Electronic Supplementary Material (ESI) for New Journal of Chemistry.

This journal is © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2024

## **Electronic Supplementary Information**

## Ni-Co alloy *via* controlled pyrolysis of NiCo-MOF as heterogeneous hydrogenation catalyst

Lidan Deng,\*a,b Xingwang Liu, a Chong Chen, a Lu Wang, a Fan Liu, c and Jie Zhang \*a a Chongqing Key Laboratory of Catalysis and New Environmental Materials, College of Environment and Resources, Chongqing Technology and Business University, Chongqing 400067, China.

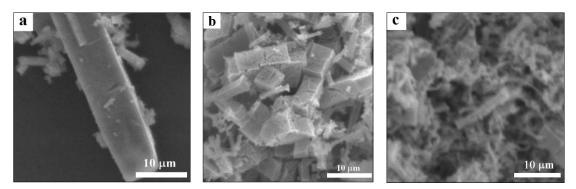
<sup>b</sup>Engineering Research Center for Waste Oil Recovery Technology and Equipment, Ministry of Education, Chongqing Technology and Business University, Chongqing 400067, China.

<sup>c</sup>Chongqing Academy of Metrology and Quality Inspection, Chongqing, China.

**Table S1** The quality of Ni(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O, Co(NO<sub>3</sub>)<sub>2</sub>·6H<sub>2</sub>O, p-phthalic acid and triethylenediamine hexahydrate for the Ni<sub>x</sub>Co<sub>v</sub>-MOF.

Samples	Ni(NO <sub>3</sub> ) <sub>2</sub> ·6H <sub>2</sub> O	Co(NO <sub>3</sub> ) <sub>2</sub> ·6H <sub>2</sub> O	p-phthalic acid	triethylenediamine
	(g)	(g)	(g)	hexahydrate (g)
Ni-MOF	1.225	_	0.700	0.464
Ni <sub>2</sub> Co <sub>1</sub> -MOF	0.817	0.409	0.700	0.464
Ni <sub>1</sub> Co <sub>1</sub> -MOF	0.613	0.613	0.700	0.464
Ni <sub>1</sub> Co <sub>2</sub> -MOF	0.408	0.818	0.700	0.464
Co-MOF	_	1.226	0.700	0.464

Notes: The readability accuracy and repeatability error of the weighing scale are 0.1mg and ±0.1mg, respectively.



**Fig. S1** The SEM images of the catalysts (a)  $Ni_1Co_2/MOF-300$ , (b)  $Ni_1Co_2/MOF-325$ , and (c)  $Ni_1Co_2/MOF-350$ .