materials

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Supplementary

Decorating MOF-Derived Nanoporous Co/C in Chain-Like Polypyrrole (PPy) Aerogel: A Lightweight Material with Excellent Electromagnetic Absorption

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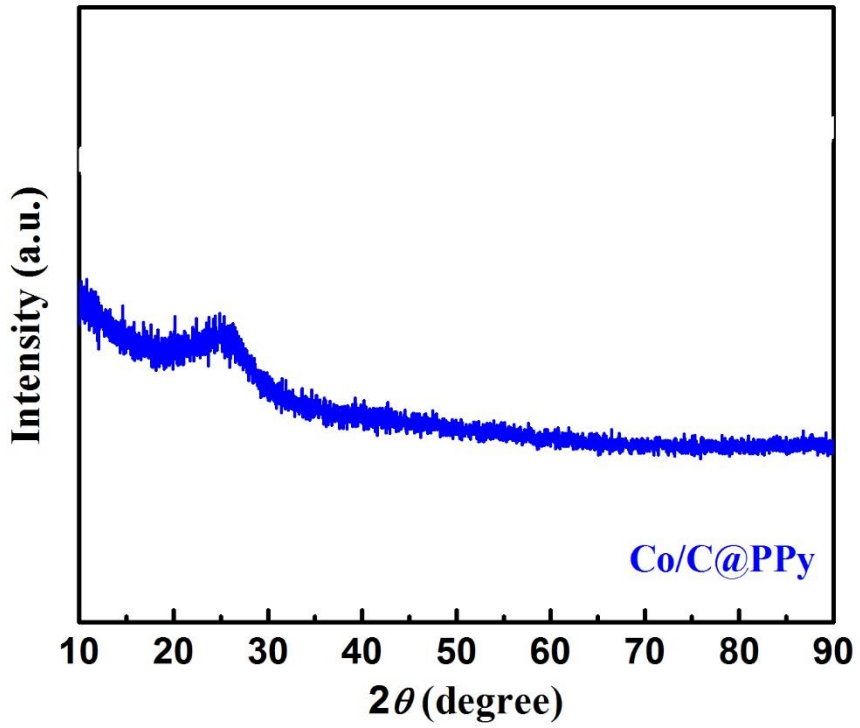

Figure. S1 XRD patterns of Co/C@PPy.

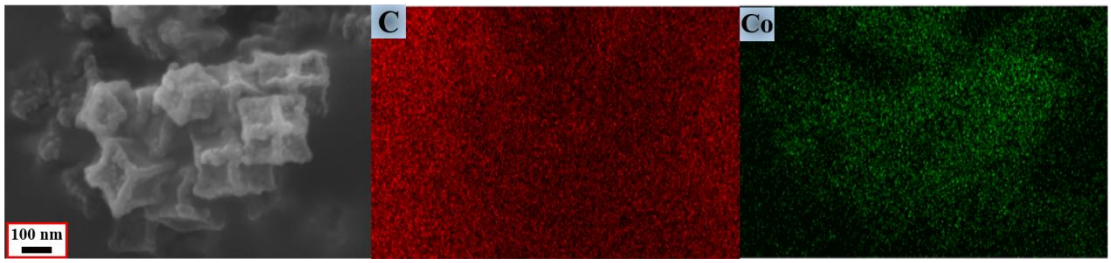

Figure. S2 Elemental mappings of C and Co for Co/C composites.

To well understand the formation process of Co/C composites during the heat treatment, the precursor, ZIF-67, are thermally analyzed by TGA in air and Ar atmosphere in the temperature range of 0 - 700°C with a heating rate of 10°C min^{-1}. For the curve tested under air atmosphere, the decline indicates that ZIF-67 underwent a drastic weight loss between 310°C and 490°C. No further weight loss occurred indicates that the complete decomposition of the organic ligands in ZIF-67. When

subjected to heat treatment under Ar atmosphere, the relative low weight loss in decomposition (20.5%, 400°C -600°C) mainly results from the generation of carbon materials.

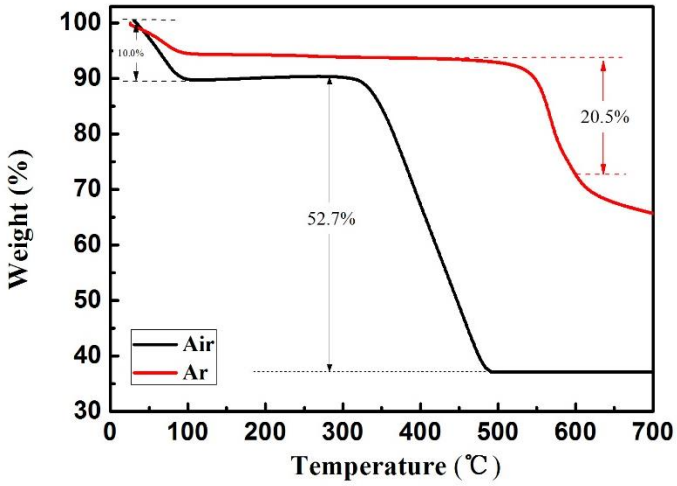

Figure. S3 TG curves of ZIF-67 under air and Ar atmosphere.

Table S1 EA performance of typical MOF-derived Co/C or PPy based composites reported in this work and recent literatures (NPC: nanoparticles; CIP: carbonyl iron powder; Z-BCF:Z-type barium ferrite).

Composite	(wt%)	Thickness (mm)	bandwidth (GHz)	Optimal RL (dB)	Ref.
Co/C/MWCNTs	15	1.10	~2.50	−48.90	[1]
Co/C	60	2.50	5.80	−35.30	[2]
Co/C	30	2.00	3.80	−39.60	[3]
ZnO/NPC@Co/NPC	50	1.90	4.20	−28.80	[4]
CIP@PPy	33	2.20	6.10	−39.50	[5]
Co/PPy	30	2.00	4.77	−33.00	[6]
Fe_3O_4/PPy	30	1.70	4.00	−35.70	[7]
PPy/carbon	40	3.00	1.09	−38.10	[8]
(Z−BCF/SiO_2)@PPy	66.67	2.00	5.06	−19.65	[9]
Co/C@PPy	5	3.00	5.20	−17.85	This
Co/C@PPy	10	2.00	6.56	−44.76	work

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