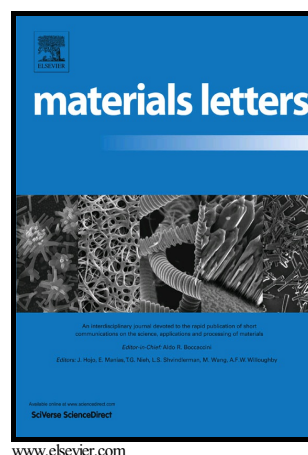


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# Microporous Organic Polymers Based on Hexaphenylbiadamantane: Synthesis, Ultra-High Stability and Gas Capture

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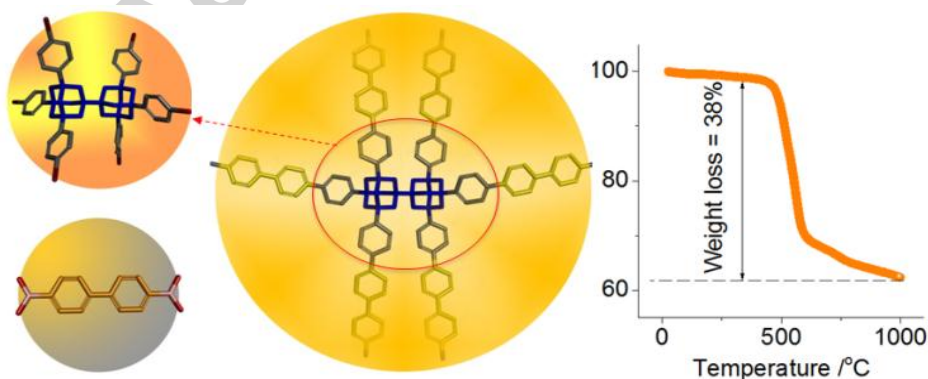
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## Abstract

Hexaphenylbiadamantane-based microporous organic polymers (MOPs) were successfully synthesized by Suzuki coupling under mild conditions. The obtained MOPs show high surface area ( $891 \text{ m}^2 \text{ g}^{-1}$ ), ultra-high thermal (less than 40% mass loss at temperatures up to  $1000^\circ\text{C}$ ) and chemical (no apparent decomposition in organic solvents for more than 7 days) stability, gas ( $\text{H}_2$ ,  $\text{CO}_2$ ,  $\text{CH}_4$ ) capture capabilities and vapor (benzene, hexane) adsorption. These combined abilities render the synthesized MOPs an attractive candidate as thermo-chemically stable adsorbents for practical use in gas storage and pollutant vapor adsorption.

## Graphic Abstract



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