

Supplementary Information

(Manuscript ID: NJ-ART-03-2021-001053)

ZIF-8-porous ionic liquids for the extraction of 2,2,3,3-tetrafluoro-1-propanol and water mixture

Zenghui Wang,^a Pingping Zhao,^{*a,b} Jimin Wu,^a Jun Gao,^a Lianzheng Zhang,^a and Dongmei Xu,^{*a}

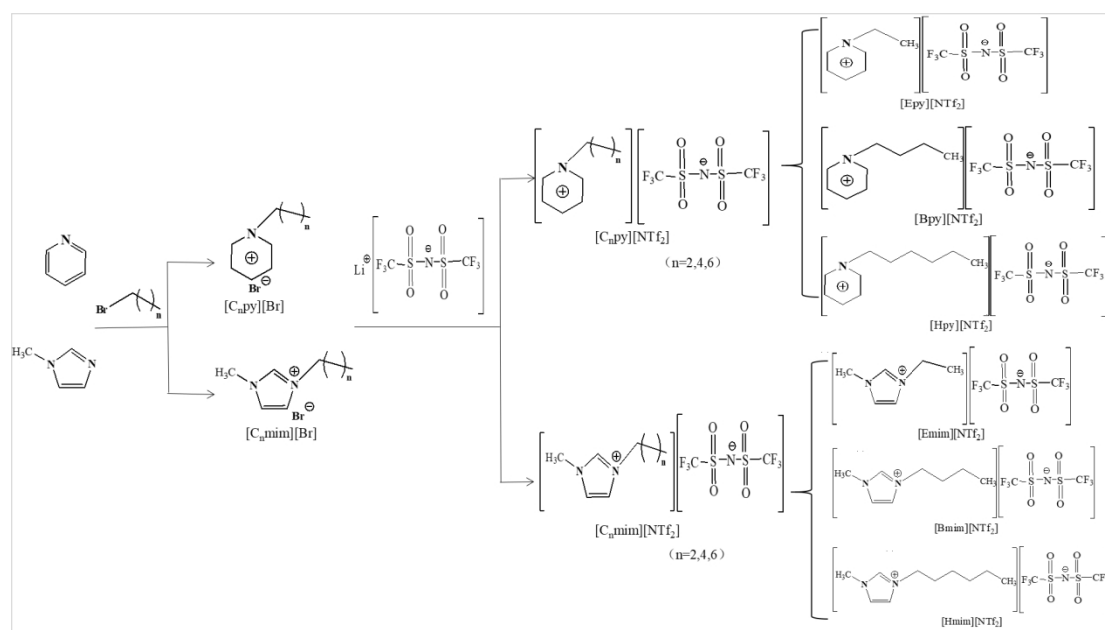
^a College of Chemical and Biological Engineering, Shandong University of Science and Technology, Qingdao 266590, China

E-mail: zhaopingping@sdust.edu.cn

E-mail: xudongmei@sdust.edu.cn

^b Shandong Key Laboratory of Biochemical Analysis, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, P. R. China

E-mail: zhaopingping@sdust.edu.cn



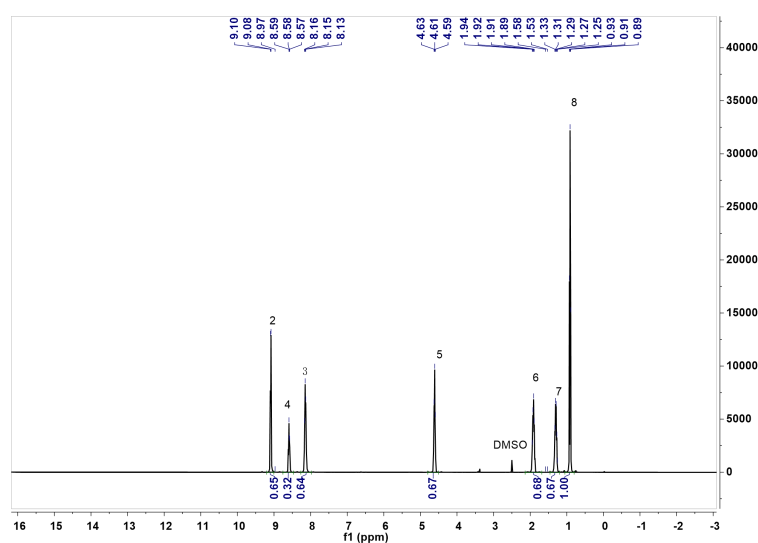
Scheme.S1 Synthesis of various ionic liquids

Table S1 Conditions of GC analysis

Name	Characteristic	Description
Packed column	Specification	GDX-403(2 m×0.53 mm×1.00 μm), Zibo Gannuo Instrument Co., Ltd
Pre-column	Specification	GDX-403(10 cm×0.53 mm×1.00 μm), Zibo Gannuo Instrument Co., Ltd.
Carrier gas	Type	Hydrogen
	Purity	0.9999
	Flow rate	50 mL/min
Injector	Temperature	443.15 K
Oven	Temperature	423.15 K
Detector	Type	Thermal conductivity detector (TCD)
	Temperature	443.15 K

Table S2 The CHNS and ICP elemental analysis of sample and calculated value of Zn(Mim)₂

Samples	C/%	H/%	N/%	Zn/%
ZIF-8=Zn(C ₄ H ₅ N ₂) ₂ calculated value	42.29	4.40	24.67	28.63
ZIF-8 sample	41.58	4.42	24.35	27.96

**Fig.S1** ¹H NMR spectra of [Bpy][NTf₂]

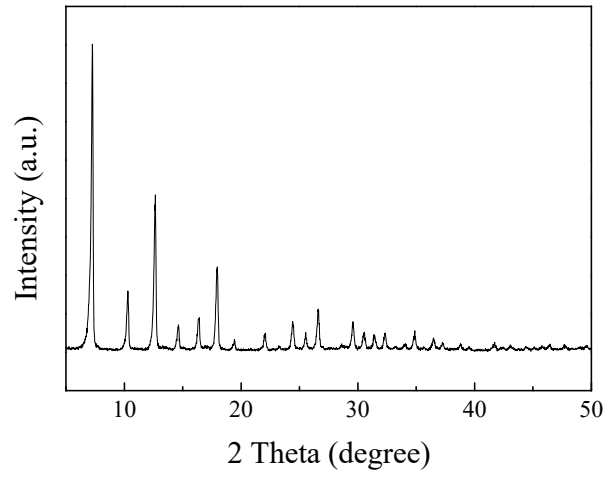


Fig.S2 XRD pattern of ZIF-8

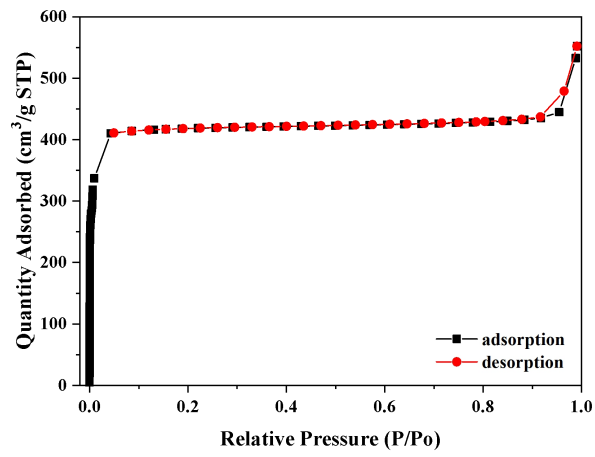


Fig.S3 N₂ adsorption and desorption curves of ZIF-8.

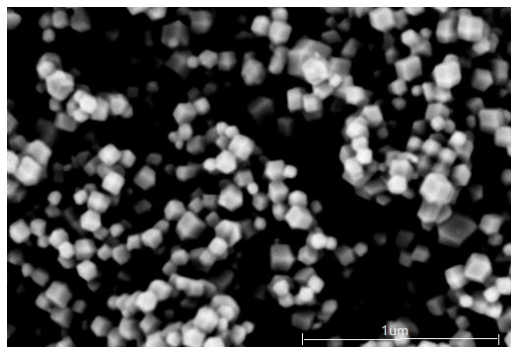


Fig.S4 (A). The SEM image of ZIF-8

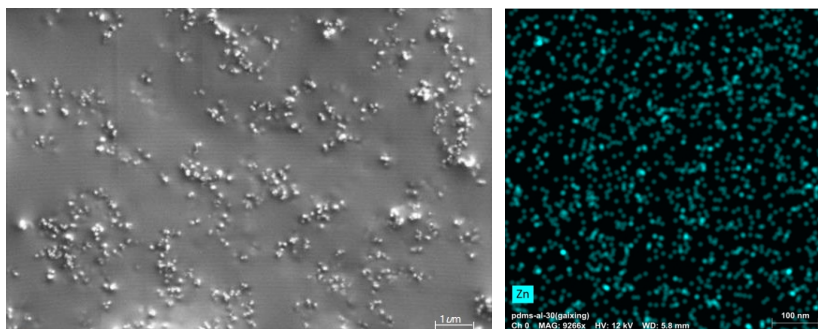


Fig.S4 (B). The SEM image and Zn elemental mapping of ZIF-8/[Bpy][NTf₂].

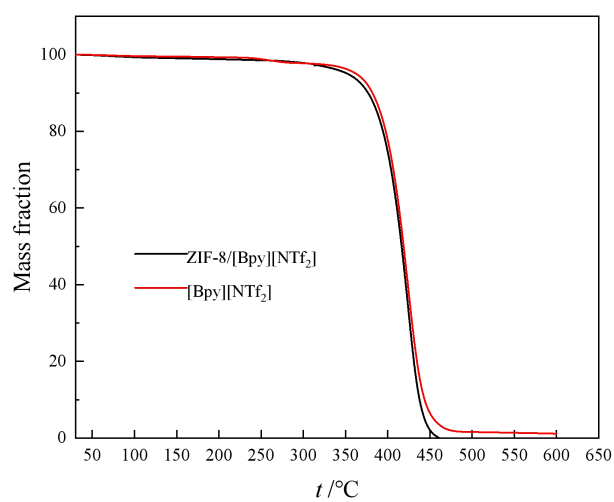


Fig.S5 TGA curves of [Bpy][NTf₂] and ZIF-8/[Bpy][NTf₂].