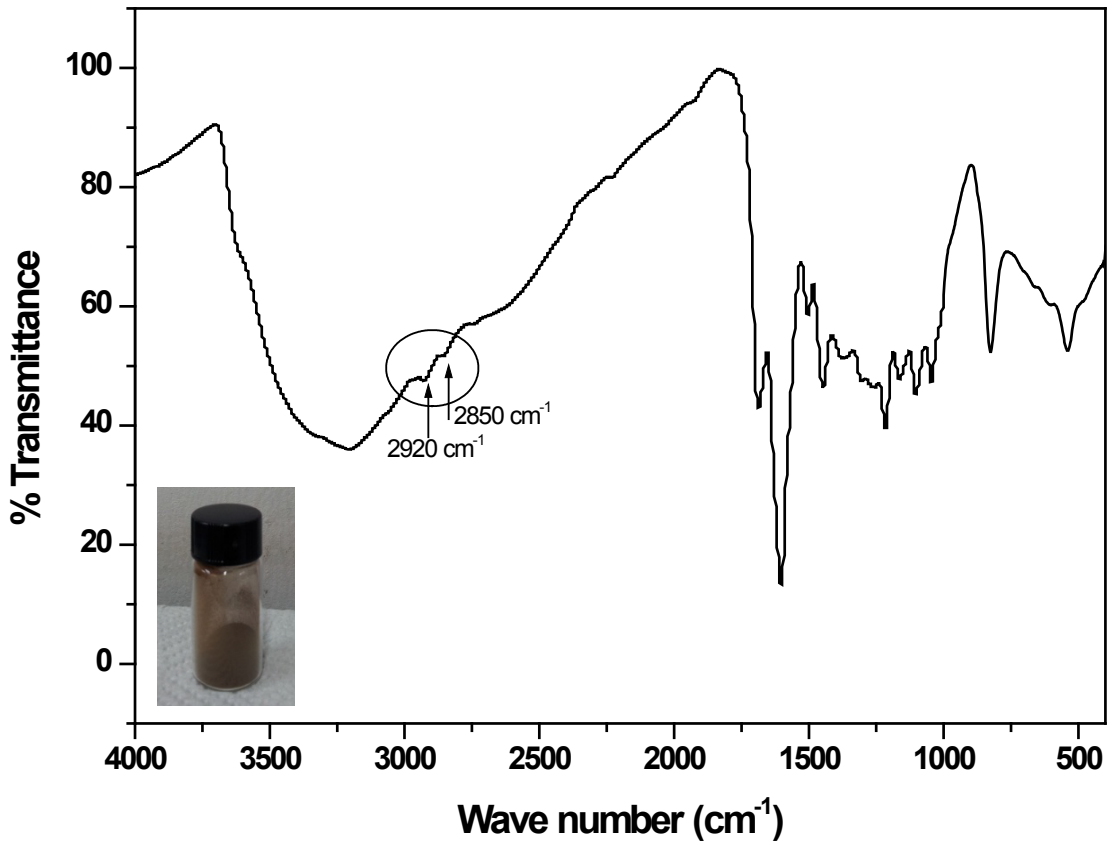

Figure: S1 FTIR spectrum of microporous polymeric organic framework (POF) derived from phloroglucinol and terephthaldehyde (Inset: Synthesized POF exhibiting brown color).

Phloroglucinol (1 g) and terephthaldehyde (0.62 g) in 20 mL of 1, 4-dioxane was taken in 20 mL vial. The mixture was heated solvo-thermally in the oven at 100 °C for 12 h. An orange colored precipitate was filtered and the residue washed several times with water and ethanol and dried in the oven at 100 °C for 24 h. Its FTIR spectrum is shown in Fig. S1. The sharp peak at 1668 cm^{-1} is due to quinonoid vibration and the very intense sharp peak at 1603 cm^{-1} to C=C stretching vibration of the quinonoid. This polymer also exhibited broad light absorption. There is no peak at 2860 cm^{-1} for tertiary hydrogen. So, we establish dehydrogenation of the bridge. Katsoulidis and Kanatzidis [20] synthesized the polymer at 220 °C under solvo-thermal process. They obtained a dark red polymer. They showed semiconductor like absorption and suggested delocalized electronic cloud, but their suggested structure carries insulated aromatic rings, as the tertiary hydrogen in the bridge is retained in the suggested structure of the polymer. On the other hand the entire characteristics can be explained with the bridge dehydrogenated.

Table S1 Textural properties and CO_2 adsorption results of hypercross-linked naphthalene synthesized at varying the temperature with constant stirring

HCPs of Naphthalene (varying the temperature at constant 200 RPM)	**Surface area, a (m^2/g)**	**Pore volume, V_p (cm^3/g)**	**Pore diameter, dp (nm)**	**CO_2 adsorption (wt %) at 25 °C**
30 °C	247.95	0.11	0.8	4.0%
40 °C	452.6	0.19	0.8	6.0%
50 °C	566.66	0.23	0.8	6.2%
60 °C	726.6	0.28	0.6	6.3%
70 °C	832.72	0.31	0.6	6.5%
80 °C	**924.63**	**0.39**	**0.6**	**7.0%**

Table S2 CO_2 adsorption results HCPs of naphthalene at varying the RPM with constant temperature

HCPs of Naphthalene (varying the RPM at 80°C)	**CO_2 adsorption (wt %) at 25 °C**
150 RPM	6.9%
200 RPM	6.0%
250 RPM	6.4%
300 RPM	4.6%

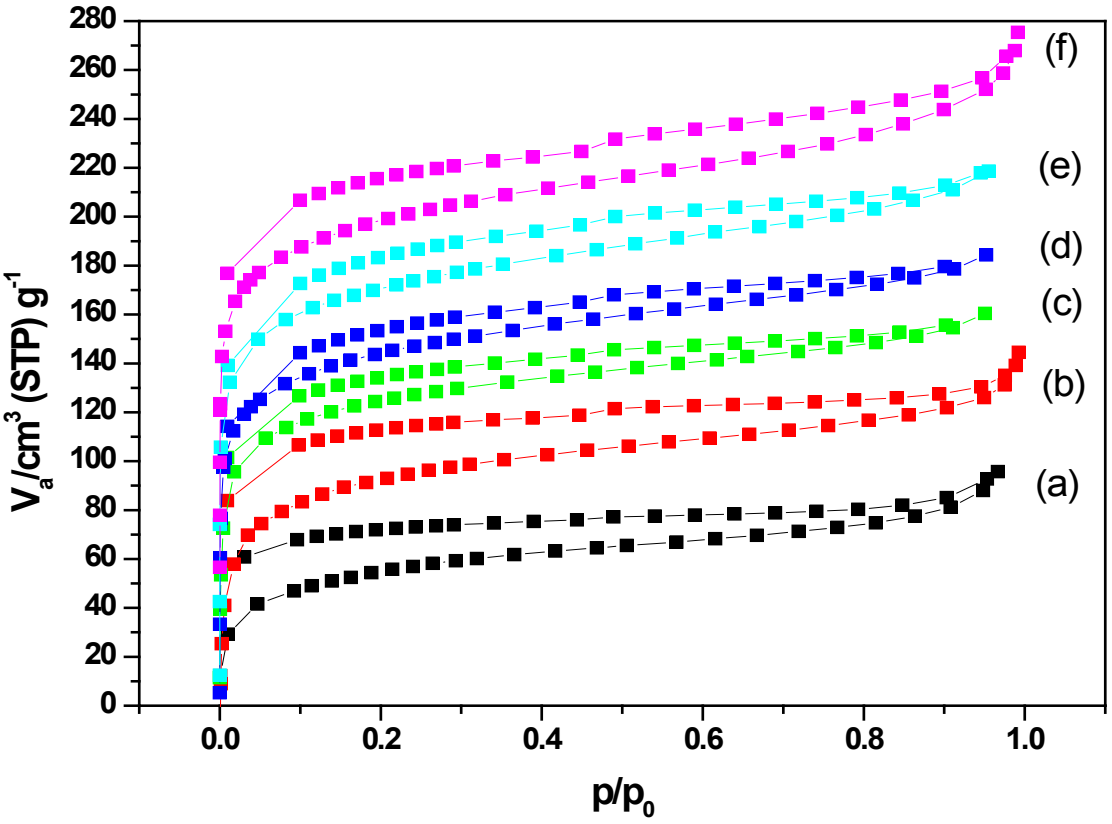

Figure S2: N_2 adsorption desorption isotherm of hypercross-linked conjugated naphthalene synthesized at (a) 30, (b) 40, (c) 50, (d) 60, (e) 70 and 80 °C.

The N_2 adsorption-desorption isotherms of hypercross-linked conjugated quinonoid of naphthalene are shown in Fig. S2. Sharp increase in N_2 sorption at low p/p_0 proves existence of micropores in all. The volume of N_2 condensed in the micropores increased with the increase in the synthesis temperature of the polymers. In all, the desorption isotherms were not coinciding with that of adsorption isotherms because of irregular pores.