

# Industrial Chemistry & Materials

GOLD  
OPEN  
ACCESS

Focus on industrial chemistry  
Advance material innovations  
Highlight interdisciplinary feature

Innovative.  
Interdisciplinary.  
Problem solving

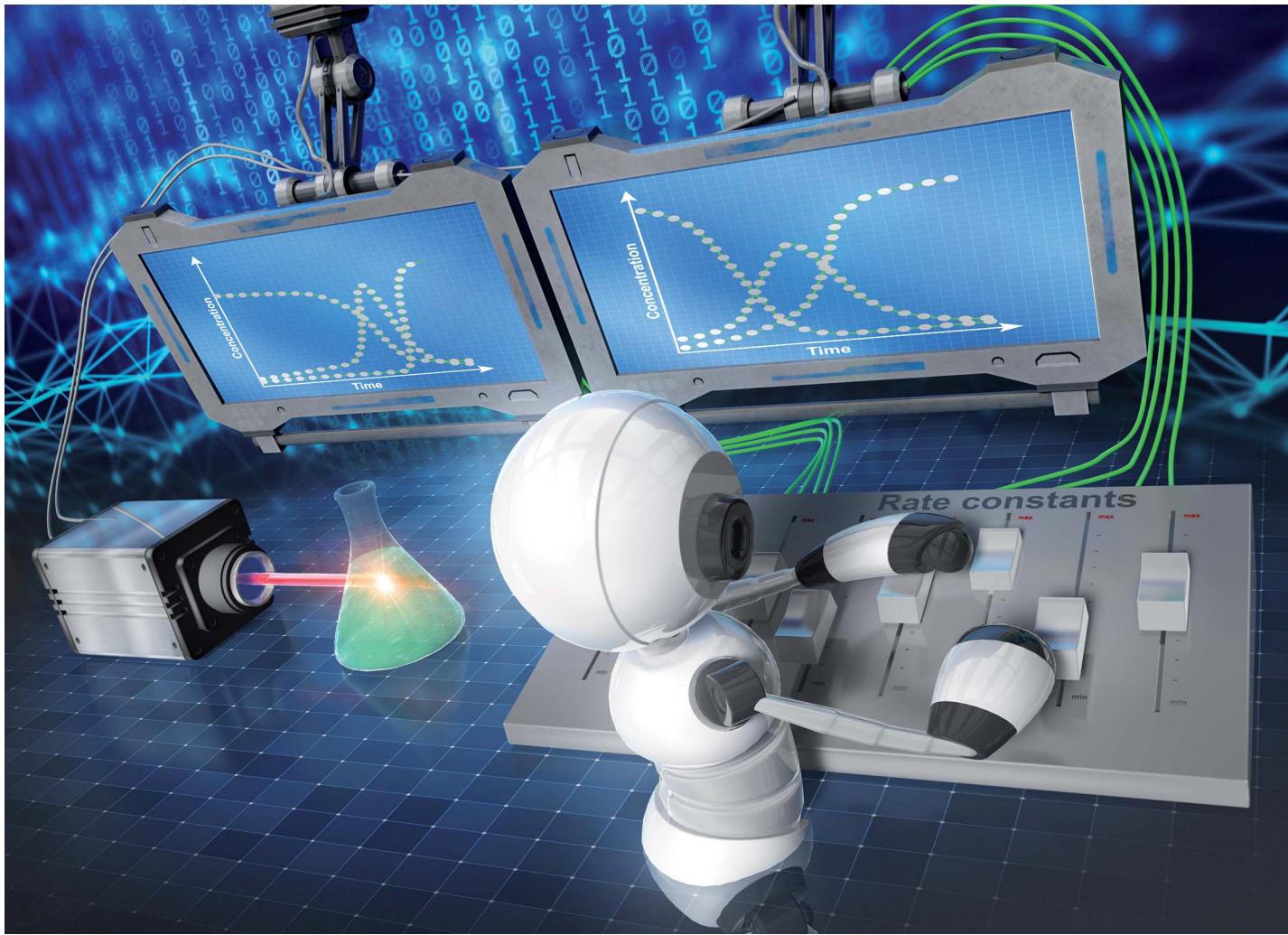
APCs currently waived

Learn more about ICM  
Submit your high-quality article

 @IndChemMater

 @IndChemMater

[rsc.li/icm](http://rsc.li/icm)



Showcasing research led by Dr Shun Hayashi from the National Museum of Nature and Science, Ibaraki, Japan.

Sparse identification of chemical reaction mechanisms from limited concentration profiles

This study presents a sparse identification approach to automate the discovery of chemical reaction mechanisms, utilizing experimental data to create accurate and interpretable kinetic models while avoiding overfitting. A key advantage of the proposed approach over conventional algorithms is that it can be applied to cases with limited concentration profiles, which often occur for chemical reactions involving untraceable intermediates. This strategy expands the potential for automated mechanistic studies, especially in situations where comprehensive reaction monitoring is impractical.

Image reproduced by permission of Shun Hayashi from *Digital Discovery*, 2025, **4**, 3092.

## As featured in:



See Shun Hayashi, *Digital Discovery*, 2025, **4**, 3092.