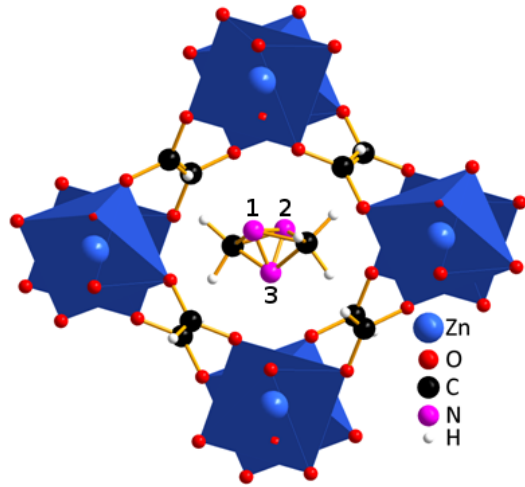


Metal-organic frameworks (MOF's): organic-inorganic crystalline solids in well-defined geometric structures, with possibilities for energy technologies and industrial applications, such as hydrogen fuel cells.



In the MOF $[(\text{CH}_3)_2\text{NH}_2]\text{Zn}(\text{HCOO})_3$, the N-atom in dimethylammonium (DMA^+) hops (shown in purple) between three distinct but equivalent positions at high T.

Upon cooling, the N-atom hopping slows down and the MOF becomes ferroelectric.

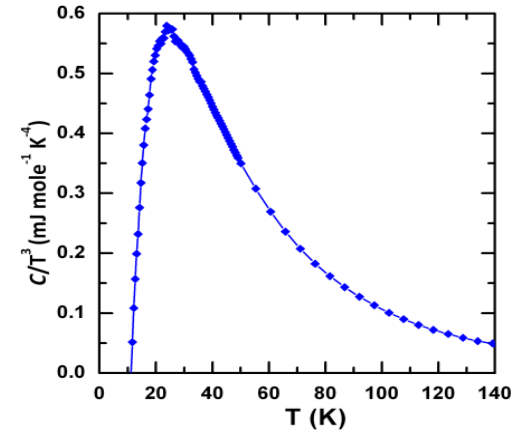
Different meta-stable spin-lattice relaxation pathways are observed after cooling:

- ▶ DMA^+ finds distinctly different local environments.

The meta-stable relaxation pathways undergo sudden jumps to the stable main path at unpredictable temperatures:

- ▶ The various infrastructures attained are very close in energy.

Signature of a Glassy Phase.



A peak in C/T^3 is observed well below T_c .

