

Meso Challenge: **Functional Metal-Organics for Gas storage**

*The largest mass of material moved per day on earth is coal transport across USA. Each ton of this coal produces 3 tons of CO₂.

*Since 2000 the new science of Reticular Chemistry has designed and synthesized a new class of porous materials - MOFS - for gas storage, purification, separation, catalysis, sequestration, hydrogen storage, and other applications.

*A cylinder of natural gas used as automotive fuel has its capacity doubled with filled with these MOF crystal sponges.

* MOF design and synthesis for tailored properties shows great promise, based on an exploding literature demonstrating successful design of wanted materials properties at the mesoscale.

Metal-organic framework structures (MOFS)
The yellow balls are cavities which absorb gas
on the largest known internal surface area/volume.

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