

Supplementary information for: On electrochemistry of metal-organic framework $Zn_2(EDTA)(H_2O)$

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Table 1S. The list of experiments on ZnMOF synthesis conducted in the work.

Reagents	Synthesis conditions				W, %	Note
	C, M	T, °C	t, h	pH		
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	200	18	3-3.4	0	no solid phase, the presence of a resinous organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	200	24	3-3.4	0	no solid phase, the presence of a resinous organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	200	48	3-3.4	34	the presence of a resinous organic phase, particle size of ~27 μm is formed
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	200	72	3-3.4	63	the presence of a resinous organic phase, particle size of ~65 μm is formed
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	200	96	3-3.4	67	the presence of a resinous organic phase, particle size of ~74 μm is formed
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	100	72	3-3.4	0	no solid phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	120	72	3-3.4	0	no solid phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	160	72	3-3.4	0	no solid phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	170	72	3-3.4	60	particle size of ~39 μm is formed, no organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	180	72	3-3.4	71	particle size of ~42 μm is formed, no organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	190	72	3-3.4	67	the presence of a resinous organic phase, particle size of ~55 μm is formed
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	210	72	3-3.4	0	no solid phase, the presence of a resinous organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	220	72	3-3.4	0	no solid phase, the presence of a resinous organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	180	72	1.6	0	no solid phase, not used KOH

ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	180	72	2.5	0	no solid phase, before the synthesis, there is no complete dissolution of Na ₂ H ₂ EDTA×2H ₂ O
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,085 0,085	180	72	5.4	0	no solid phase, before the start of synthesis, the appearance of blue flakes Zn(OH) ₂
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,17 0,17	180	72	3-3.4	73	particle size of ~62 μm is formed, no organic phase
ZnCl ₂ Na ₂ H ₂ EDTA×2H ₂ O	0,34 0,34	180	72	3-3.4	70	particle size of ~75 μm is formed, the presence of a resinous organic phase

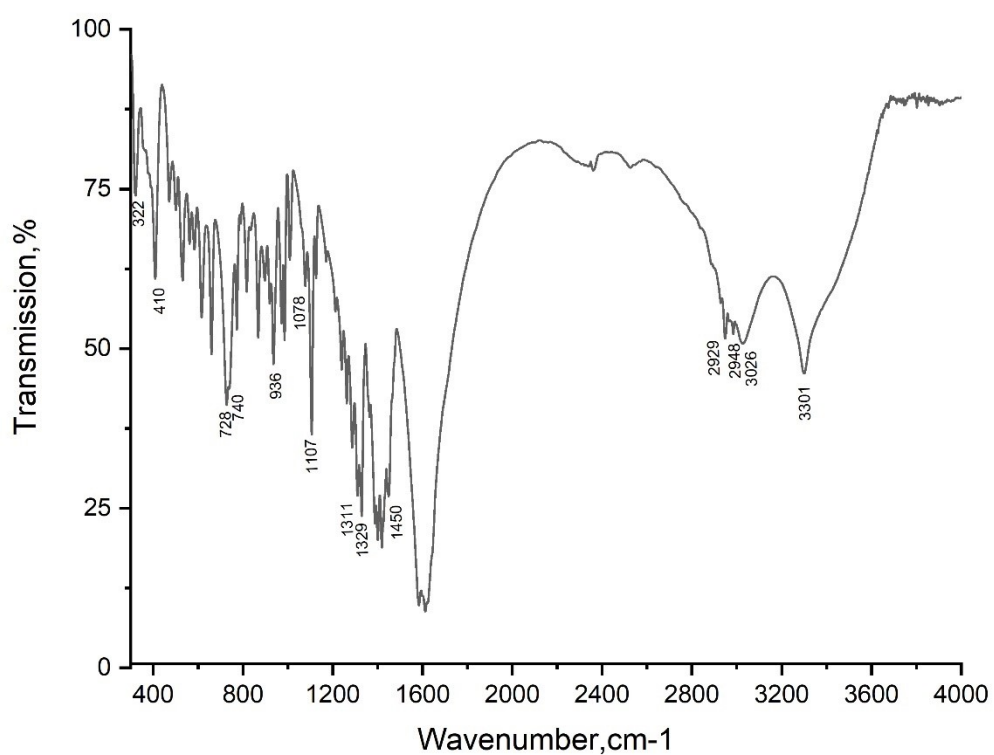


Figure S1- Infrared spectrum of Zn₂(EDTA)H₂O

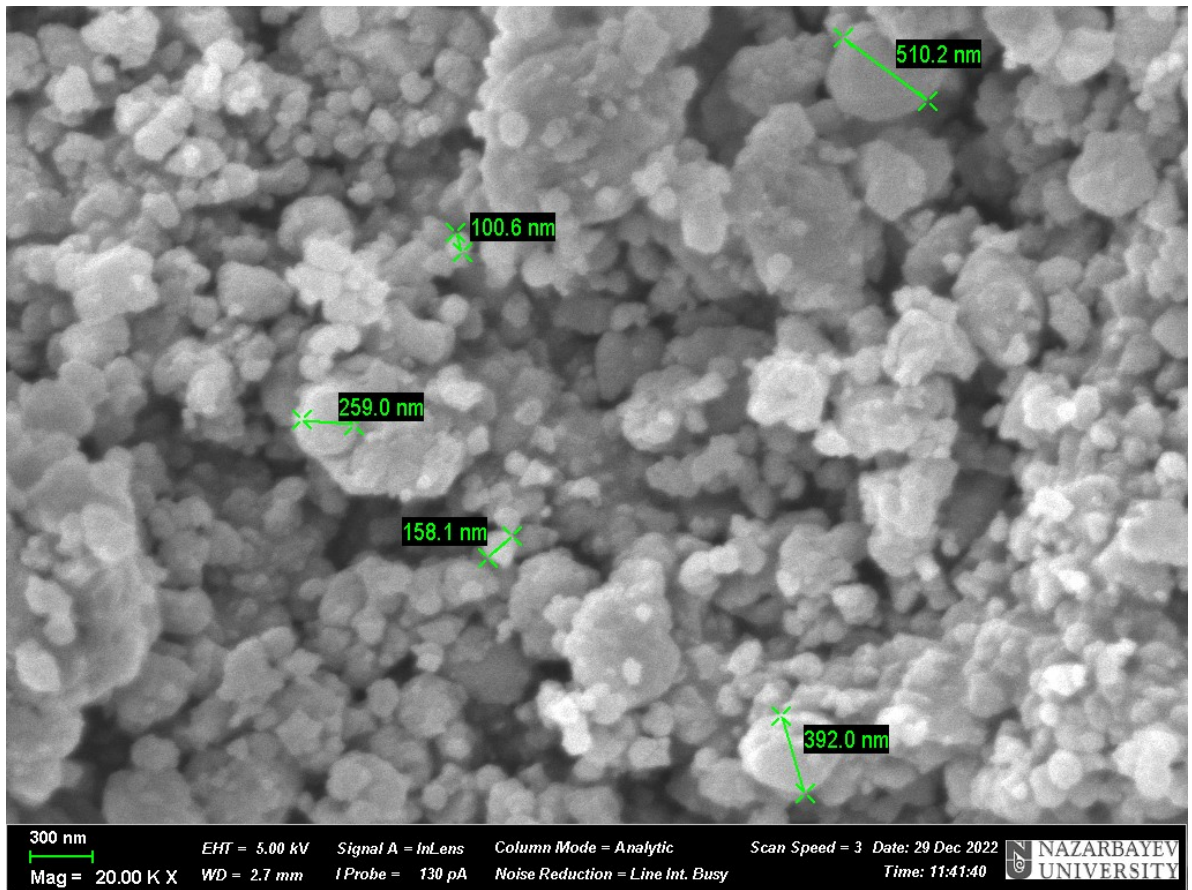


Figure S2 - SEM images of Zn₂(EDTA)H₂O sample after ball-milling with sizes.

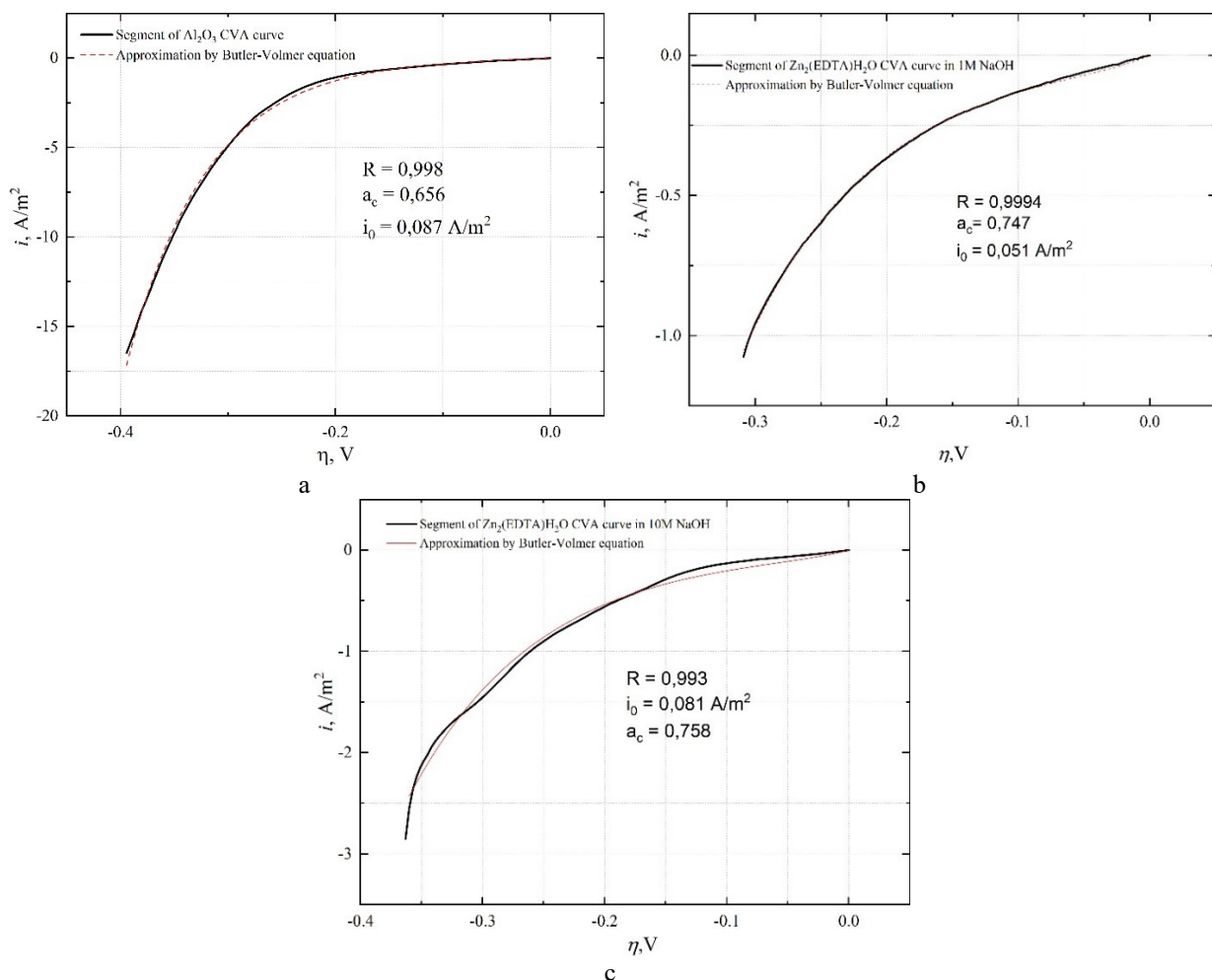


Figure S3 - sections of cyclic voltammograms interpolated by the Butler-Volmer equation, a) an electrode based on Al_2O_3 in 1M NaOH; b) an electrode based on $\text{Zn}_2(\text{EDTA})\text{H}_2\text{O}$ in 1M NaOH; c) electrode based on $\text{Zn}_2(\text{EDTA})\text{H}_2\text{O}$ in 10M NaOH

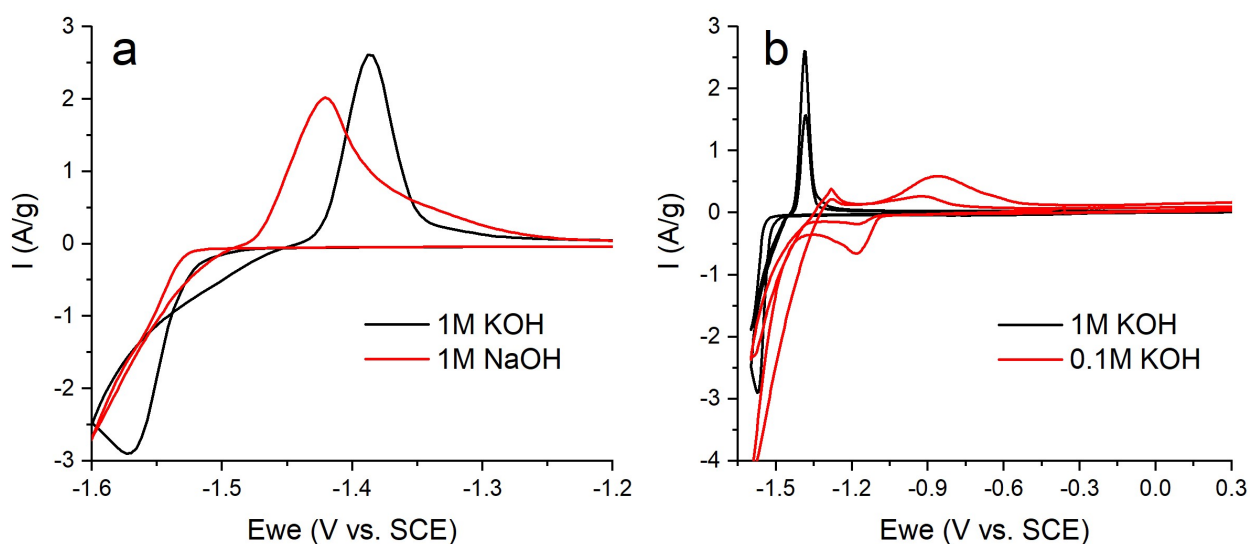


Figure S4 – CV curves of $\text{Zn}_2(\text{EDTA})\text{H}_2\text{O}$ sample at 10 mV/s in a) 1M KOH and NaOH solution; b) 1M and 0.1 M KOH.