

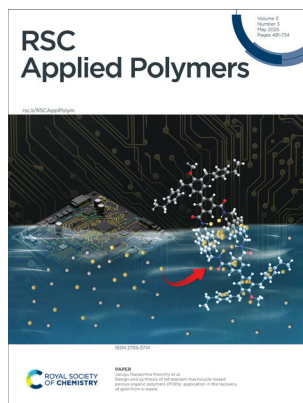
IN THIS ISSUE

eISSN 2755-371X CODEN RAPSBD 3(3) 491–734 (2025)



Cover
See Achalkumar *et al.*,
pp. 499–531.

Image reproduced
by permission of
Muthukumar P.
from *RSC Appl. Polym.*,
2025, **3**, 499.



Inside cover
See Jarugu Narasimha
Moorthy *et al.*, pp. 603–612.

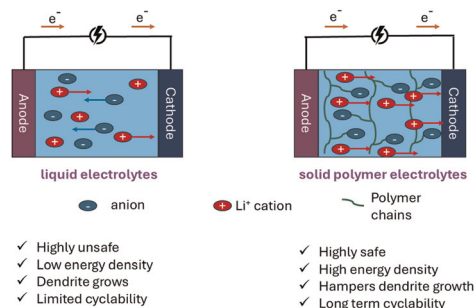
Image reproduced
by permission of
J. Narasimha Moorthy
from *RSC Appl. Polym.*,
2025, **3**, 603.

REVIEWS

499

Polymer electrolytes: evolution, challenges, and future directions for lithium-ion batteries

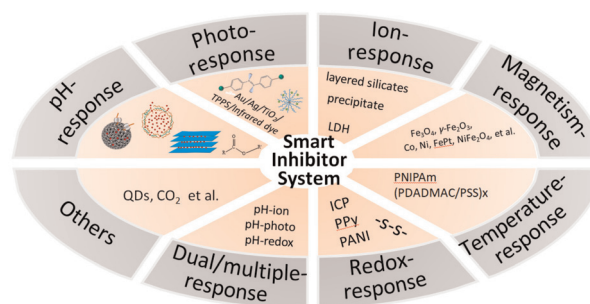
Ram Prasanth S., Varatharajan Prasannavenkadesan,
Vimal Katiyar and Ammathnadu Sudhakar Achalkumar*



532

Smart inhibitor systems towards anti-corrosion: design and applications

Danping Li, Ziwen Zhang, Bilegsaikhan Sukhbat,
Xuejie Wang, Xue Zhang, Jing Yan,* Junping Zhang,
Qiuyu Zhang, Yan Li, Hao Wang and Yi Yan*



**GOLD
OPEN
ACCESS**

EES Solar

**Exceptional research on solar
energy and photovoltaics**

Part of the EES family

**Join
in** | Publish with us
rsc.li/EESolar

Registered charity number: 207890

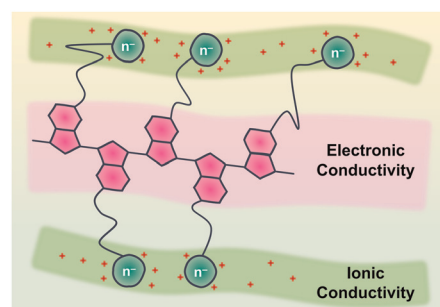


REVIEWS

549

Recent material development and applications of conjugated polyelectrolytes by leveraging electronic and ionic transport properties

Chibin Zhang, Liang Yao, Mingrui Pu* and Cheng Zhou*



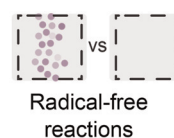
PERSPECTIVE

574

Advances in vat photopolymerization: early-career researchers shine light on a path forward

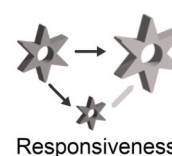
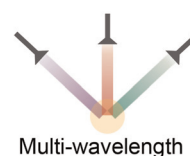
Abhishek P. Dhand,* Ren H. Bean, Viviane Chiaradia, Alex J. Comisso, Dalia Dranseike, Hayden E. Fowler, Julia M. Fraser, Holden Howard, Takashi Kaneko, Ji-Won Kim, Jason M. Kronenfeld, Keldy S. Mason, Connor J. O'Dea, Fred Pashley-Johnson, Dominique H. Porcincula, Maddison I. Segal, Siwei Yu and Max A. Saccone*

Novel Chemistries



Sustainable/bio-based resins

Novel Processes

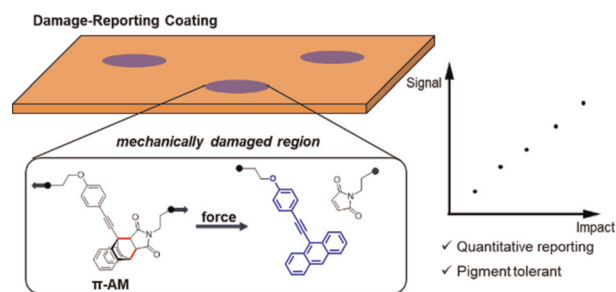


COMMUNICATIONS

592

Harnessing mechanochemical fluorescence toward autonomous damage-reporting coatings

Zeyu Wang, Junfeng Zhou, Zichen Ling, Qixin Zhou* and Junpeng Wang*



598

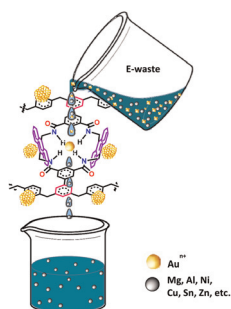
Sidechain engineering in poly(2,3-alkylthieno [3,4-*b*]pyrazine)s via GRIM polymerization: solubility, film formation, and device performance

Spencer J. Gilman, Nicolas C. Nicolaidis, Tomas J. Marsh, Paul C. Dastoor and Seth C. Rasmussen*

	PC ₆ TP	PEHTP
Lower bandgap	✓	✗
Better solubility	✗	✓
Better processibility	✗	✓
More crystalline	✓	✗
Better devices	✗	✓



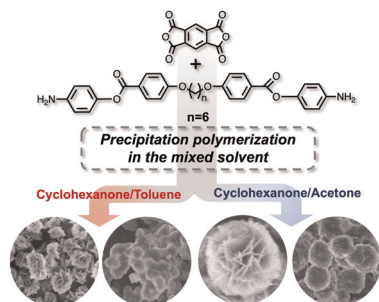
603



Design and synthesis of tetralactam macrocycle-based porous organic polymers (POPs): application in the recovery of gold from e-waste

Ashish Kumar, Gulshan Anjum and Jarugu Narasimha Moorthy*

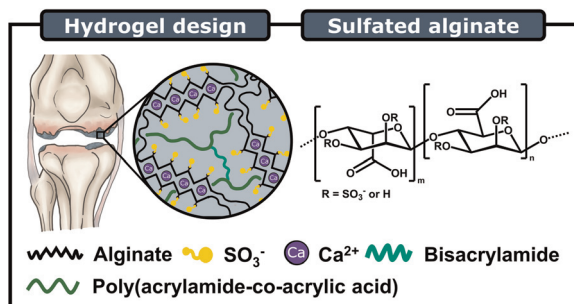
613



Self-assembly of semiaromatic poly(amic acid) into flower-like microparticles via one-step precipitation polymerization

Yuqian Chen, Ryohei Kikuchi, Kan Hatakeyama-Sato, Yuta Nabae* and Teruaki Hayakawa*

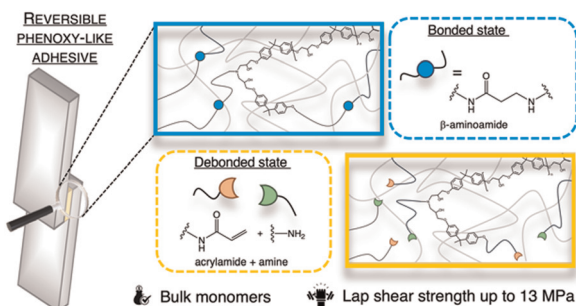
624



Effect of sulfation on a tough hybrid hydrogel network

Sander Driesen, Valentino Atella, Kristi Kiick, Louis M. Pitet* and Geert-Jan Graulus*

637



Debondable phenoxy-based structural adhesives with β -amino amide containing reversible crosslinkers

Francesca Portone, Loc Tan Nguyen, Roberta Pinalli, Alessandro Pedrini, Filip E. Du Prez* and Enrico Dalcanale*

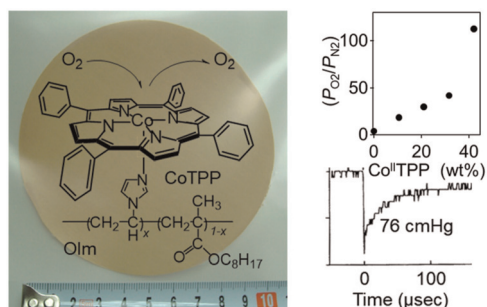


PAPERS

643

Highly facilitated permeation and enrichment of oxygen from air through a polyvinylimidazole membrane ligated with cobaltporphyrin that kinetically interacts with oxygen

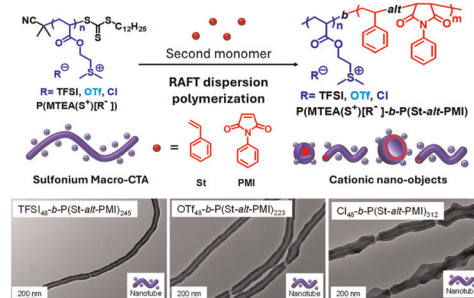
Hiromi Shinohara,* Hirotsugu Araiara and Hiroyuki Nishide*



651

Cationic nano-objects produced by polymerization-induced self-assembly using sulfonium-macro chain transfer agents with different counter anions

Hirotsugu Miyakawa and Hideharu Mori*



662

Functional self-healing aldehyde-derived nanoparticle-crosslinked gelatin/PNIPAm-based adhesive gels

P. A. Parvathy, Sriparna De, Manjinder Singh, Gaurav Manik and Sushanta K. Sahoo*



675

Hydroxyl-functional acrylic adhesives: leveraging polysilazane chemistry for curing

Amrita Chatterjee, Shashank Jha, Sushmit Sen, Keshav Dev, Chayan Das and Pradip K. Maji*

