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Ultrastable Conductive Microporous Covalent Triazine Frameworks Based on Pyrene Moieties Provide High-Performance CO_2 Uptake and Supercapacitance

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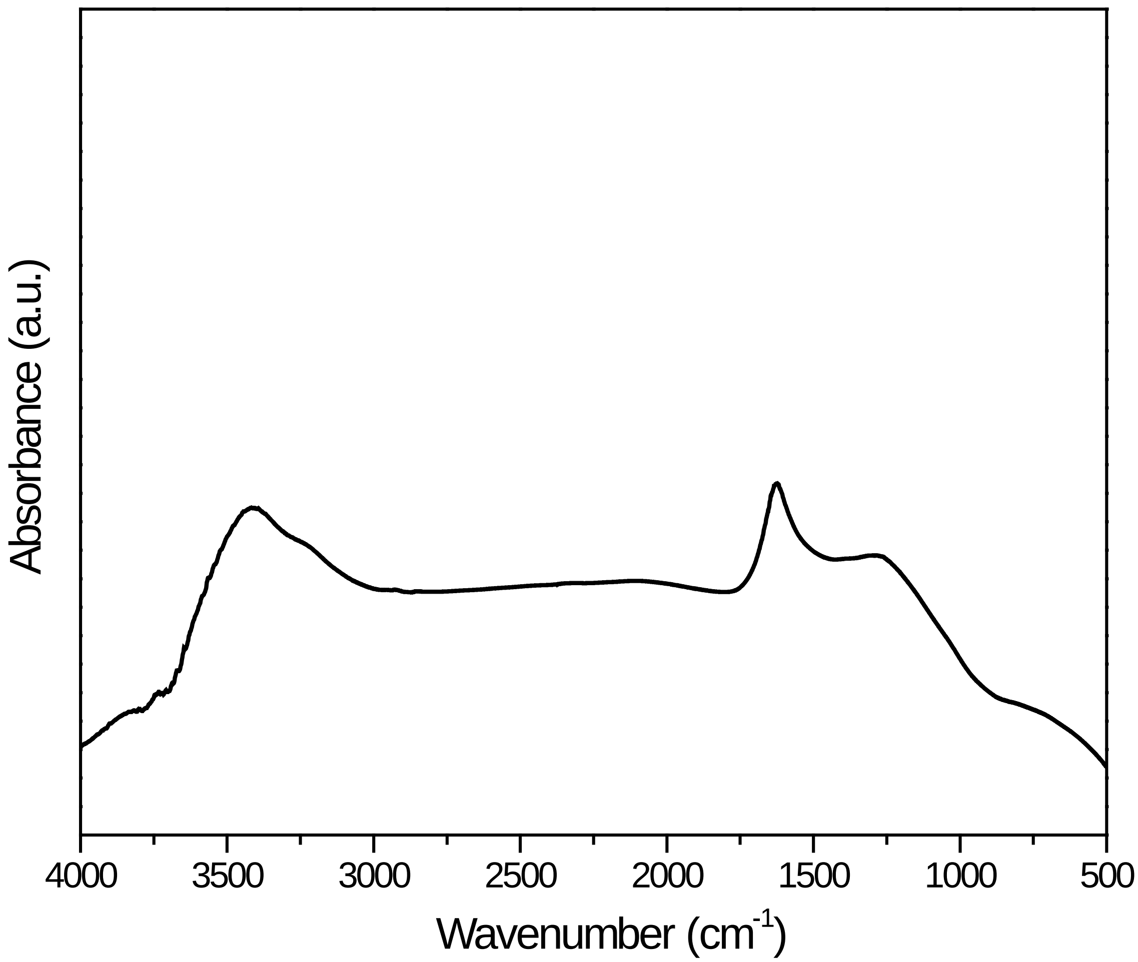

Figure S1. FT-IR profile of Pyrene-CTF-20.

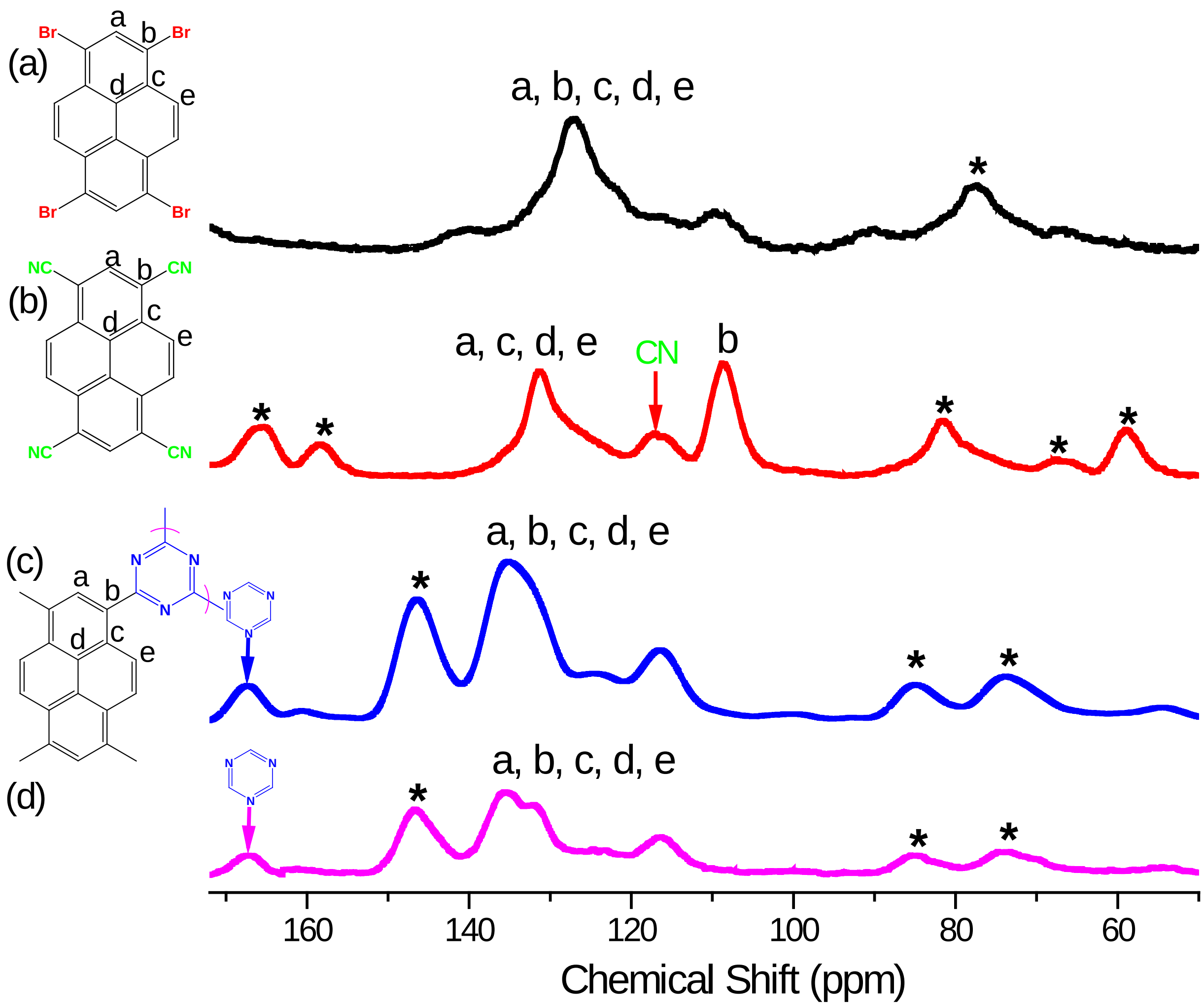

Figure S2. ^{13}C CP/MAS NMR spectra of (a) TBrPy, (b) TCNPy, (c) Pyrene-CTF-10 and (d) Pyrene-CTF-20.

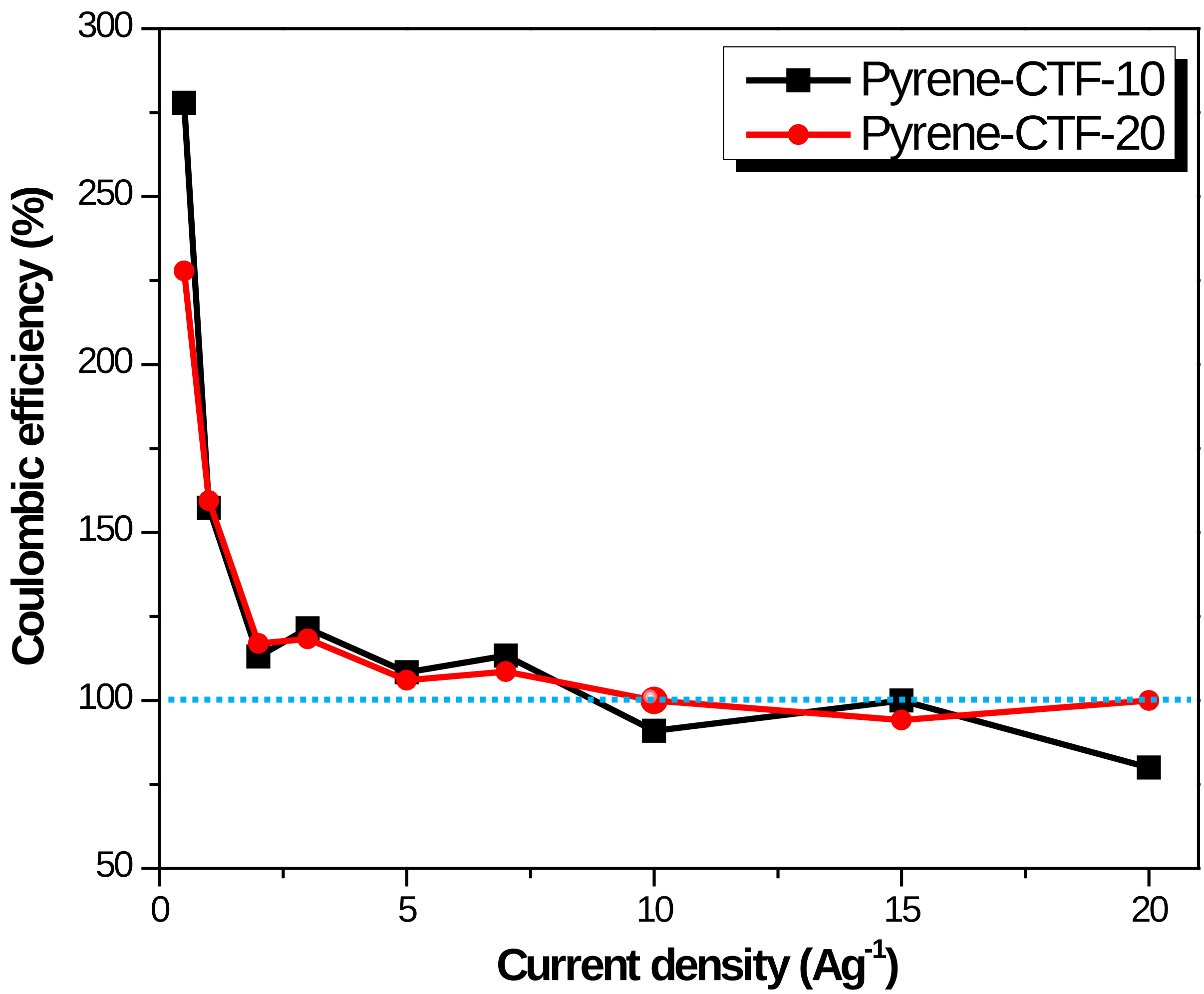

Figure S3. Coulombic efficiency vs Current density (Ag^{-1}) of Pyrene-CTF-10 and Pyrene-CTF-20.

Material	Surface area (m^2g^{-1})	Capacitance	Ref.
Porous carbon derived from MOF	1276	270 F/g @ 2 Ag^{-1}	S1
Nitrogen-doped graphitic carbon	1327	255 F/g@ 2 Ag^{-1}	S2
Phenolic formaldehyde resin	1256	261 F/g @ 0.05 Ag^{-1}	S3
Amorphous Terephthalonitrile derived nitrogen-rich framework	1681	298 F/g @ 0.2 Ag^{-1}	S4
Triazine containing porous organic	317	151.3 F/g @ 0.1Ag^{-1}	S5
Carbonization of Triazine-based covalent organic polymer	2003	278 F/g @ 1.0 Ag^{-1}	S6
Triazine N doped carbon derivatives	1268	325 F/g @ 0.5 Ag^{-1}	S7
Nitrogen-enriched Nanoporous Polytriazine	838	656 F/g @ 1.0 Ag^{-1}	S8
Covalent Traizine framework	651	354 F/g @ 2 mV/s	S9
Covalent Triazine-Based Framework	3600	380 F/g @ 0.2 Ag^{-1}	S10
Covalent triazine-based frameworks	29	122.6 F/g @ 1.0mV/s	S11
Porous triazine-based frameworks	2482	151.3 F/g @ 0.1 Ag^{-1}	S12
Benzimidazole grafted graphene		410 F/g @ 0.4 Ag^{-1}	S13
Nitrogen-enriched porous carbon sphere		410 F/g @ 1 Ag^{-1}	S14
Pyrene-based covalent triazine frameworks	1019	500 F/g @ 0.5mV/s	This work

Table S1. Performance comparison of various CTF and porous carbons materials.

Table S2. Performance comparison of Pyrene-CTFs and other reported CTFs for CO_2 uptake.

Samples	CO_2 uptake (mmole/g)		Ref
	298 K	273 K	
Pyrene-CTF-10	2.82	5.10	This work
Pyrene-CTF-20	2.54	3.43	This work
CTF-Ph	-	3.05	S15
CTF-20-400	-	3.48	S16
CTF-5-500	-	3.02	S16
TPC-1	-	4.90	S17
cCTF-400	-	2.86	S18
cCTF-500	-	3.022	S18
CTF-1-600	-	3.83	S19

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