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TECHNICAL DATA SHEET

COF-TpPa-1

Covalent Organic Framework — TpPa-1

A crystalline, high-surface-area two-dimensional framework with one-dimensional channels for catalysis, separation, and sensing.

CONTENTS

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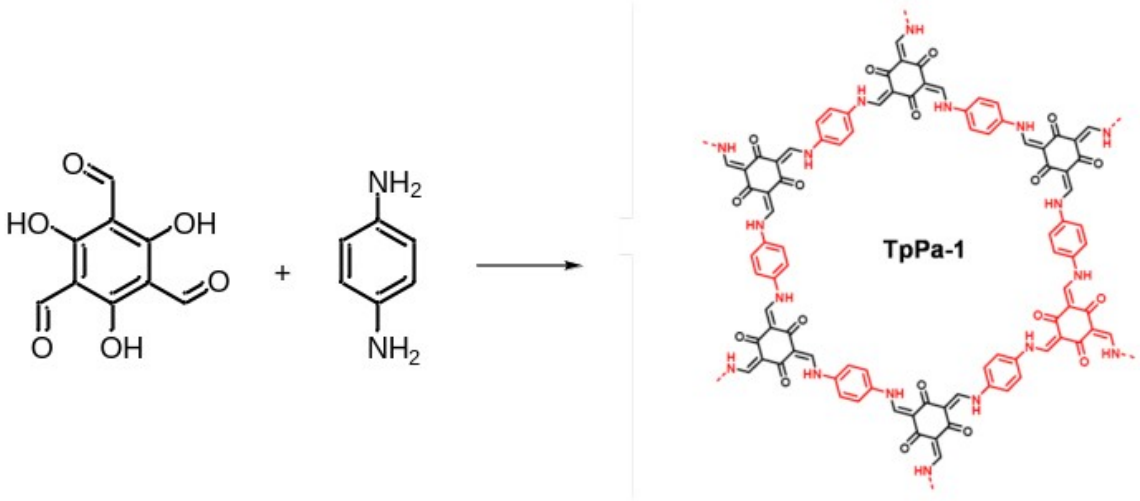
I Preparation Method

ACS Material COF-TpPa-1 is synthesized by the Schiff-base condensation of 1,3,5-triformylbenzene with p-phenylenediamine, yielding a crystalline two-dimensional covalent organic framework with ordered one-dimensional channels. Detailed synthesis parameters are proprietary; please contact ACS Material for application-specific grades.

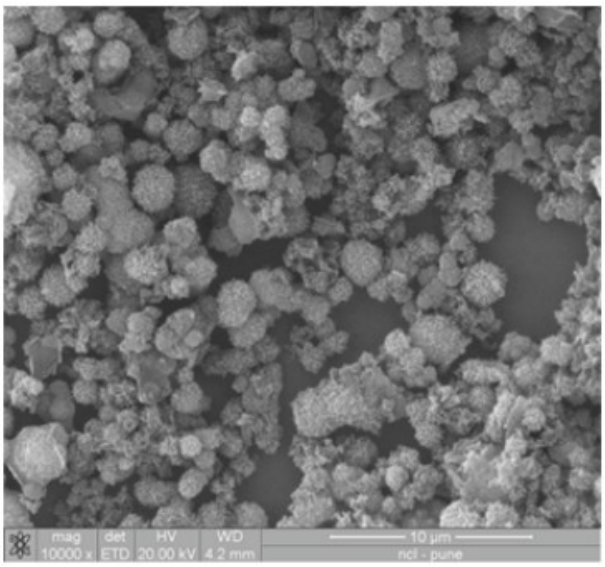


Condensation of 1,3,5-triformylbenzene with p-phenylenediamine to form COF-TpPa-1.

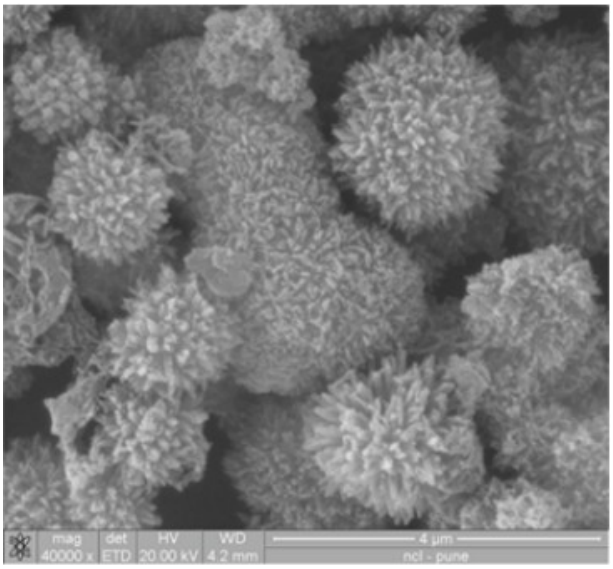
II Characterizations

Property	Value
Form	Powder crystal; a two-dimensional planar material with one-dimensional channels
Solubility	Insoluble in water and common organic solvents (DMF, THF, DMSO, acetone, chloroform)
Stability (Tg)	300–540 °C
BET surface area	~1360 m^2/g
Pore size	1.5–1.8 nm (varies slightly with the R-group)
R-group	$-CH_3$ / $-NO_2$ / –H

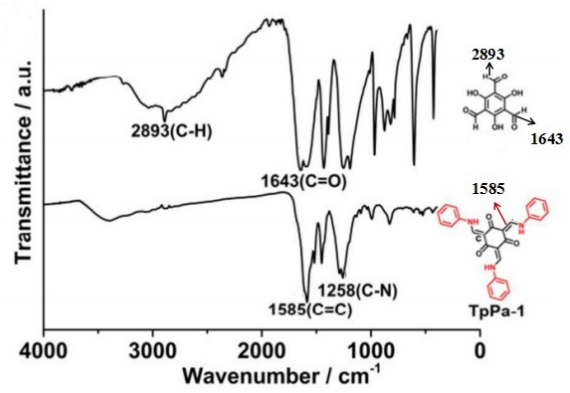
Characterization data



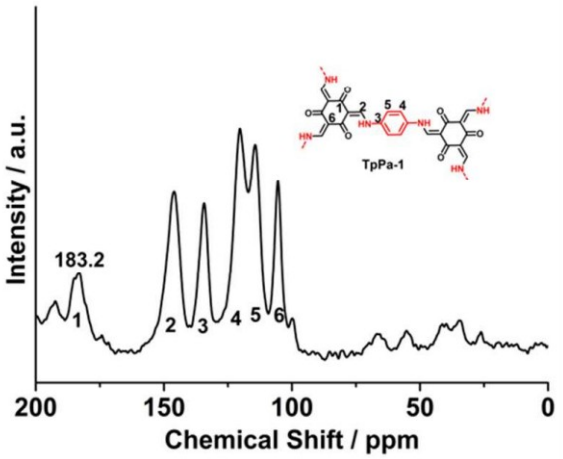
Typical SEM image (1) of ACS Material COF-TpPa-1



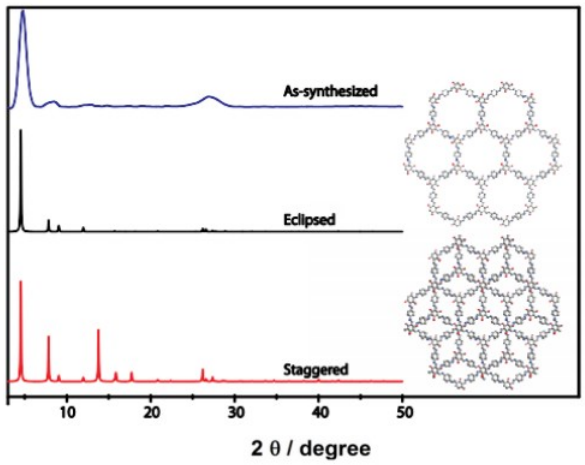
Typical SEM image (2) of ACS Material COF-TpPa-1



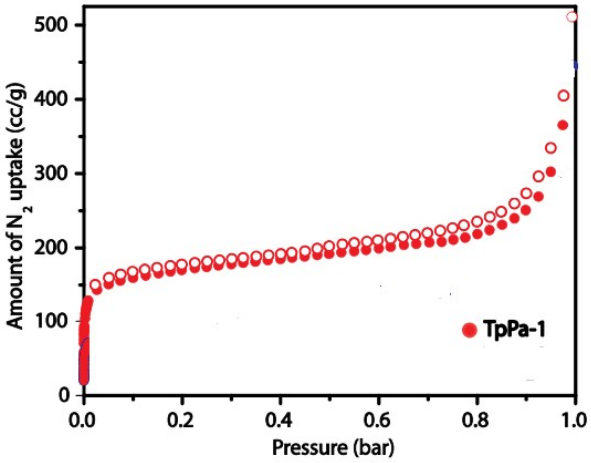
FT-IR spectra of COF-TpPa-1 (red) and 1,3,5-triformylbenzene



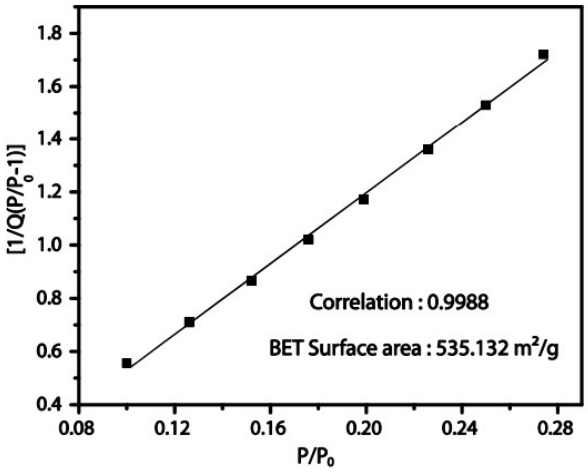
Solid-state NMR spectrum of ACS Material COF-TpPa-1



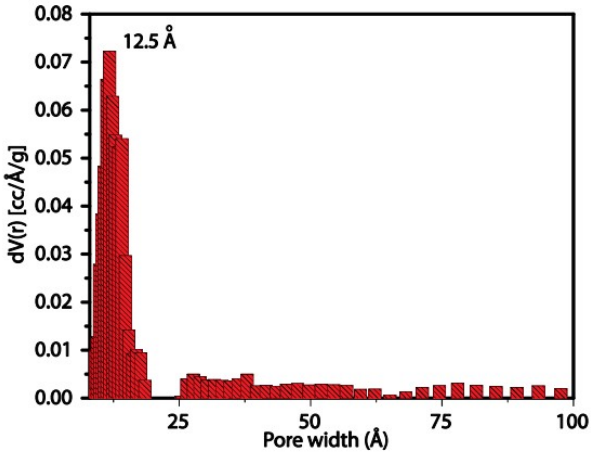
PXRD pattern of as-synthesized COF-TpPa-1 (blue) vs eclipsed (black) and staggered (red) stacking models



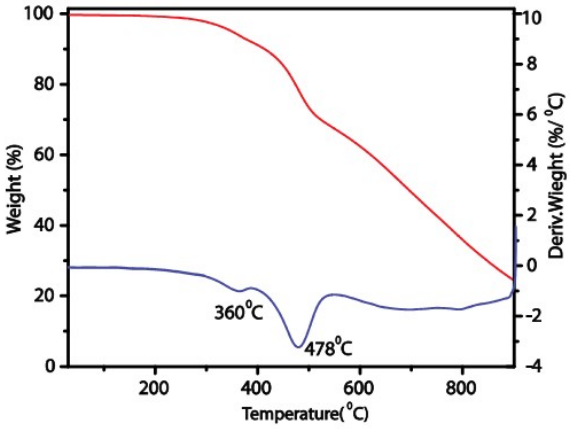
N_2 adsorption (filled) and desorption (empty) isotherms of COF-TpPa-1



BET surface-area plot for COF-TpPa-1 calculated from the isotherm



Pore-size distribution of ACS Material COF-TpPa-1



TGA of activated COF-TpPa-1 under N_2 atmosphere

Application Fields

- Metal-coordination catalysis
- Recognition of metal ions
- Bio-detection
- Chiral separation

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