

*Heteropore COFs: An Emerging Class of Crystalline Hierarchically Porous Polymers*

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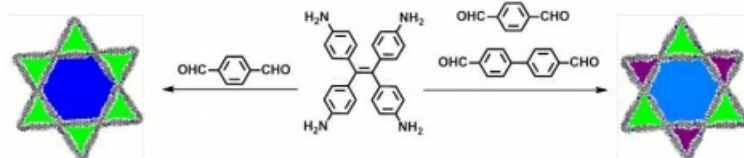
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Covalent organic frameworks (COFs) are a class of crystalline porous organic polymers which have drawn considerable attention due to their applications in various fields such as gas storage and separation, catalysis, sensors, delivery and photoelectric devices. The most intriguing feature of COFs is the periodical distribution of micro/meso-scaled holey structures which endow COFs with inherent porosities. In this context, the topological structures of pores play a crucial role in realizing the functions of COFs. Over the past decade a variety of COFs with tailorable size and shape have been constructed. However, the topological structures of COFs are still quite limited. Although introducing different kinds of pores into a COF can endow it with hierarchical porosity, to construct such kind of COFs still faces great challenges. In 2014 we reported the first example of 2D COF bearing two different kinds of detectable pores. This Kagome-like covalent organic framework represents a new class of COFs (heteropore COFs). After that, more examples for heteropore COFs have been demonstrated. Very recently we have constructed more complicated heteropore COFs which bear three different kinds of pores. In this presentation, some recent progress on 2D heteropore COFs will be reported.

[1] Zhou T.-Y., Xu S.-Q., Wen Q., Pang Z.-F., Zhao X. (2014). *J. Am. Chem. Soc.* 136, 15885-15888.

[2] Pang Z.-F., Xu S.-Q., Zhou T.-Y., Liang R.-R., Zhan T.-G., Zhao X. (2016). *J. Am. Chem. Soc.* 138, 4710-4713.

[3] Qian C., Xu S.-Q., Jiang G.-F., Zhan T.-G., Zhao X. (2016). *Chem. Eur. J.* 22, 17784-17789.



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