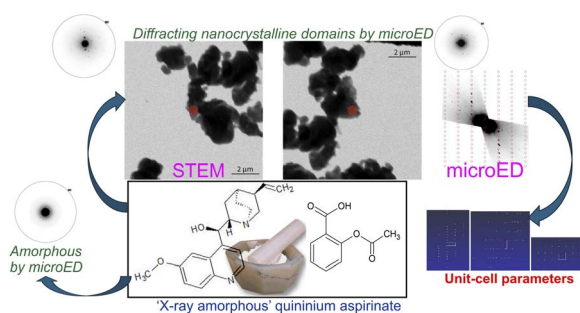
662

**Fluorination of mechanochemically synthesized metal-organic frameworks for PFAS adsorption in water**

Danilo Marchetti, Enrico Dalcanale, Roberta Pinalli,  
Mauro Gemmi, Alessandro Pedrini\* and Chiara Massera\*



670



### Amorphous quininium aspirinate from neat mechanochemistry: diffracting nanocrystalline domains and quick recrystallization upon exposure to solvent vapours

Silvina Pagola,<sup>\*</sup> James Howard, Johannes Merkelbach and Danny Stam

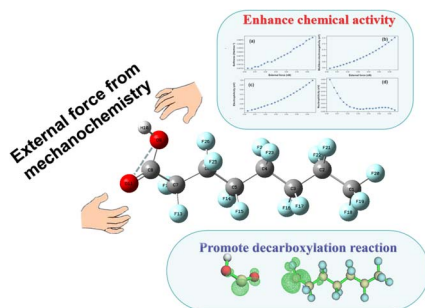
680



### Mechanochemistry assisted aqueous two-phase extraction: an efficient technique to extract high-purity juglone from the bark of *Juglans mandshurica*

Shuang Wei, Xinbiao Zhou and Jun Xi<sup>\*</sup>

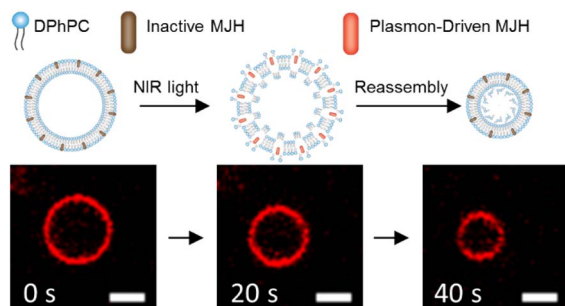
692



### How external forces affect the degradation properties of perfluorooctanoic acid in mechanochemical degradation: a DFT study

Chuan Wang,<sup>\*</sup> Cheng Yang, Jie Wu, Ziqiu Wang and Kun Yang

706



### Mechanism of plasmon-driven molecular jackhammers in mechanical opening and disassembly of membranes

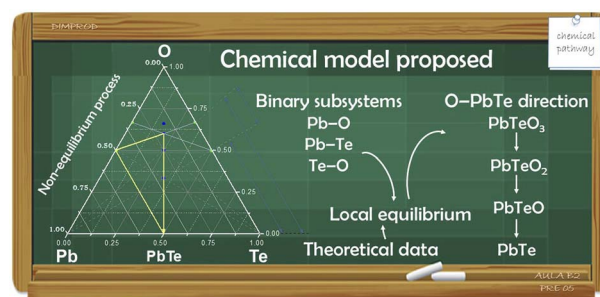
Ciceron Ayala-Orozco,<sup>\*</sup> Vardan Vardanyan, Katherine Lopez-Jaime, Zicheng Wang, Jorge M. Seminario,<sup>\*</sup> Anatoly B. Kolomeisky<sup>\*</sup> and James M. Tour<sup>\*</sup>



723

## Chemical models to map the transformation from precursors to semiconductor materials at non-equilibrium conditions

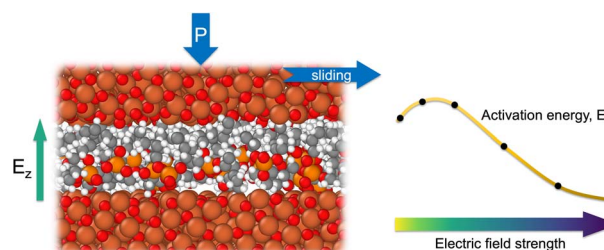
Hugo Rojas-Chávez\*



732

## Mechanochemistry of phosphate esters with external electric fields

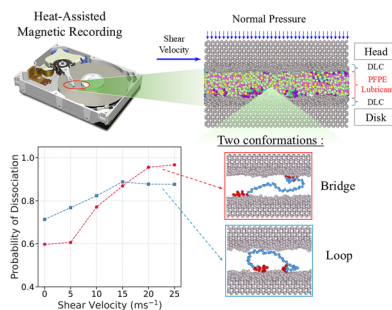
Zhaoran Zhu\* and James P. Ewen\*



745

## ReaxFF molecular dynamics study of mechanochemical degradation of PFPE lubricants on DLC in heat-assisted magnetic recording

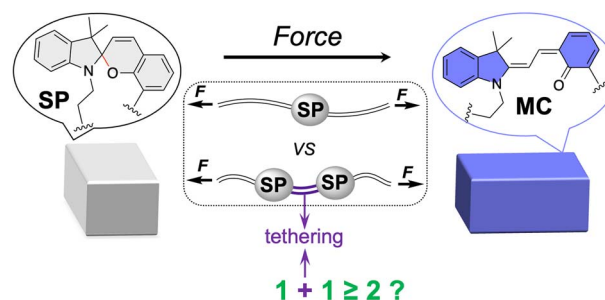
Himanshu Shekhar, Shota Uchiyama, Yuxi Song, Hedong Zhang,\* Kenji Fukuzawa, Shintaro Itoh and Naoki Azuma



756

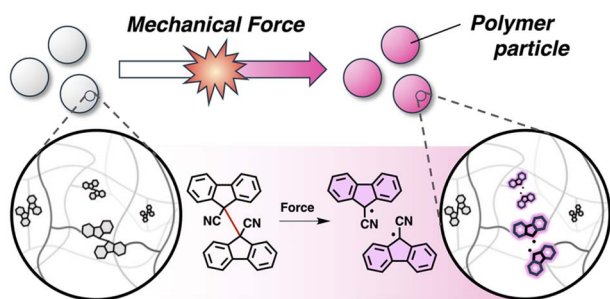
## Amplification of spiropyran mechanophore activation in bulk polymers through a tethering strategy

Sanjit Narendran, Zhenghao Zhai and Yangju Lin\*



## PAPERS

763



### Mechanochromic polymer particles crosslinked by a radical-type mechanochromophore

Kengo Ogasawara, Daisuke Kuromiya, Takuma Watabe, Akira Takahashi, Daisuke Aoki and Hideyuki Otsuka\*

## CORRECTIONS

770

### Correction: Mechanochemical synthesis of eucairite CuAgSe and investigation of physicochemical and transport properties

Dáša Drenčaková, Marcela Achimovičová,\* Matej Baláž, Jiří Navrátil, Erika Tóthová, Maksym Lisnichuk, Jaroslav Briančin, Viktor Puchý and Tomáš Plecháček

771

### Correction: Utilizing an attritor mill for solvent-free mechanochemical synthesis of *rac*-ibuprofen:nicotinamide co-crystals

Sarah Triller, Frederik Winkelmann, Jan-Hendrik Schöbel and Michael Felderhoff\*

772

### Correction: Mechanochemical kilogram-scale synthesis of *rac*-ibuprofen:nicotinamide co-crystals using a drum mill

Jan-Hendrik Schöbel, Frederik Winkelmann, Joel Bicker and Michael Felderhoff\*

