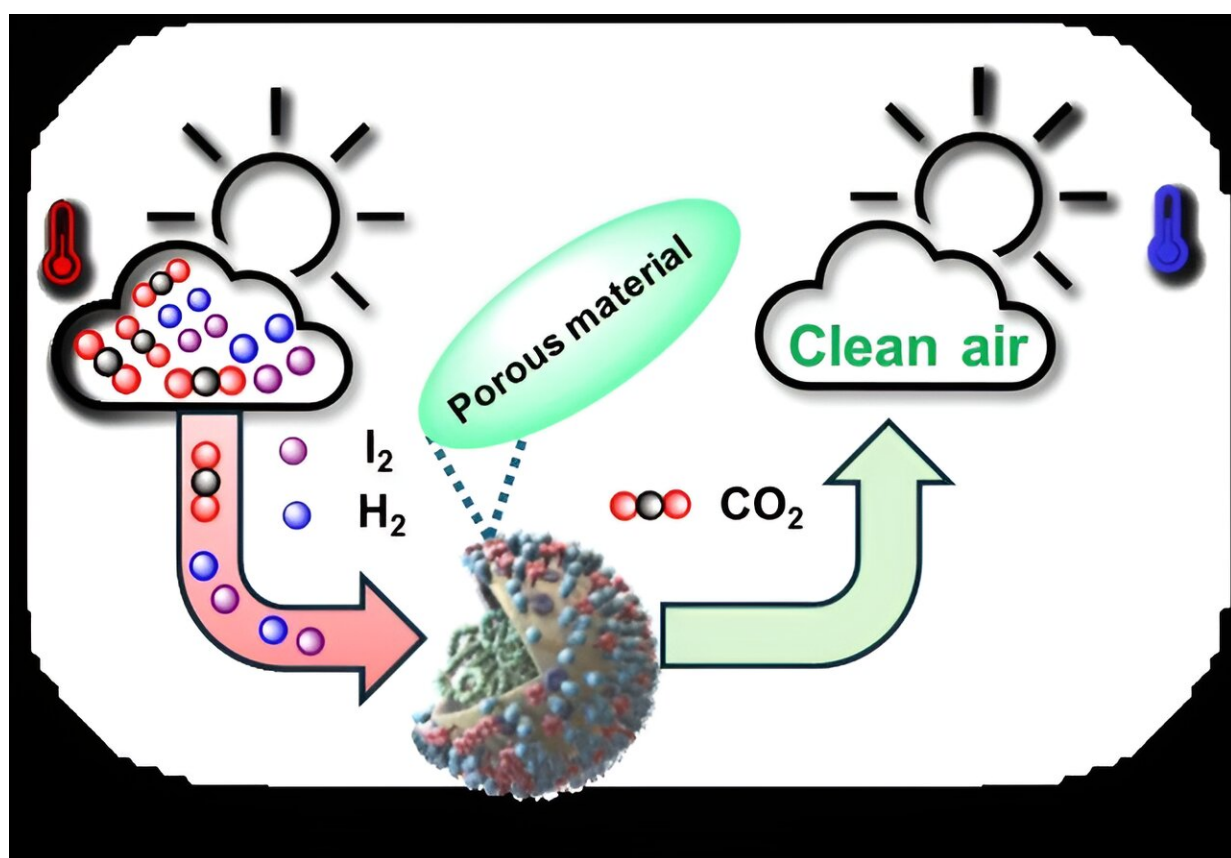


Research team designs new porous materials to advance environmental remediation research

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Credit: *ACS Applied Materials & Interfaces* (2024). DOI: 10.1021/acsami.3c18055

In a landmark achievement, the Functional Materials Group (FMG) led by Prof. Dr. Bassam Alameddine, has propelled porous materials research to new horizons. The latest endeavor was highlighted in a study [published](#) in *ACS Applied Materials & Interfaces* showcasing the FMG's pioneering work in designing new materials that uptake carbon dioxide, hydrogen, and iodine gases, thus, igniting interest across scientific communities worldwide.

FMG has engineered versatile and easy-to-make [porous materials](#) that boast unparalleled capabilities in gas adsorption. This discovery not only promises to revolutionize environmental sustainability efforts but also holds immense potential for advancing energy storage technologies.

With the world increasingly focused on combating climate change and fostering [sustainable practices](#), the group's novel porous materials offer great potential. These materials exhibit remarkable efficacy in capturing [carbon dioxide](#), a notorious greenhouse gas responsible for global warming.

The research team headed by Alameddine and comprising Dr. Noorullah Baig and Suchetha Shetty, in collaboration with Prof. Omar Farha and his postdoctoral researcher Dr. Debababrata from Northwestern University is paving the way for innovative solutions to mitigate the impacts of climate change and secure a cleaner, greener future for generations to come.

Furthermore, as the global demand for [clean energy](#) continues to soar, these porous materials demonstrate exceptional performance in hydrogen gas uptake, a key component in the quest for sustainable

energy solutions. With hydrogen touted as the fuel of the future, the group's innovative work holds promise for its application in hydrogen storage technologies and driving the transition towards a carbon-neutral energy landscape.

Additionally, the study reveals the porous materials' proficiency in adsorbing iodine, a radioactive element that is released from [nuclear power plants](#) and which is known to be a harmful pollutant and carcinogenic. The development of materials capable of safely capturing and storing iodine holds significant importance towards safer practices in nuclear waste management and environmental protection.

More information: Suchetha Shetty et al, Tröger's Base-Enriched Conjugated Cyclopentannulated Copolymers: Prominent Adsorbents of CO₂, H₂, and Iodine, *ACS Applied Materials & Interfaces* (2024). [DOI: 10.1021/acsami.3c18055](#)

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