

### IN THIS ISSUE

ISSN 2058-9689 CODEN MSDEBG 9(12) 1181-1302 (2024)



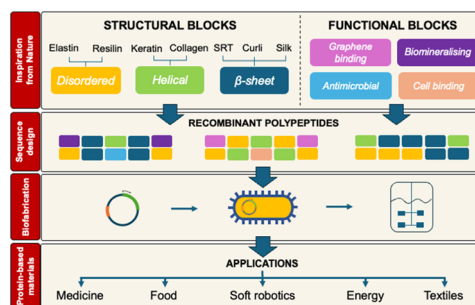
**Cover**  
See Mrigendra Dubey *et al.*,  
pp. 1210–1214.  
Image reproduced by  
permission of Mrigendra Dubey,  
Soft Materials Research Group,  
IIT Indore, India from *Mol. Syst.  
Des. Eng.*, 2024, 9, 1210.

### REVIEW

1187

#### Molecular design of protein-based materials – state of the art, opportunities and challenges at the interface between materials engineering and synthetic biology

Ebony Shire, André A. B. Coimbra, Carlos Barba Ostria, Leonardo Rios-Solis\* and Diego López Barreiro\*

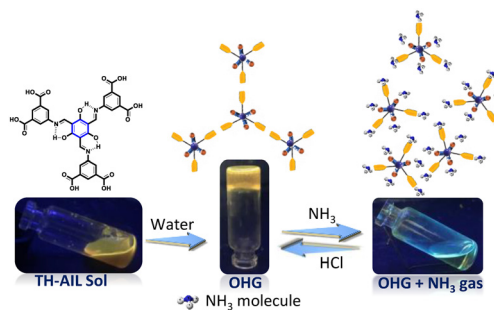


### COMMUNICATION

1210

#### Dual responsive fluorescence switching of organohydrogel towards base/acid

Manish Kumar Dixit, Moupia Mukherjee, Bharat Kumar Sahu, Abul Kalam and Mrigendra Dubey\*





# RSC Advances

At the heart of open access for  
the global chemistry community

## Editor-in-chief

**Russell J Cox**

Leibniz Universität Hannover, Germany

## We stand for:



**Breadth** We publish work in all areas of chemistry and reach a global readership



**Quality** Research to advance the chemical sciences undergoes rigorous peer review for a trusted, society-run journal



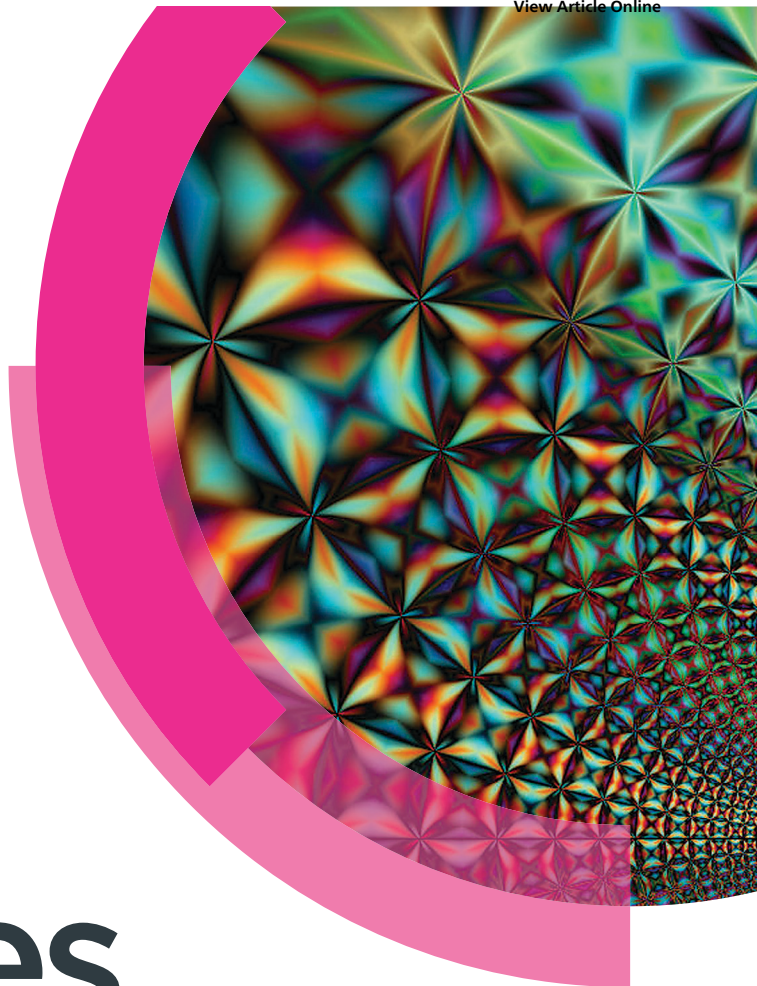
**Affordability** Low APCs, discounts and waivers make publishing open access achievable and sustainable



**Community** Led by active researchers, we publish quality work from scientists at every career stage, and all countries

**Submit your work now**  
[rsc.li/rsc-advances](https://rsc.li/rsc-advances)

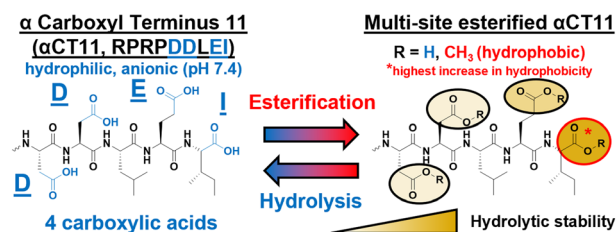
@RSC\_Adv



1215

### Multi-site esterification: a tunable, reversible strategy to tailor therapeutic peptides for delivery

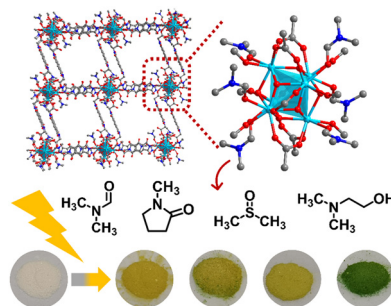
Mark S. Bannon, Jeffrey F. Ellena, Aditi S. Gourishankar, Spencer R. Marsh, Dilza Trevisan-Silva, Nicholas E. Sherman, L. Jane Jourdan, Robert G. Gourdie and Rachel A. Letteri\*



1228

### Controlling the photochromism of zirconium pyromellitic diimide-based metal-organic frameworks through coordinating solvents

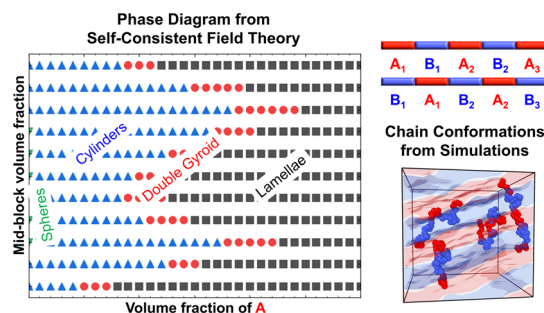
Youcong Li, Jiahao Dong, Yue Zhao, Lei Gao, Yu-Hao Gu and Shuai Yuan\*



1235

### Self-consistent field theory and coarse-grained molecular dynamics simulations of pentablock copolymer melt phase behavior

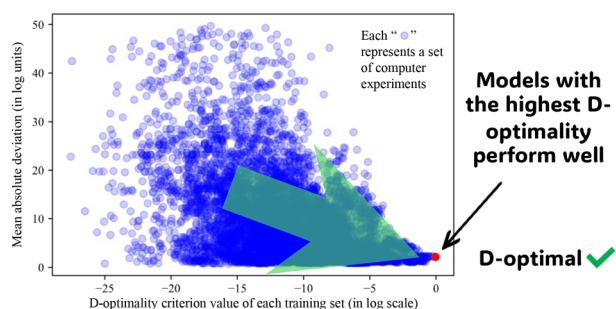
So Jung Park, Tristan Myers, Vinson Liao and Arthi Jayaraman\*



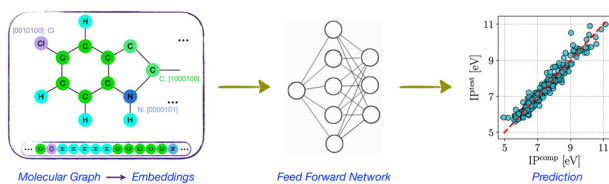
1254

### On the design of optimal computer experiments to model solvent effects on reaction kinetics

Lingfeng Gui, Alan Armstrong, Amparo Galindo, Fareed Bhasha Sayyed, Stanley P. Kolis and Claire S. Adjiman\*



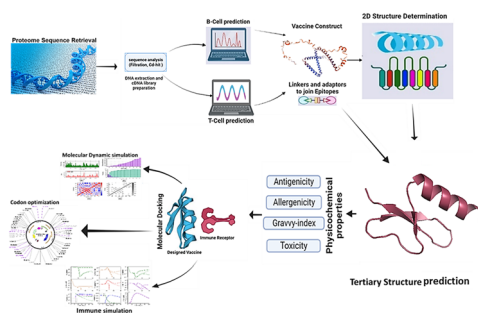
1275



### Graph-based networks for accurate prediction of ground and excited state molecular properties from minimal features

Denish Trivedi, Kalyani Patrikar and Anirban Mondal\*

1285



### Promising vaccine models against astrovirus MLB2 using integrated vaccinomics and immunoinformatics approaches

Syed Luqman Ali, Awais Ali, Waseef Ullah, Asifullah Khan,\* Elham Mohammed Khatravi, Abdul Malik, Aigul Abduldayeva, Aliya Baiduissenova, Hind Jaber Althagafi and Deema Fallatah

