Electronic Supplementary Material (ESI) for Dalton Transactions.

Supporting Information

Reversible lithium storage in porphyrin-based MOF (PCN-600) with exceptional high capacity and stability

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Table S1. Metal organic frameworks as anode materials in LIBs.

MOFs	VS/Li/Li$^+$	CD (A g^{-1})/C rate	SC (mA h g^{-1})	CN	Ref.
MOF-177	0.05-1.6	0.05 A g^{-1}	100	-	[S1]
$Li_2C_8H_4O_4$	0.7-3.0	1C	125	80	[S2]
$Zn_3(HCOO)_6$	0.005-3.0	0.06 A g^{-1}	560	60	[S3]
Li-NTC	0.01-3.0	0.1 A g^{-1}	500	80	[S4]
Mn-LCP	0.01-2.5	0.05 A g^{-1}	390	-	[S5]
$[Li_6(pda)_3]\cdot 2EtOH$	0.2-2	0.03 A g^{-1}	200	50	[S6]
$Co_2(OH)_2BDC$	0.02-3	0.05 A g^{-1}	650	100	[S7]
$M_3^{II}[Co^{III}(CN)_6]_2\cdot nH_2O$	0.01-3.0	0.02 A g^{-1}	299	40	[S8]
$[Cu_2(C_8H_4O_4)_4]_n$	0.01-2.5	0.048 A g^{-1}	194	50	[S9]
$Zn(IM)_{1.5}(abIM)_{0.5}$	0.01-3.0	0.1 A g^{-1}	150	200	[S10]
Ni–Me_4bpz	0.01-3.0	0.05 A g^{-1}	120	100	[S11]
Asp-Cu	0.01-3.0	0.05 A g^{-1}	233	200	[S12]
Mn-BTC	0.01-2.0	0.1 A g^{-1}	694	100	[S13]
$Co_{0.6}Zn_{0.4}(BDC)(DMF)_x$	0.01-3.0	2 A g^{-1}	622	500	[S14]
CoBTC-EtOH	0.01-3.0	0.1 A g^{-1}	856	100	[S15]
Cd(HTTPCA)	0.1-3.0	0.1 A g^{-1}	350	100	[S16]
Co_2(DOBDC)	0.01-3.0	0.5 A g^{-1}	526.1	200	[S17]
[Ni(4,4'-bpy)(tfbdc)(H_2O_2)]	0.1-3.0	0.05 A g^{-1}	406	50	[S18]
ZIF-8	0.01-3.0	0.2C	335	70	[S19]
$[Pb(4,4'\text{-ocppy})_2]\cdot 7H_2O$	0.01-3.0	0.1 A g^{-1}	489	500	[S20]
PCN-600	0.01-3.0	0.4 A g^{-1}	1130	300	This work

CD: current density, SC: Specific capacity, CN: cycle number.

References:

[S1] X. Li, F. Cheng, S. Zhang and J. Chen, *J. Power Sources* **2006**, *160*, 542-547.

[S2] M. Armand, S. Grugeon, H. Vezin, S. Laruelle, P. Ribière, P. Poizot and J. M. Tarascon, *Nat. Mater.* **2009**, *8*, 120.

[S3] K. Saravanan, M. Nagarathinam, P. Balaya and J. J. Vittal, *J. Mater. Chem.* **2010**, *20*, 8329-8335.

[S4] X. Han, F. Yi, T. Sun and J. Sun, *Electrochem. Commun.* **2012**, *25*, 136-139.

[S5] Q. Liu, L. Yu, Y. Wang, Y. Ji, J. Horvat, M.-L. Cheng, X. Jia and G. Wang, *Inorg. Chem.* **2013**, *52*, 2817-2822.

[S6] L. Gou, H.-X. Zhang, X.-Y. Fan and D.-L. Li, *Inorg. Chim. Acta* **2013**, *394*, 10-14.

[S7] L. Gou, L.-M. Hao, Y. X. Shi, S.-L. Ma, X.-Y. Fan, L. Xu, D.-L. Li and K. Wang, *J. Solid State Chem.* **2014**, *210*, 121-124.

[S8] P. Nie, L. Shen, H. Luo, B. Ding, G. Xu, J. Wang and X. Zhang, *J. Mater. Chem. A* **2014**, *2*, 5852-5857.

[S9] R. Senthil Kumar, C. Nithya, S. Gopukumar and M. Anbu Kulandainathan, *Energy Tech.* **2014**, *2*, 921-927.

[S10] Y. Lin, Q. Zhang, C. Zhao, H. Li, C. Kong, C. Shen and L. Chen, *Chem. Commun.* **2015**, *51*, 697-699.

[S11] T. An, Y. Wang, J. Tang, Y. Wang, L. Zhang and G. Zheng, *J. Colloid Interface Sci.* **2015**, *445*, 320-325.

[S12] C. Zhao, C. Shen and W. Han, *RSC Adv.* **2015**, *5*, 20386-20389.

[S13] S. Maiti, A. Pramanik, U. Manju and S. Mahanty, *ACS Appl. Mater. Interfaces* **2015**, *7*, 16357-16363.

[S14] C. Li, X. Hu, X. Lou, Q. Chen and B. Hu, *Chem. Commun.* **2016**, *52*, 2035-2038.

[S15] C. Li, X. Lou, M. Shen, X. Hu, Z. Guo, Y. Wang, B. Hu and Q. Chen, *ACS Appl. Mater. Interfaces* **2016**, *8*, 15352-15360.

[S16] X.-M. Lin, J.-L. Niu, J. Lin, L.-M. Wei, L. Hu, G. Zhang and Y.-P. Cai, *Inorg. Chem.* **2016**, *55*, 8244-8247.

[S17] Y. Liao, C. Li, X. Lou, P. Wang, Q. Yang, M. Shen and B. Hu, *J. Colloid Interface Sci.* **2017**, *506*, 365-372.

[S18] C. Shi, X. Wang, Y. Gao, H. Rong, Y. Song, H.-J. Liu and Q. Liu, *J. Solid State Electrochem.* **2017**, *21*, 2415-2423.

[S19] Z. Li, X. Huang, C. Sun, X. Chen, J. Hu, A. Stein and B. Tang, *J. Mater. Sci.* **2017**, *52*, 3979-3991.

[S20] L. Hu, X.-M. Lin, J.-T. Mo, J. Lin, H.-L. Gan, X.-L. Yang and Y.-P. Cai, *Inorg. Chem.* **2017**, *56*, 4289-4295.