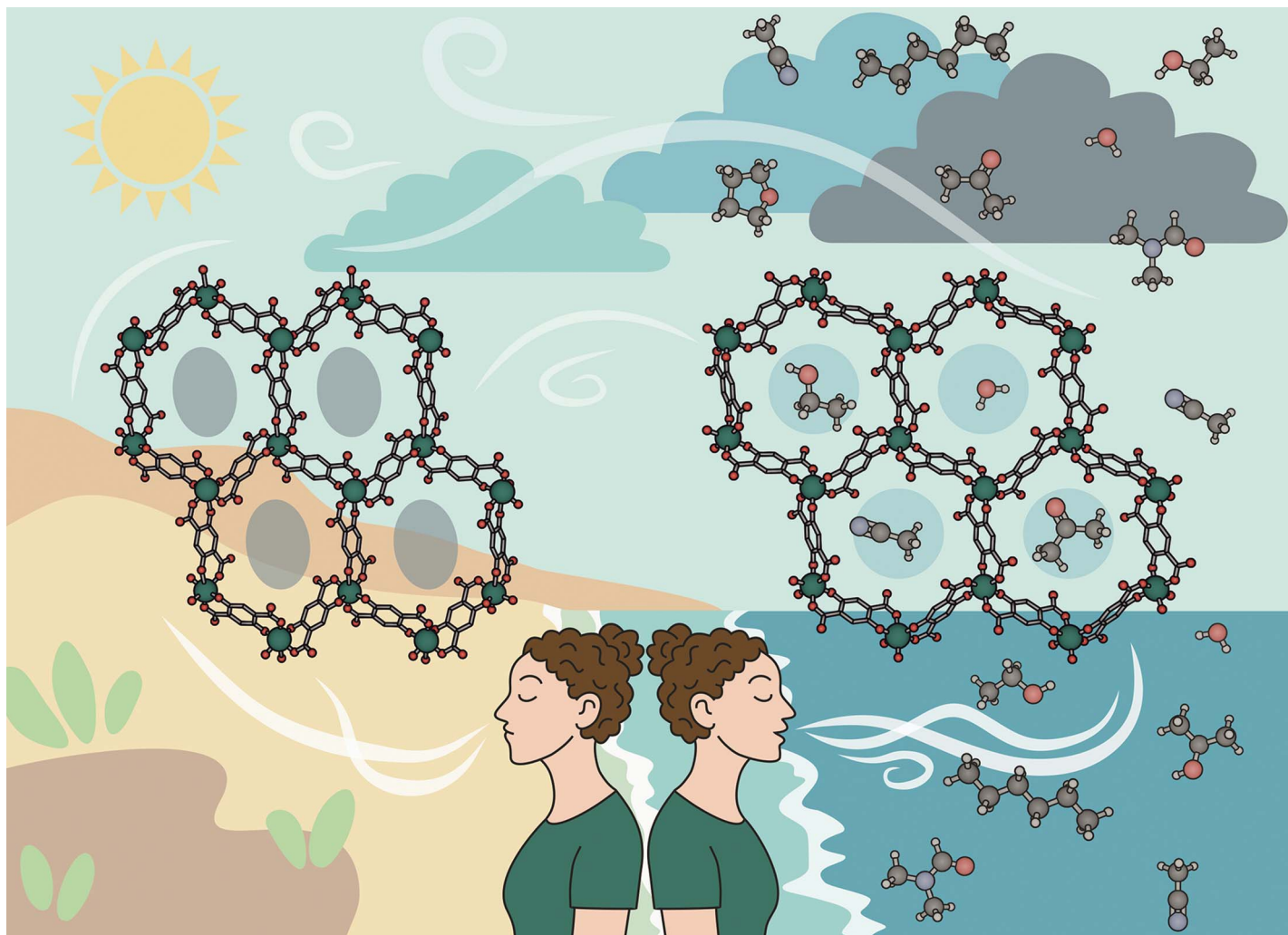


EES Batteries

**Exceptional research on
batteries and energy storage**

Part of the EES family

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



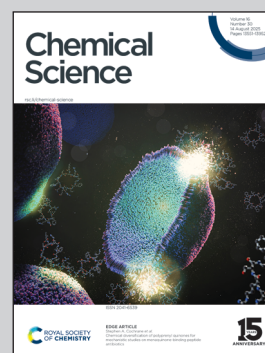
Showcasing research from Professor Bettina V. Lotsch's laboratory, Nanochemistry Department, Max Planck Institute for Solid State Research, Stuttgart, Germany.

Dynamic breathing behaviour of the titanium-based metal-organic framework NTU-9 upon adsorption of water and organic solvents

What happens to the structure of a framework material when the pore content is changed or reduced? While investigating and optimising the reproducibility of synthesising the two-dimensional titanium-based MOF NTU 9, we discovered a dynamic behaviour of NTU-9 triggered by guest adsorption and desorption. After applying additional stimuli (i.e., vacuum), the material exhibits reversible pore distortion by compression in the lateral dimension, forming a new metastable form, NTU-9-d (d stands for distorted), with a reduction in unit cell volume, pore size, and crystal symmetry.

Image reproduced by permission of Julia Knapp from *Chem. Sci.*, 2025, **16**, 13646.

As featured in:



See Sebastian Bette, Bettina V. Lotsch *et al.*, *Chem. Sci.*, 2025, **16**, 13646.