Supporting Information

Table 1. Preparation conditions for Cr(VI) ion-imprinted composite membranes (Cr(VI)-IICMs).

Membranes	Cr(VI) (mmol)	ADPD (mmol)	EDMA (mmol)	Solvents (v/v, 1:1)	Cr(VI):ADPD :EDMA
Cr(VI)-IICM$_1$	0.5	1.0	20.0	CH_3OH:H_2O	1:2:40
Cr(VI)-IICM$_2$	0.5	1.0	20.0	CH_3CN: H_2O	1:2:40
Cr(VI)-IICM$_3$	0.5	1.0	20.0	C_3H_7OH: H_2O	1:2:40
Cr(VI)-IICM$_4$	0.5	1.0	20.0	C_2H_5OH: H_2O	1:2:40
Cr(VI)-IICM$_5$	0.5	2.0	20.0	C_2H_5OH: H_2O	1:4:40
Cr(VI)-IICM$_6$	0.5	3.0	20.0	C_2H_5OH: H_2O	1:6:40
Cr(VI)-IICM$_7$	0.5	4.0	20.0	C_2H_5OH: H_2O	1:8:40
Cr(VI)-IICM$_8$	0.5	3.0	5.0	C_2H_5OH: H_2O	1:6:10
Cr(VI)-IICM$_9$	0.5	3.0	10.0	C_2H_5OH: H_2O	1:6:20
Cr(VI)-IICM$_{10}$	0.5	3.0	15.0	C_2H_5OH: H_2O	1:6:30
Cr(VI)-IICM$_{11}$	0.5	3.0	25.0	C_2H_5OH: H_2O	1:6:50

*Amount of initiator (AIBN) used was 15.0 mg.

Scheme 1. Synthesis of 2-allyl-1,3-diphenyl-1,3-propanedione (ADPD).

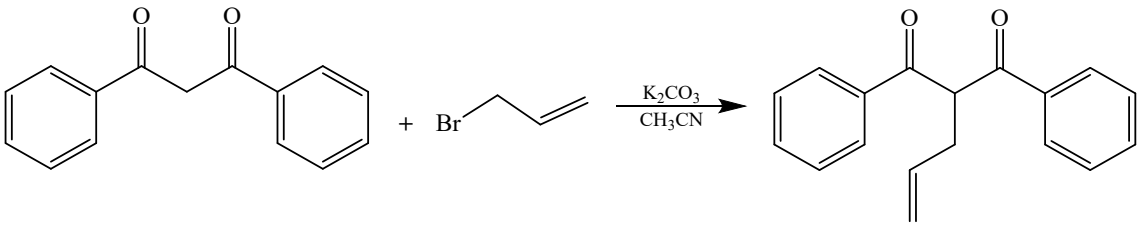

Fig 1. Schematic diagram of the H-type permeation device.

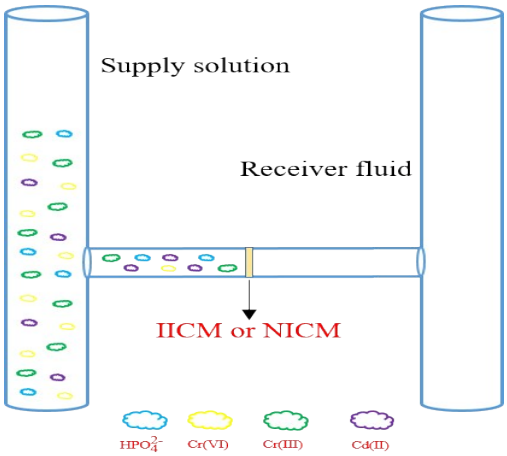

Fig.2. Nitrogen adsorption/desorption curves of the (a) nylon, (b) Cr(VI)-IICM$_{10}$, and (c) NICM$_{10}$ membranes.

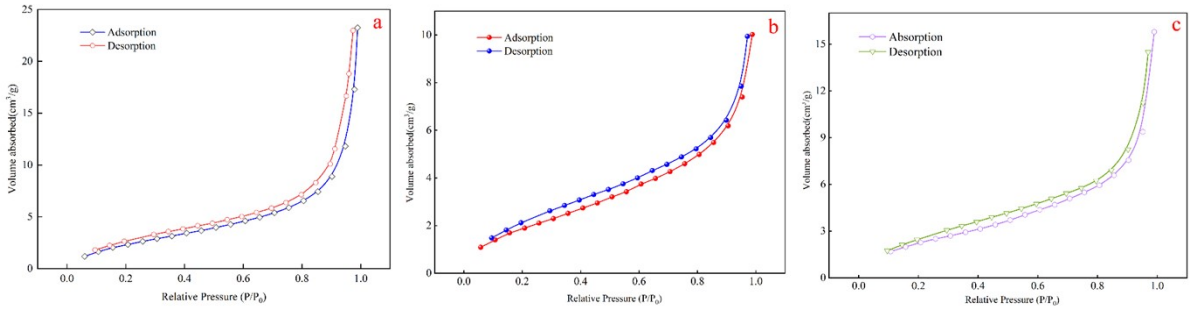

Table 2. Correlation parameters of the Langmuir and Freundlich fitting curves for Cr(VI)-IICM$_{10}$ and NICM$_{10}$.

Isotherm model		Langmuir			Freundlich		
	Q_e(mg/g)	K_L	Q_m(mg/g)	R^2	K_F	1/n	R^2
Cr(VI)-IICM$_{10}$	29.66	0.0475	35.13	0.9985	5.813	0.3560	0.9562
NICM$_{10}$	11.47	0.0169	16.17	0.9959	1.012	0.4935	0.9815