

# Industrial Chemistry & Materials

GOLD  
OPEN  
ACCESS

Focus on industrial chemistry  
Advance material innovations  
Highlight interdisciplinary feature

Innovative.  
Interdisciplinary.  
Problem solving

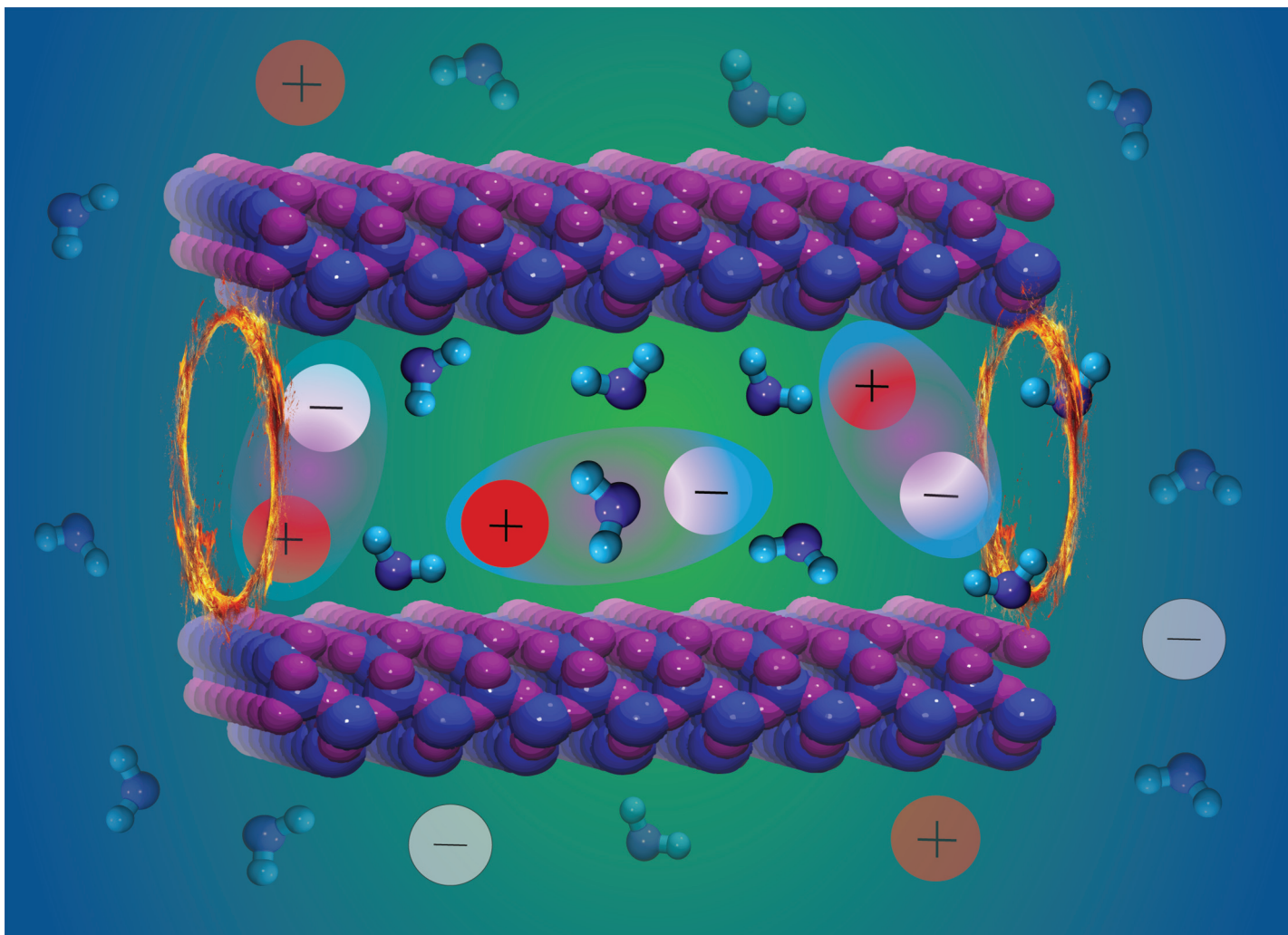
APCs currently waived

Learn more about ICM  
Submit your high-quality article

 **@IndChemMater**

 **@IndChemMater**

**rsc.li/icm**



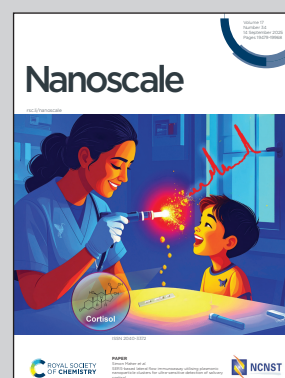
**Showcasing research from the group of Dr. Tuan Ho,  
Geochemistry Department, Sandia National Laboratories,  
NM, USA.**

**Influence of ion pairing on ion and counterion retention in  
neutral nanopores of gibbsite and kaolinite**

This study investigates how ion pairing affects ion partitioning from bulk solution into neutral nanopores of gibbsite (hydrophilic), and kaolinite (partially hydrophobic). In gibbsite,  $\text{Na}^+$  ions are thermodynamically unfavorable and  $\text{Cl}^-$  ions slightly favored individually, but ion pairing forms a dipole aligned with water molecules, making ion pairs thermodynamically favorable for partitioning. Kaolinite's partial hydrophobicity suppresses partitioning of both ions and ion pairs. These findings highlight how ion pairing and surface chemistry control ion retention in neutral nanopores.

Image reproduced by permission of Tuan A. Ho from *Nanoscale*, 2025, **17**, 19666.

**As featured in:**



See Tuan A. Ho, *Nanoscale*, 2025, **17**, 19666.