# Article information:

Tunable acetylene sorption by flexible catenated metal–organic frameworks | Nature Chemistry
<https://www.nature.com/articles/s41557-022-00928-x>

# Article summary:

1. The development of new technologies for efficient gas storage at ambient pressure can improve safety and provide new possibilities for gas cylinder design.

2. Porous materials, particularly metal–organic frameworks (MOFs), possess inherent voids that allow the storage and delivery of large amounts of gases.

3. A strategy using ligand functionalization has been developed to investigate the behaviour and properties of flexible MOFs for acetylene storage, with a focus on achieving a narrow pressure range (100-150 kPa) at room temperature.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is generally reliable and trustworthy in its reporting, as it provides evidence to support its claims and presents both sides of the argument equally. The authors provide an overview of the current state of research into gas storage technology, highlighting the challenges posed by acetylene due to its explosive nature when compressed over 200 kPa at room temperature. They then discuss how porous materials such as metal-organic frameworks (MOFs) can be used to store and deliver large amounts of gases, noting that flexible MOFs have higher usable storage capacity than rigid materials due to their sigmoidal S-shape isotherm when exposed to guest pressures in the desired working pressure range. The authors then describe their strategy using ligand functionalization to investigate the behaviour and properties of flexible MOFs for acetylene storage, with a focus on achieving a narrow pressure range (100-150 kPa) at room temperature.

The article does not appear to contain any promotional content or partiality towards any particular viewpoint or opinion; instead, it presents both sides of the argument equally and objectively. Furthermore, all claims made are supported by evidence from previous studies in this field, which adds credibility to the article's conclusions. Additionally, potential risks associated with storing acetylene are noted throughout the article, further demonstrating its trustworthiness and reliability.

# Topics for further research:

* Metal-Organic Frameworks (MOFs)
* Acetylene Storage Technology
* Ligand Functionalization
* Flexible MOFs
* Sigmoidal S-Shape Isotherm
* Gas Storage Capacity

# Report location:

<https://www.fullpicture.app/item/d37eb95faa87ce905cf4ad20021c5f92>