

## Electronic supplementary information

# Post-synthetically Modified Metal-porphyrin Framework GaTCPP for Carbon Dioxide Adsorption and Energy Storage in Li-S Batteries

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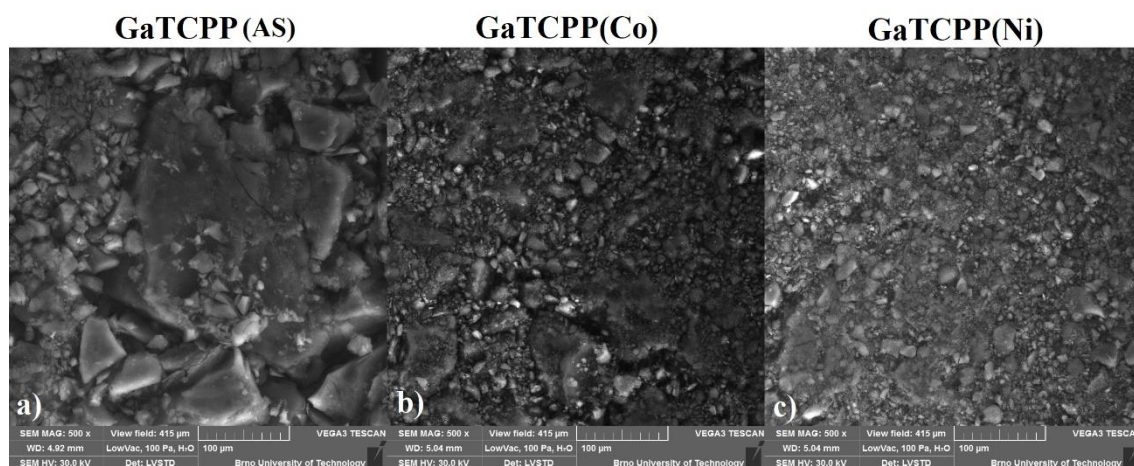


Fig. S 1 The SEM images of GaTCPP materials a) for GaTCPP(AS), b) for GaTCPP(Co) and c) for GaTCPP(Ni).

Table S1 Summarization of the atomic and mass concentration of the elements in GaTCPP materials.

<b>GaTCPP(AS)</b>	<b>Atomic conc. [%]</b>	<b>Error [%]</b>	<b>Mass conc. [%]</b>	<b>Error [%]</b>
<b>C</b>	72.91	0.64	61.26	0.62
<b>N</b>	9.72	0.64	9.52	0.63
<b>O</b>	14.78	0.38	16.54	0.42
<b>Ga</b>	2.60	0.08	12.68	0.33

<b>GaTCPP(Co)</b>	<b>Atomic conc. [%]</b>	<b>Error [%]</b>	<b>Mass conc. [%]</b>	<b>Error [%]</b>
<b>C</b>	67.90	0.64	54.43	0.67
<b>N</b>	11.82	0.60	11.05	0.56
<b>O</b>	16.60	0.43	17.72	0.46
<b>Co</b>	0.45	0.14	1.75	0.55
<b>Ga</b>	3.24	0.10	15.06	0.40

<b>GaTCPP(Ni)</b>	<b>Atomic conc. [%]</b>	<b>Error [%]</b>	<b>Mass conc. [%]</b>	<b>Error [%]</b>
<b>C</b>	66.33	0.53	52.97	0.50
<b>N</b>	13.67	0.50	12.73	0.47
<b>O</b>	16.32	0.35	17.36	0.37
<b>Ni</b>	0.12	0.05	0.47	0.21
<b>Ga</b>	3.55	0.08	16.48	0.33

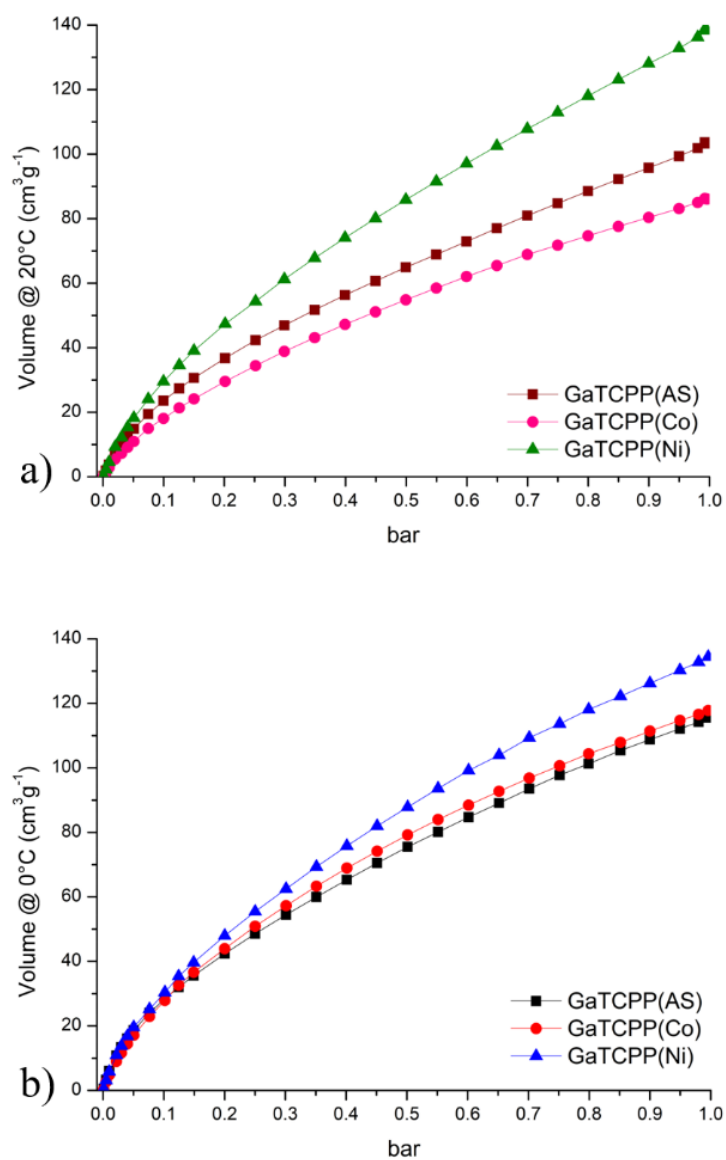


Fig. S 2 a) CO<sub>2</sub> uptake at 20 °C b) CO<sub>2</sub> uptake at 0 °C, for **GaTCPP(AS)**, **GaTCPP(Co)** and **GaTCPP(Ni)**.