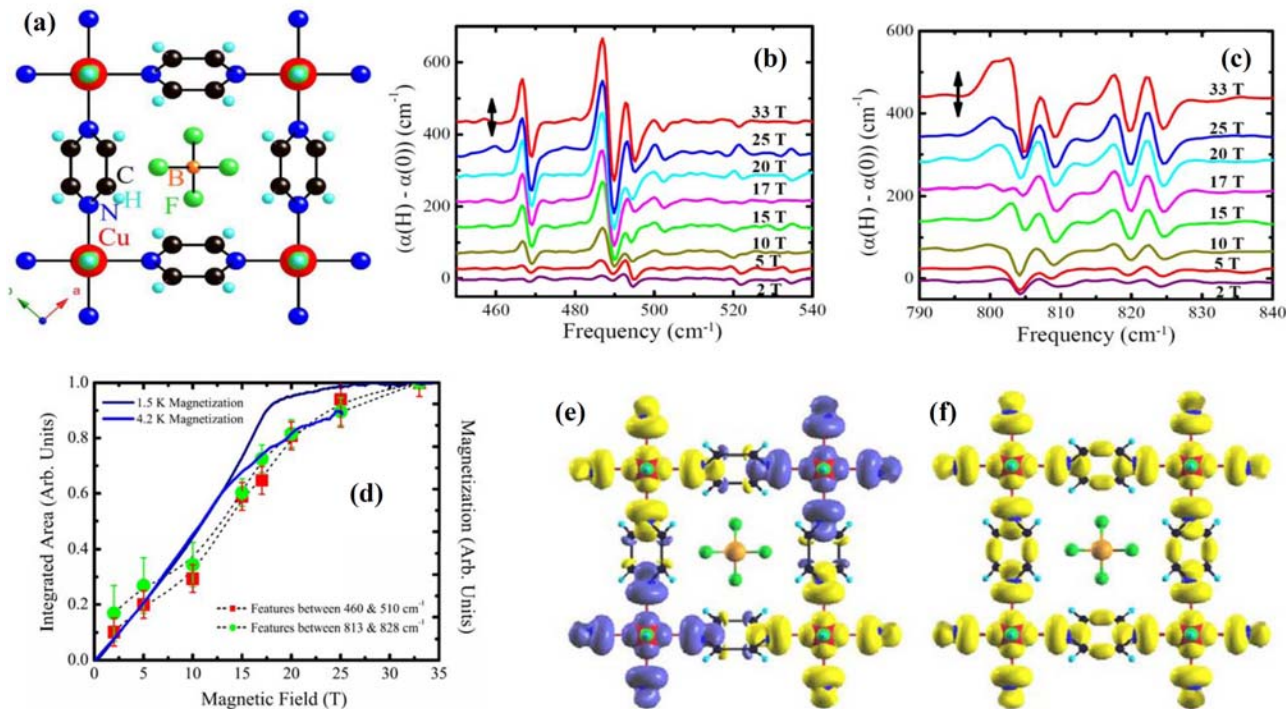


Magnetoelastic coupling through the field-driven transition to the fully polarized state in a metal organic framework material

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- Magneto-infrared spectroscopy was used to probe local lattice distortions through the magnetically-driven transition in a model quasi-two-dimensional quantum Heisenberg antiferromagnet, $\text{Cu}(\text{pyz})_2\text{HF}_2\text{BF}_4$
- Our measurements reveal that when this material undergoes an antiferromagnetic to fully-polarized state transition, the pyrazine ligand has to distort out of plane in order to respond to this transition.

The antiferromagnetic to fully-polarized state transition is thus not a purely magnetic transition; it has an important structural component that acts to reduce the Cu-pyrazine-Cu spin exchange strength in the high field state.