

# RSC Mechatnochemistry

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.

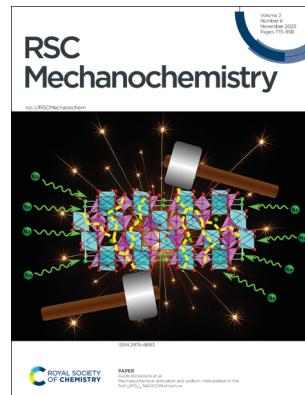
## IN THIS ISSUE

ISSN 2976-8683 CODEN RMSED4 2(6) 775–938 (2025)



### Cover

See Hironao Sajiki, Takashi Ikawa et al., pp. 809–812. Image reproduced by permission of Takashi Ikawa from *RSC Mechatnochem.*, 2025, 2, 809.



### Inside cover

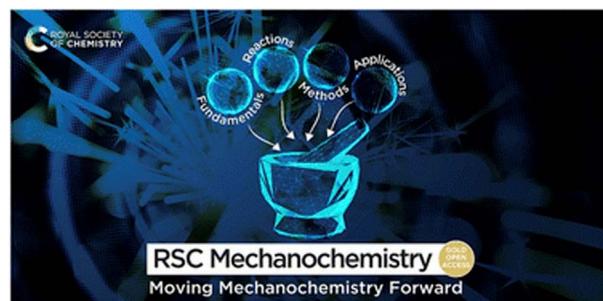
See Guido Kickelbick et al., pp. 813–825. Image reproduced by permission of Guido Kickelbick from *RSC Mechatnochem.*, 2025, 2, 813. Cover image partially generated with AI.

## EDITORIAL

783

### Moving mechanochemistry forward: mechanochemical polymer synthesis and recycling

Jeung Gon Kim

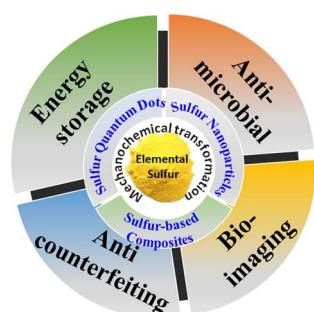


## REVIEW

786

### Mechanochemical conversion of elemental sulfur into functional sulfur nanomaterials for promising applications

Hammad Hasan, Farwa Arshad and Md Palashuddin Sk\*



# 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](http://rsc.li/cpd-training)

**SAVE  
10%**

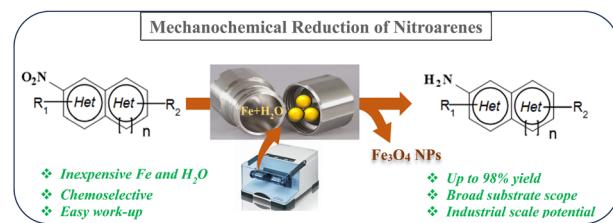


## COMMUNICATION

802

**Iron–water mediated chemoselective reduction of nitroarenes in a ball mill: a highly efficient and sustainable approach**

Vir Bahadur, Amol S. Dehade, Dharmendra Das, Prashantha Kamath, Sitaram Pal, Bhanu Manjunath and Partha P. Mukhopadhyay\*

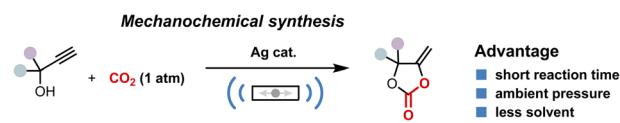


## PAPERS

809

**Synthesis of cyclic carbonates *via* silver-catalysed fixation of  $CO_2$  to propargyl alcohols under mechanochemical conditions**

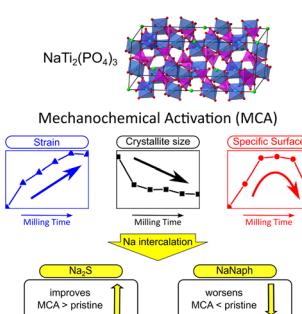
Naohito Tomita, Hironao Sajiki\* and Takashi Ikawa\*



813

**Mechanochemical activation and sodium intercalation in the  $NaTi_2(PO_4)_3$  NASICON structure**

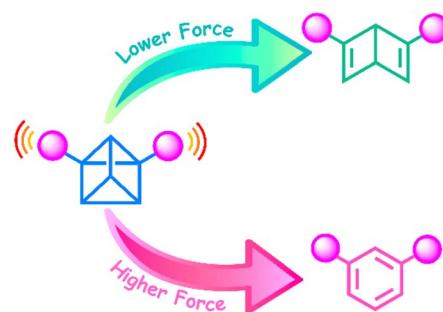
Tobias Benjamin Straub, Elias C. J. Gießelmann and Guido Kickelbick\*



826

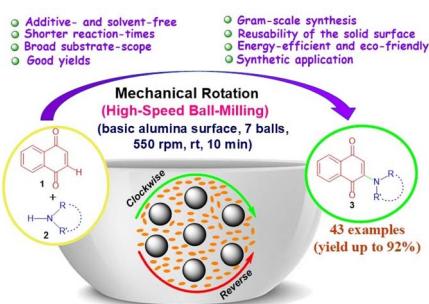
**Force governs product diversity in the mechanochemical reactivity of triprismane**

Ankita Das, Chandalekha Hajra and Ayan Datta\*



## PAPERS

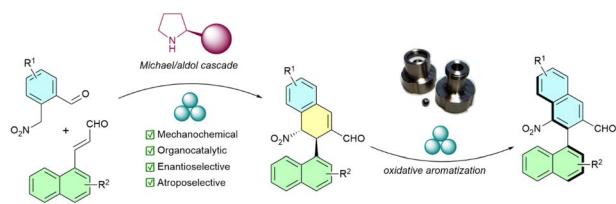
833



### Mechanochemistry-driven solvent-free synthesis of biologically relevant diversely substituted 2-amino-1,4-naphthoquinones

Koushik Pal, Pintu Karmakar and Goutam Brahmachari\*

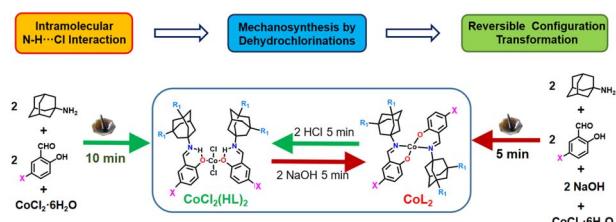
846



### Atroposelective organocatalytic synthesis of 1,2'-binaphthalene-3'-carbaldehydes under mechanochemical conditions

Henrich Szabados and Radovan Šebesta\*

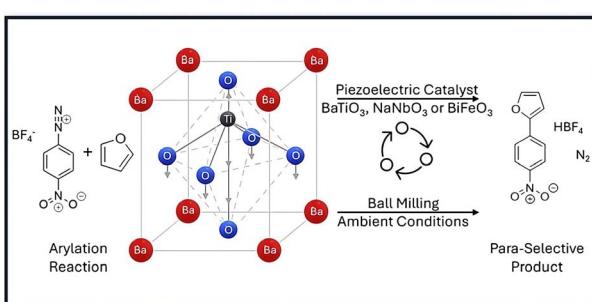
853



### Mechanochemical one-pot synthesis and solid-state transformation of cobalt(II) Schiff base complexes: a green route to tailored coordination architecture

Hongguang Chen, Zhenwei Guo, Daming Feng,\* Xudong Jin\* and Fang Guo\*

864



### Structure–performance relationships of mechanochemically synthesized piezoelectric catalysts BaTiO<sub>3</sub>, NaNbO<sub>3</sub> and BiFeO<sub>3</sub>

Erin V. Phillips, Van Son Nguyen, Marta Hatzell and Carsten Sievers\*



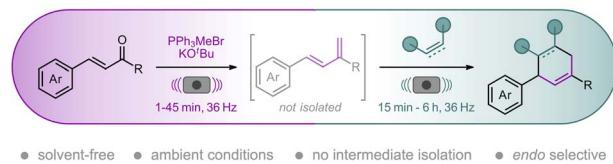
## PAPERS

879

**Mechanically induced sequential one-pot Wittig olefination–Diels–Alder reaction: a solvent-free approach to complex bicyclic scaffolds**

Nina Biedermann and Michael Schnürch\*

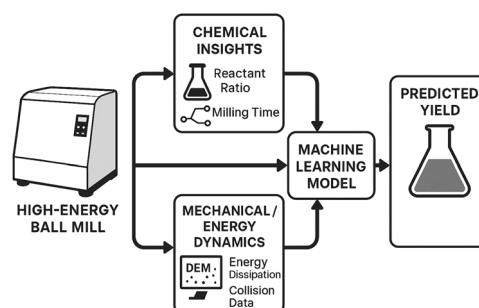
**Mechanically Induced One-Pot Wittig Olefination–Diels–Alder Reaction**



889

**Linking mechanics and chemistry: machine learning for yield prediction in  $\text{NaBH}_4$  mechanochemical regeneration**

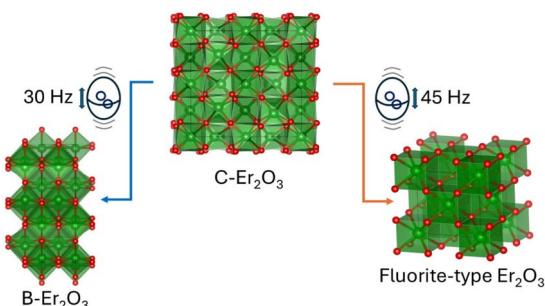
Santiago Garrido Nuñez,\* Dingena L. Schott and Johan T. Padding



901

**X-ray diffraction study of the polymorphism in  $\text{Er}_2\text{O}_3$  driven by ball milling**

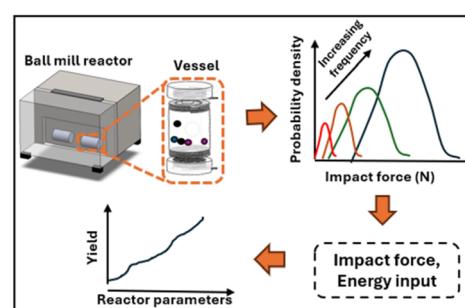
Ana Maria Constantin, Francesco Mele, Daniele Alessandro Cauzzi, Raimondo Maggi, Elena Villa, Alessandro Cerveri and Lara Righi\*



911

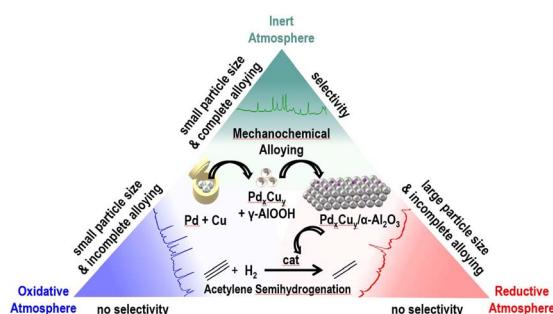
**Experimental quantification of impact force and energy for mechanical activation in vibratory ball mills**

Emmanuel Nwoye, Kathleen Floyd, James Batteas\* and Jonathan Felts\*



## PAPERS

923



## Exploring milling atmosphere effects in mechanochemical synthesis of Pd–Cu supported catalysts for the semihydrogenation of acetylene in equimolar ethylene mixtures

Rohini Khobragade, Jonathan M. Mauß, Nguyen Khang Tran and Ferdi Schüth\*

