

# Polymer Chemistry

The home for the most innovative and exciting polymer chemistry, with an emphasis on polymer synthesis and applications thereof

[rsc.li/polymers](https://rsc.li/polymers)

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 1759-9962 CODEN PCOHC2 15(13) 1247-1360 (2024)



### Cover

See Lixia Ren *et al.*,  
pp. 1253–1260.

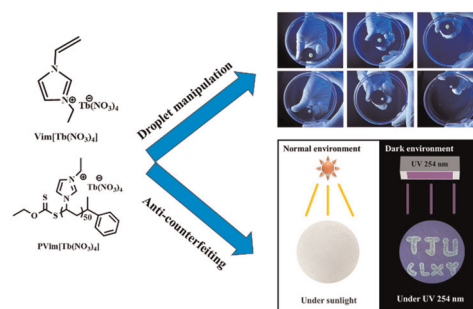
Image reproduced by  
permission of Lixia Ren from  
*Polym. Chem.*, 2024, **15**,  
1253.

## PAPERS

1253

### Terbium based (poly)ionic liquids for anti-counterfeiting and droplet manipulation

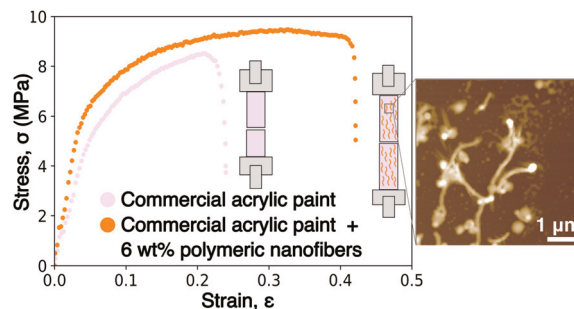
Xinhang Cui, Kongying Zhu, Xiaoyan Yuan, Ziming Liu and Lixia Ren\*



1261

### Tensile benefits of nanofibers in commercial paint films

Geosmin Turpin, Duc Nguyen, Priya Subramanian, Tim Davey, Siew Fong Cheong, Gregory G. Warr, Chiara Neto\* and Brian Hawkett\*



# Advance your career in science

with professional recognition that showcases  
your **experience, expertise and dedication**

## Stand out from the crowd

Prove your commitment  
to attaining excellence in  
your field

## Gain the recognition you deserve

Achieve a professional  
qualification that inspires  
confidence and trust

## Unlock your career potential

Apply for our professional  
registers (RSci, RSciTech)  
or chartered status  
(CChem, CSci, CEnv)

## Apply now

[rsc.li/professional-development](https://rsc.li/professional-development)

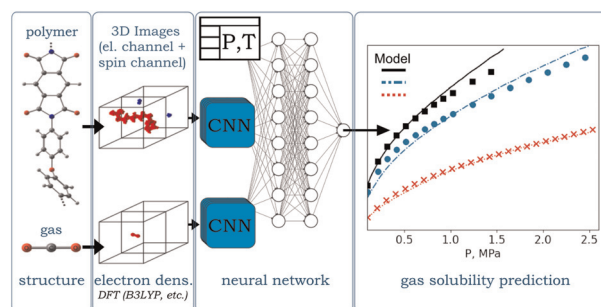


## PAPERS

1273

# Predicting the solubility of gases, vapors, and supercritical fluids in amorphous polymers from electron density using convolutional neural networks

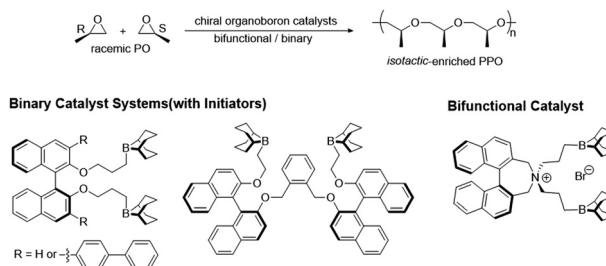
Oleg I. Gromov



1297

# Stereoselective polymerization of epoxides using organoboron catalysts

Yu-Bo Fang, Huan Qi, Bo Li, Guan-Wen Yang\* and Guang-Peng Wu\*



1303

# Towards the universal use of DOSY as a molar mass characterization tool: temperature dependence investigations and a software tool to process diffusion coefficients

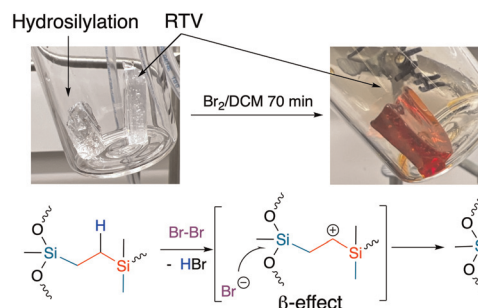
Igor W. F. Silva, Alasdair McKay, Anna Sokolova and Tanja Junkers\*



1310

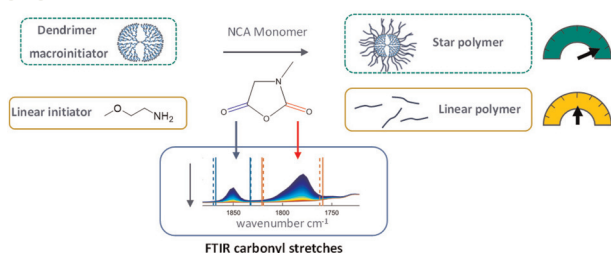
# Selective oxidative devulcanization of hydrosilylation-cured silicone elastomers: enhanced circularity

Muhammad Ebad Noman, Massandje K. Bayo, Yang Chen and Michael A. Brook\*



## PAPERS

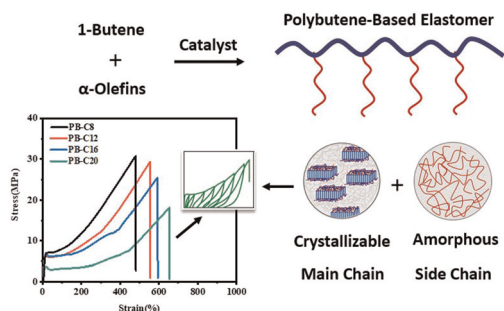
1318



### Enhanced rate of sarcosine *N*-carboxyanhydride polymerisation from a lysine dendrimer macroinitiator driven by neighbouring H-bonding effects

Richard M. England,\* Qing Yu, Chloe Westley, Carl J. Mallia, Kevin E. Treacher, Per-Ola Norrby and Marianne B. Ashford

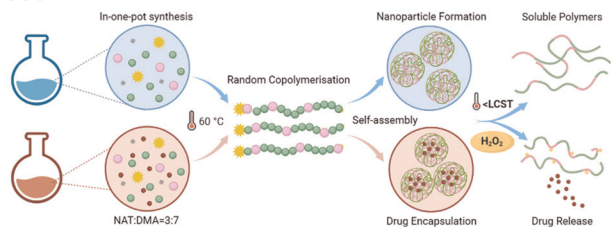
1331



### Preparation of polybutene-based thermoplastic elastomers through the copolymerization of 1-butene with higher $\alpha$ -olefins

Chao Liu, Fei Wang, Yuze Kang, Xiaohui Mao, Li Pan,\* Zhe Ma and Yuesheng Li\*

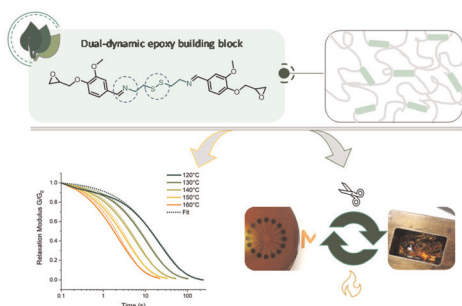
1339



### Thermal- and oxidation dual-responsive random copolymer self-assembly of nanostructures

Lan Lou, Shiling Zhang, Al-Hassan S. Mahdy, Meng Wang, Kai Li,\* Qi Xing\* and Jin Geng\*

1347



### Vanillin-based dual dynamic epoxy building block: a promising accelerator for disulfide vitrimers

Solène Guggari, Fiona Magliozzi, Samuel Malburet, Alain Graillet, Mathias Destarac and Marc Guerre\*

