

Showcasing research from Professor Sergio Andres Galindo-Torres's laboratory, Multi-physics Multi-scale Modelling Lab, School of Engineering, Westlake University, Hangzhou, Zhejiang, China.

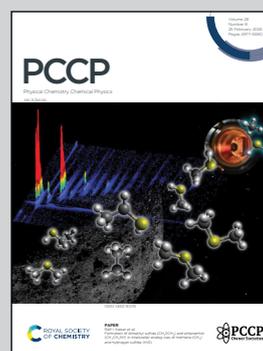
Field-nanoconfinement coupling enhanced water desalination in carbon nanotubes

The electric field-induced restructuring of confined water in carbon nanotubes elevates ion free energy barriers, providing a molecular-level mechanism for water desalination. The molecular mechanism governing the free energy barrier of the ion arises from the polarization of confined water induced by the coupling of the electric field and CNTs, leading to the stripping and reorganization of the ion hydration shell. Ultimately, the applied electric field significantly increases the inhibitory effect of wide CNTs on the ion permeation. See <https://m3.westlake.edu.cn/>.

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See Sergio Andres Galindo-Torres and Zhuan Ge, *Phys. Chem. Chem. Phys.*, 2026, **28**, 5119.

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