Supplementary Material (ESI) for Journal of Materials Chemistry
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Electronic Supplementary Information for:

An extended 9,9'-spirobifluorene based Metal-Organic Framework: synthesis, structure analysis and gas sorption properties.

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SI-1. ^{1}H *NMR spectra of* ***3*** *and* ***L***

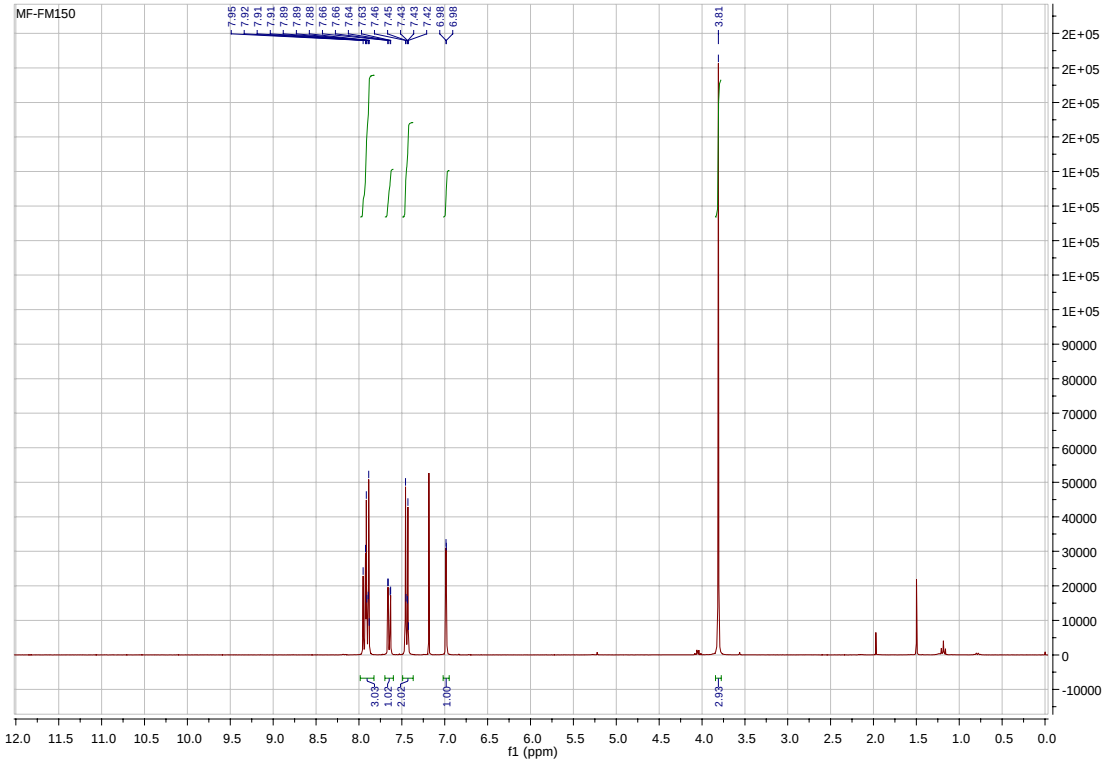

Figure S1. ^{1}HNMR spectra of **3** in $CDCl_3$

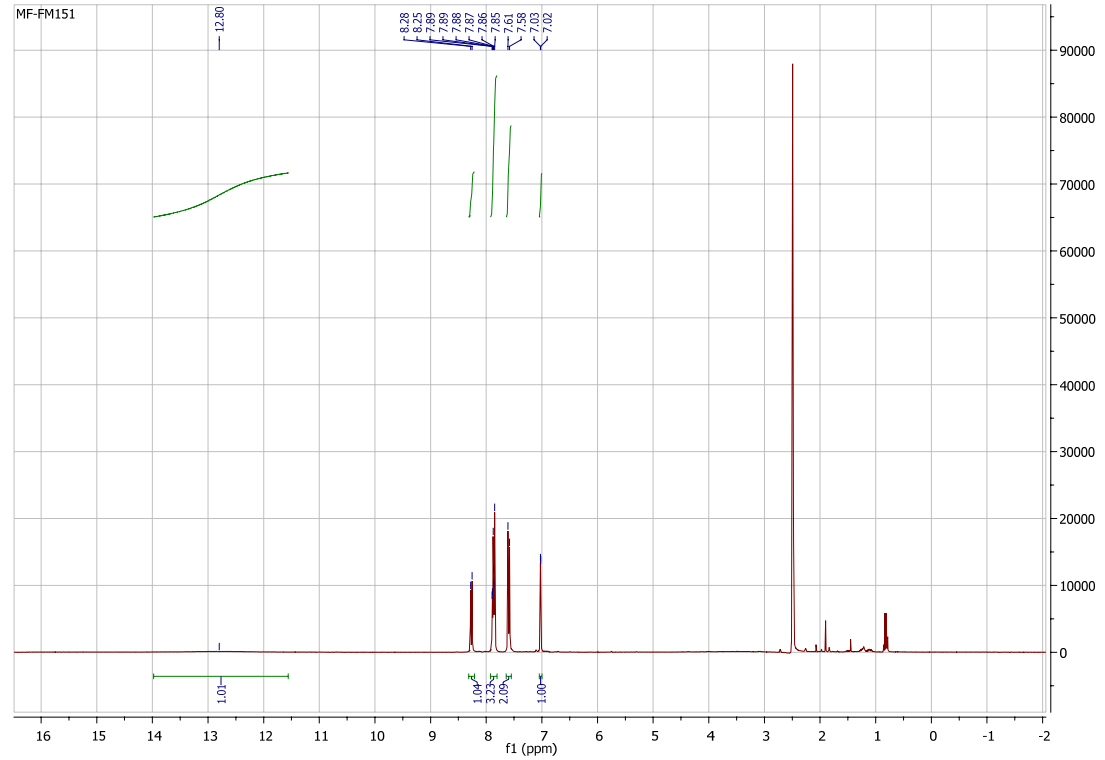

Figure S2. ^{1}H NMR spectra of **L** in [D6]DMSO

SI-2. ^{13}C *NMR spectra of* ***3*** *and* ***L***

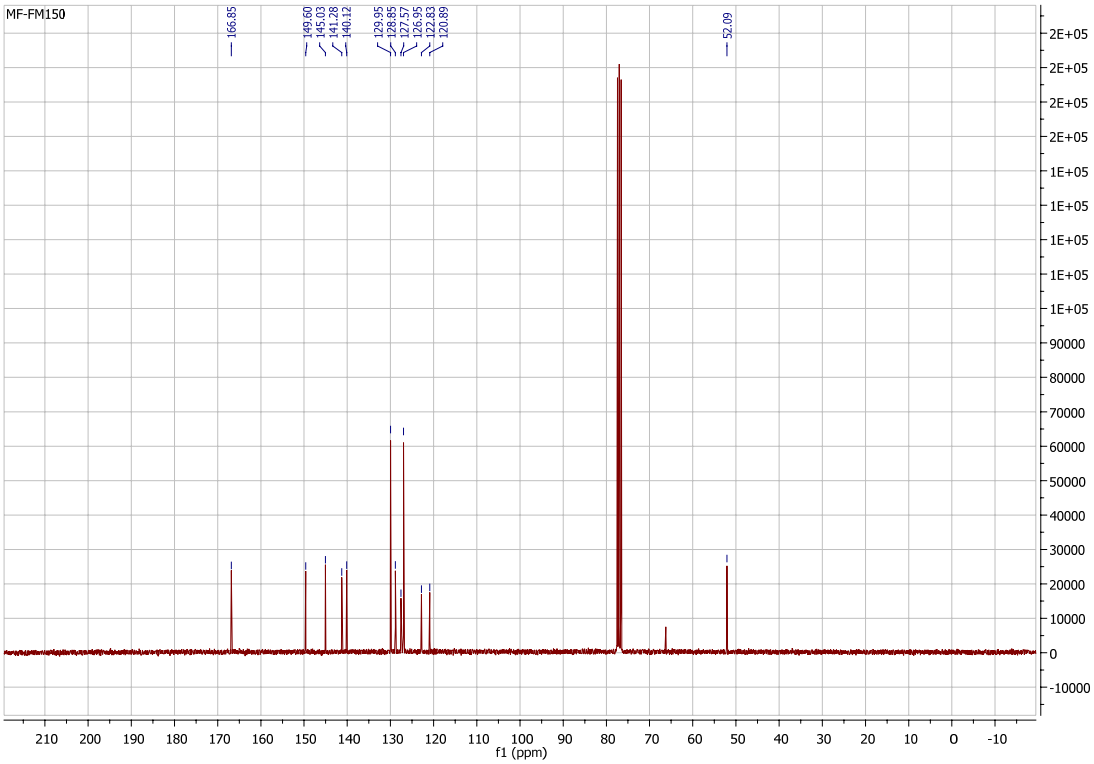

Figure S3. ^{13}C NMR spectra of **3** in $CDCl_3$

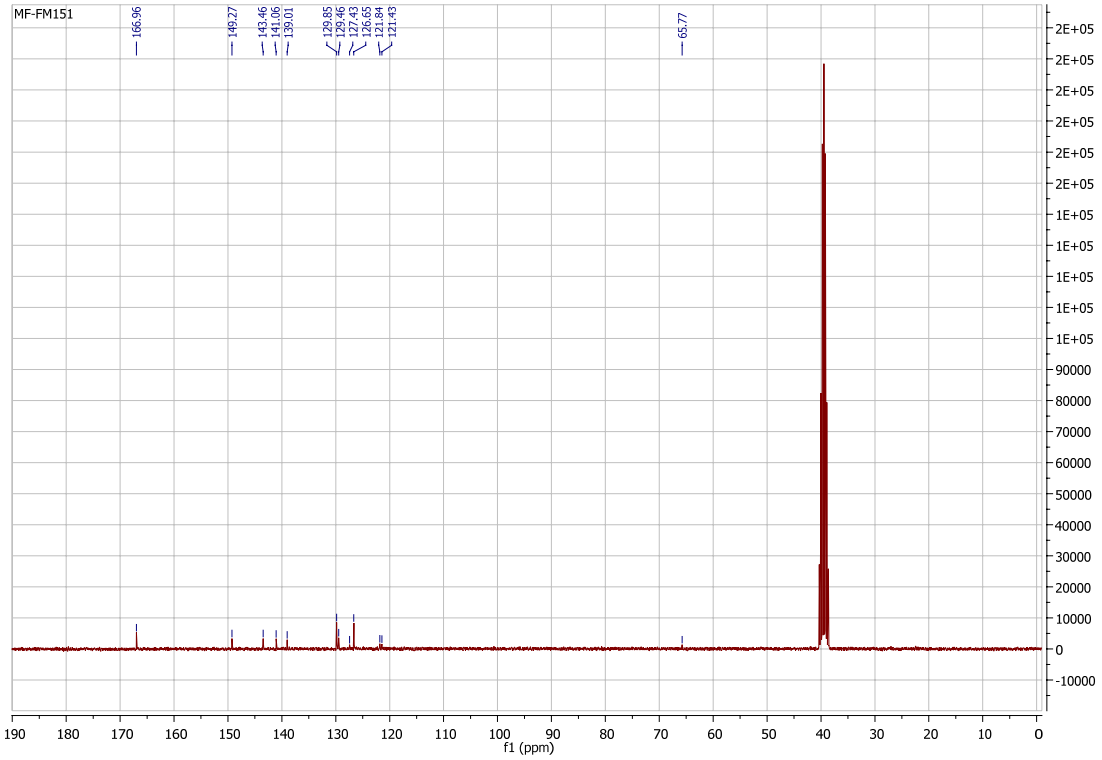

Figure S4. ^{13}C NMR spectra of **L** in [D6]DMSO

SI-3. *IR transmission spectra of* ***3****,* ***L****,* ***SBF-Cu,*** *and* ***SBF-Cu_act***

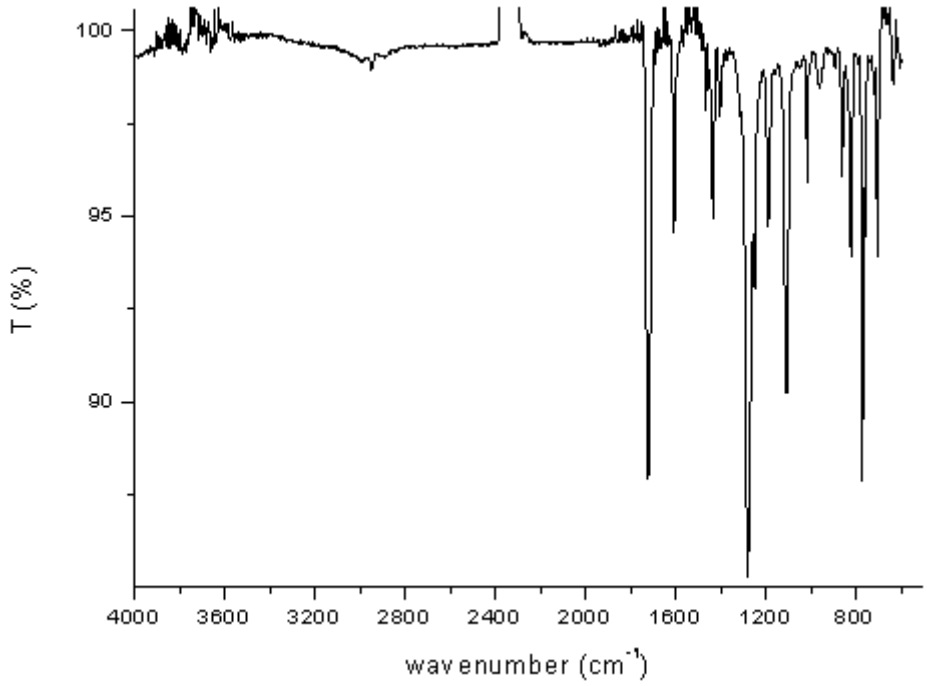

Figure S5. IR transmission spectra of **3**

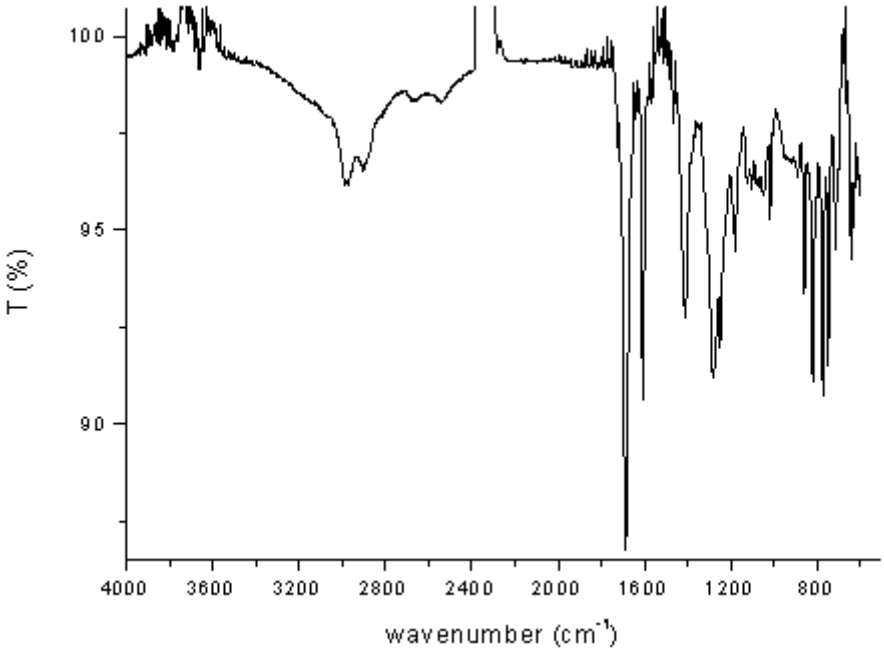

Figure S6. IR transmission spectra of **L**

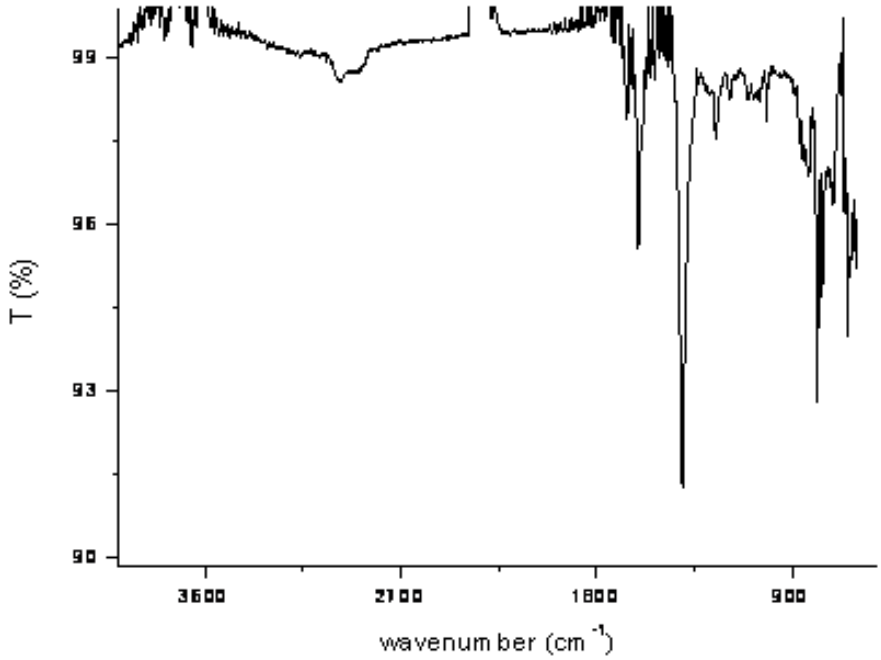

Figure S7. IR transmission spectra of **SBF-Cu**

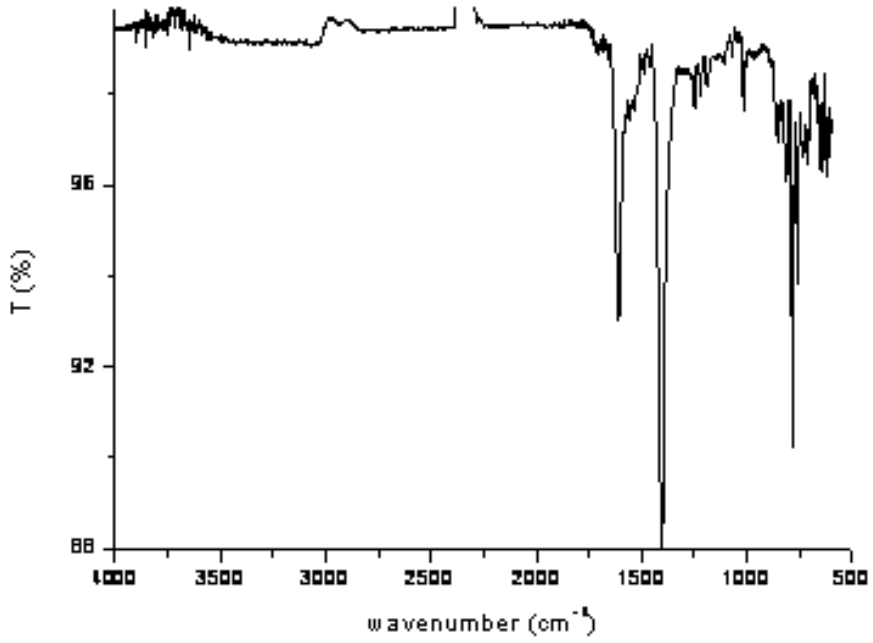

Figure S8. IR transmission spectra of **SBF-Cu_act**

SI-4. *UV-Vis absorption spectra of* ***3*** *and* ***L***

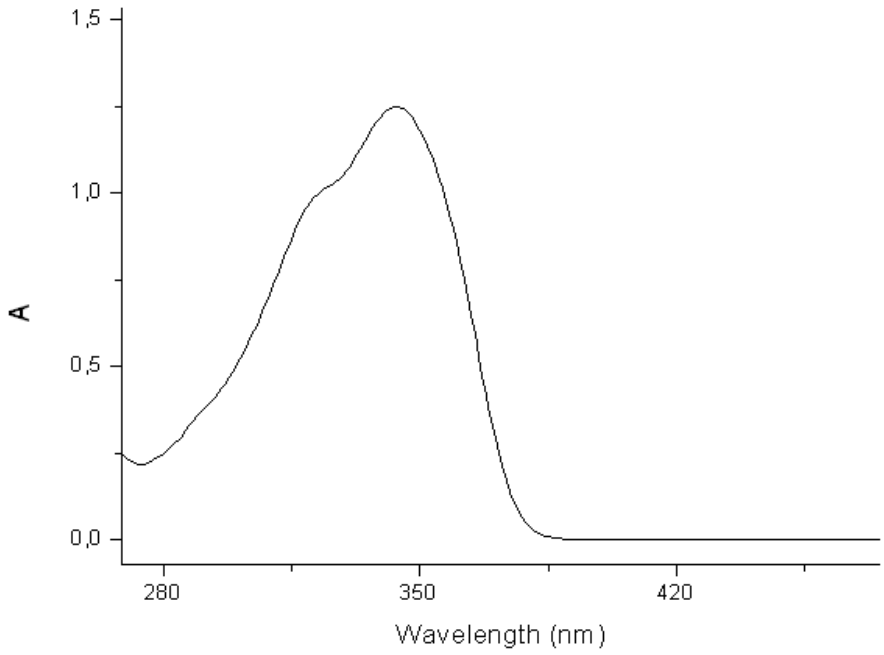

Figure S9. UV-Vis absorption spectra of **3**

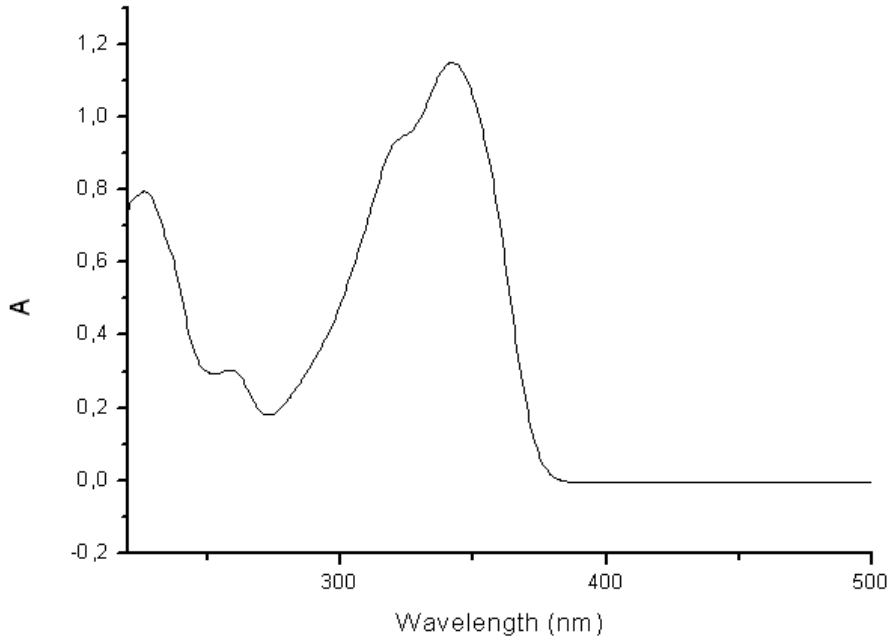

Figure S10. UV-Vis absorption spectra of **L**

SI-5. Table S1 : *Selected distances and angles within the crystal structure of SBF-Cu*

Within Copper paddle-wheel

Cu1—O2^{i}	1.950 (2)	O6—C27	1.246 (3)
Cu1—O6^{ii}	1.955 (2)	O2—C27	1.265 (4)
Cu1—O19^{iii}	1.961 (2)	O6—C27—O2	124.8 (3)
Cu1—O14	1.962 (2)	O19—C14	1.236 (4)
Cu1—O20	2.177 (2)	O14—C14	1.263 (4)
Cu1—Cu1^{iii}	2.6249 (10)	O19—C14—O14	124.7 (3)
O2^{i}—Cu1—O6^{ii}	168.23 (9)	O19^{iii}—Cu1—O14	167.93 (10)
O2^{i}—Cu1—O19^{iii}	89.29 (11)	O2^{i}—Cu1—O20	98.82 (9)
O6^{ii}—Cu1—O19^{iii}	88.41 (11)	O6^{ii}—Cu1—O20	92.84 (9)
O2^{i}—Cu1—O14	89.06 (11)	O19^{iii}—Cu1—O20	93.75 (10)
O6^{ii}—Cu1—O14	90.78 (11)	O14—Cu1—O20	98.32 (11)

Hydrogen-bond geometry (Å, °)

D—H···*A*	*D*—H	H···*A*	*D*···*A*	*D*—H···*A*
C23—H23···O6	1.10	2.49	2.796 (4)	94

Metal—*D* ···*A*	*Metal*—D	D···*A*	*Meta* —*D* ···*A*
Cu1—O20—Hw···O19^{v}	2.177(2)	3.243 (3)	141.58 (11)
Cu1—O20—Hw···O6^{iv}	2.177(2)	3.321 (3)	108.17 (10)

Symmetry codes: (i) $x, y-1, -z-1/2$; (ii) $x-1, -y+2, z+1/2$; (iii) $-x-1, -y+1, -z$; (iv) $-x, -y+2, -z$; (v) $x, -y+1, z+1/2$.

SI-6. *Useful figures for evaluation of π-π interactions between the layers of* ***SBF-Cu***

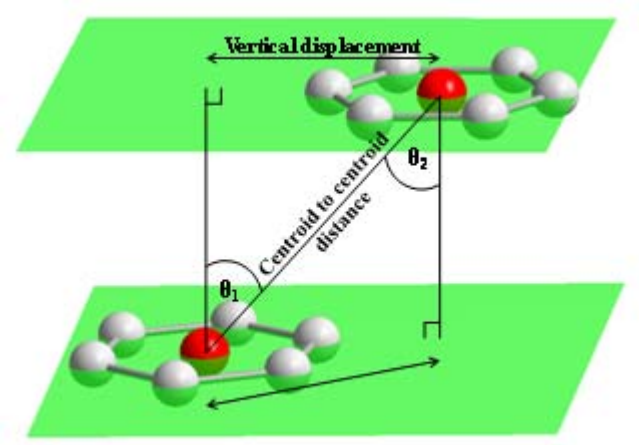

Figure S11. Parameters used for evaluation of the strength of π-π interactions. (θ_1, θ_2: slippage angles)

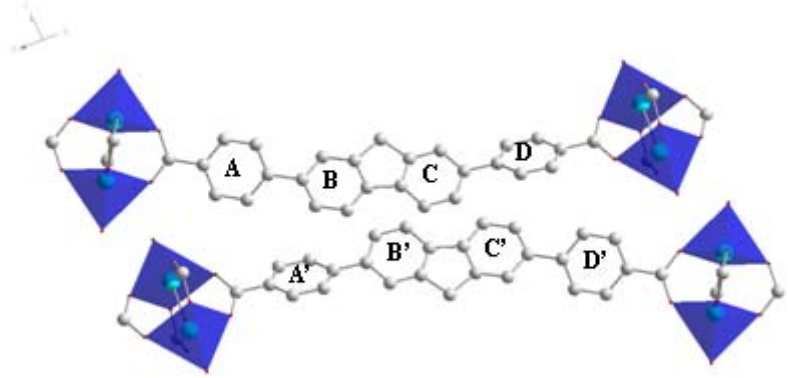

Figure S12. Representation of the closest aryl-fluorene-aryl groups from two layers of SBF-Cu.

SI-7. ***SBF-Cu_act*** *remains crystalline after gas sorption measurements.*

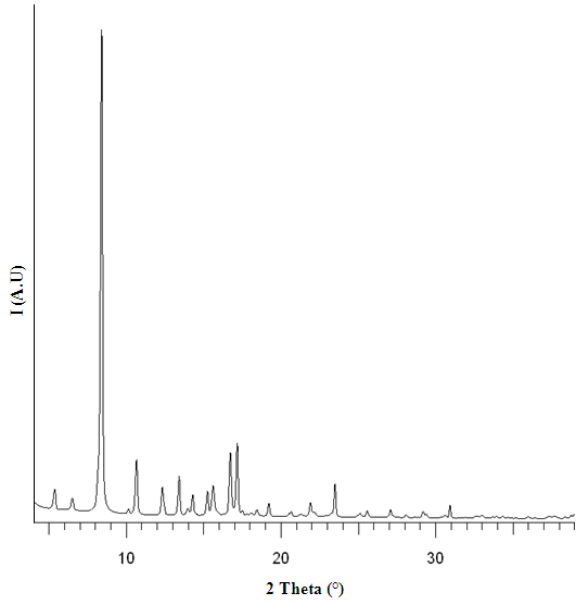

Figure S13. X-ray Powder diffraction pattern of SBF-Cu_act after gas sorption measurements.

SI-8. *Asymmetric unit of the crystal structure of* ***SBF-Cu***.

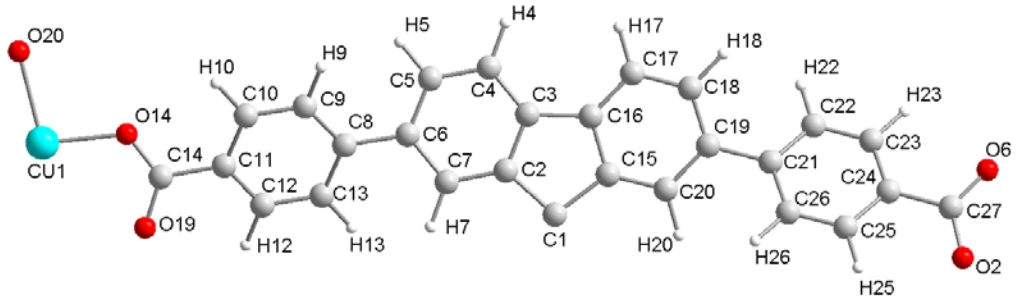

Figure S14. Representation of the asymmetric unit of the crystal structure of SBF-Cu and its atoms labels.

SI-9. *EDS Analysis of* ***SBF-Cu***.

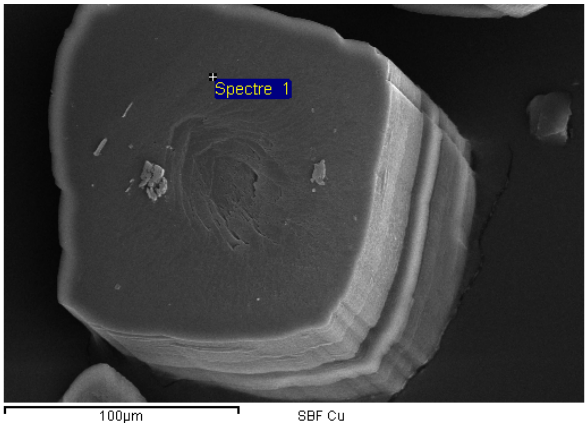

Figure S15. Scanning electron microscopy picture of a single crystal of SBF-Cu.

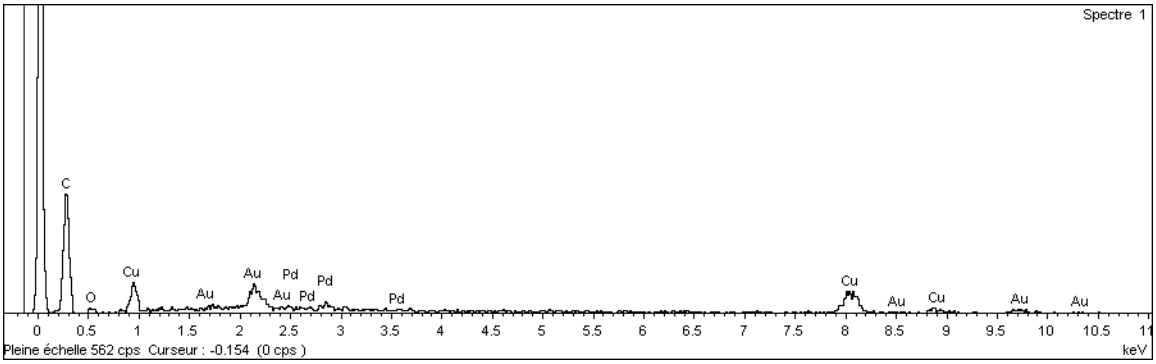

Figure S16. Energy dispersive spectrum of SBF-Cu.

Element	% Mass	% Atomic
C K	76.07	90.22
O K	6.63	5.90
Cu K	17.30	3.88

Table S2. Energy dispersive spectroscopy analysis of SBF-Cu.