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Reticular chemistry for clean energy

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Linking molecular building blocks by strong bonds to make networks (Reticular Chemistry) has yielded a number of new classes of materials such as metal-organic frameworks, zeolitic imidazolate frameworks and covalent organic frameworks. These are new classes of porous materials in which inorganic 'joints' are linked by organic 'struts' to give extended structures with surface areas greater than 5000 m²/g. Their ultra-high surface area is useful in storing hydrogen and natural gas, and for capturing carbon dioxide. Recently we have shown that MOFs can be quite effective as air purification and capture of harmful gases. This presentation will highlight the milestones and future prospects of this new field