**Selective removal of Cd(II), As(III), Pb(II) and Cr(III) ions from water resources using novel 2-anthracene ammonium-based magnetic ionic liquids**

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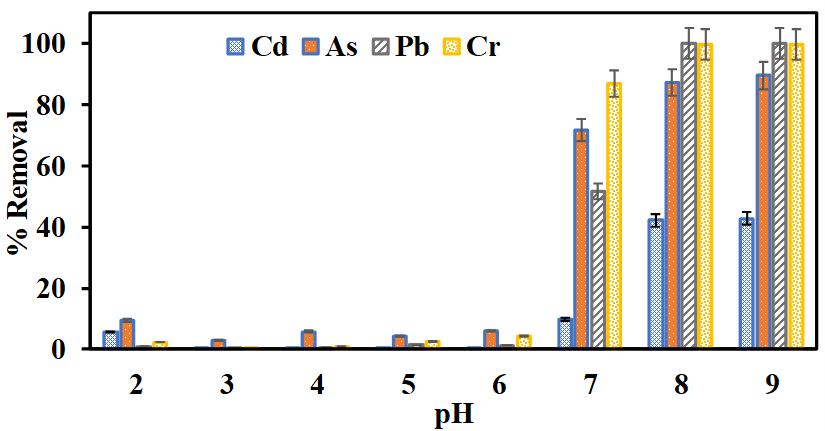
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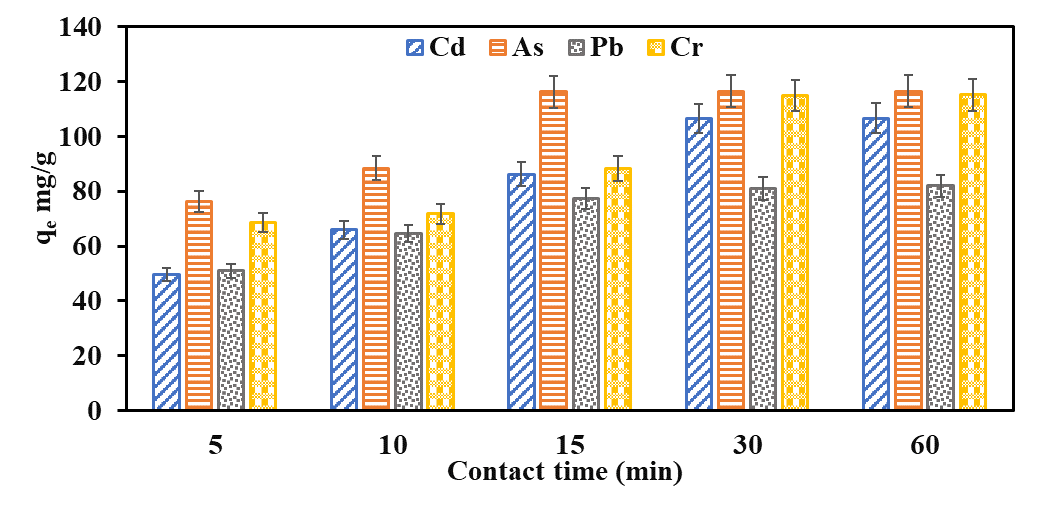
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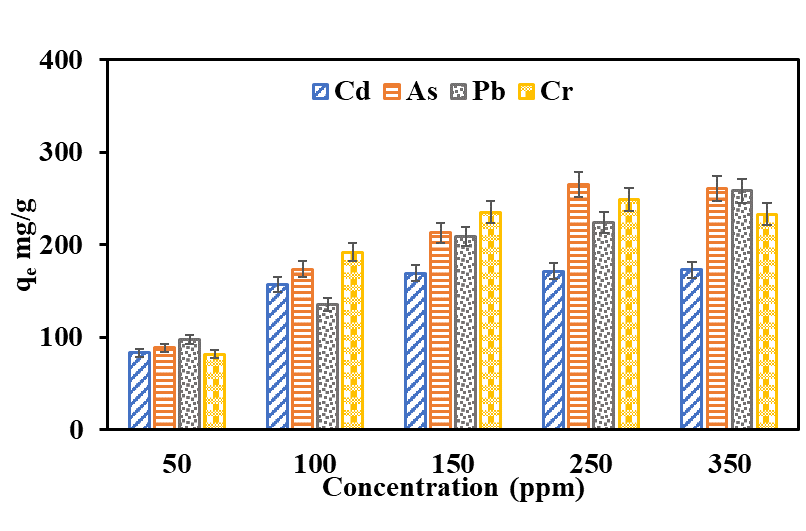
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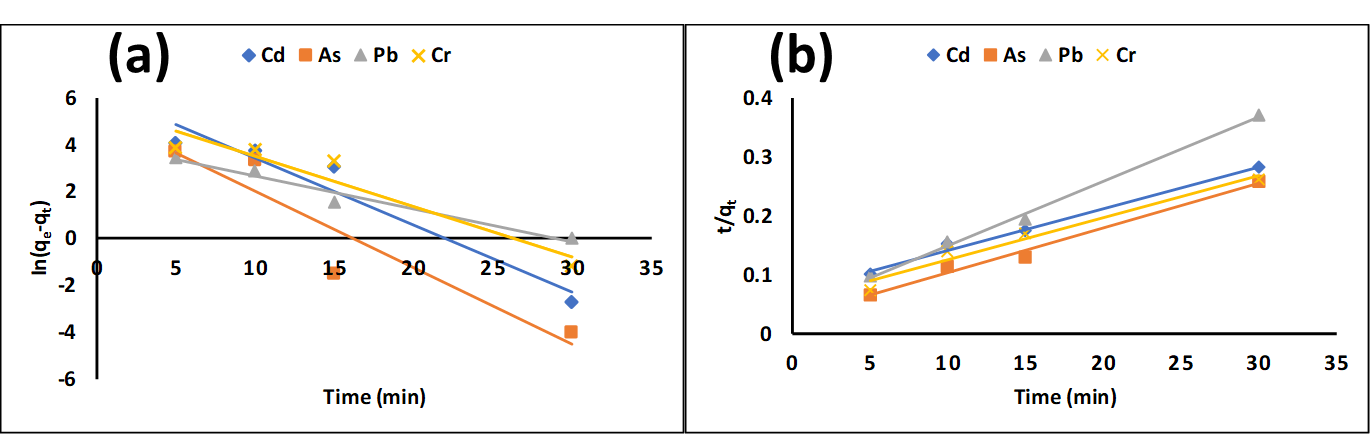
**Fig. SI-1** Effects of solution pH on the adsorption of the metal ions by [2-AA]CoCl3 MIL

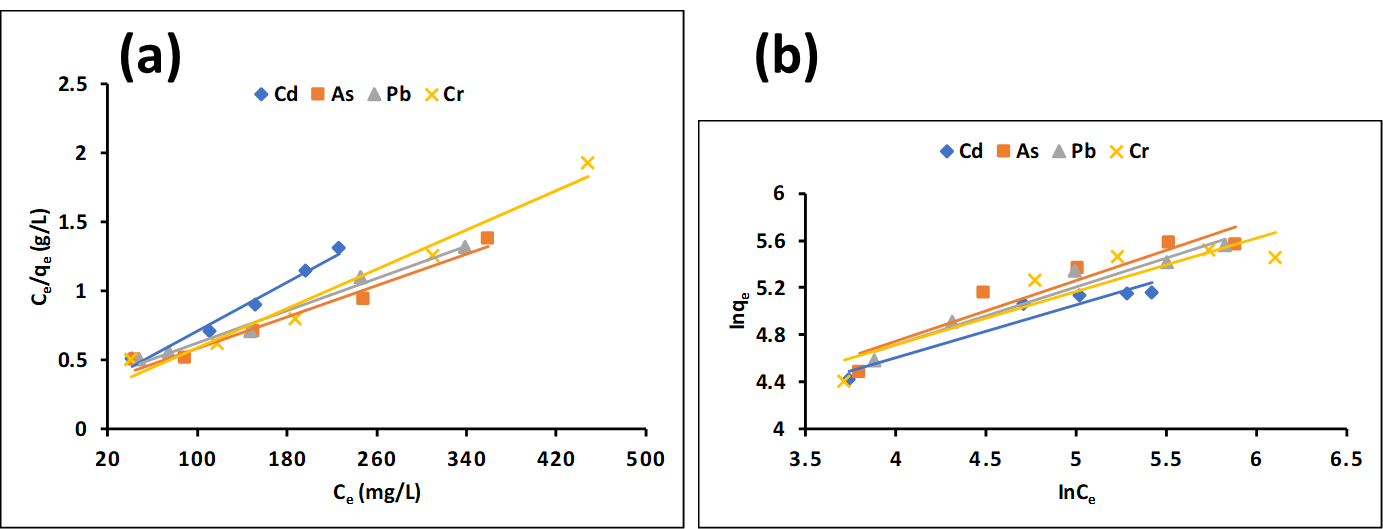


**Fig. SI-2** Effects of contact time on the adsorption of the heavy metal ions by [2-AA]CoCl3 MIL

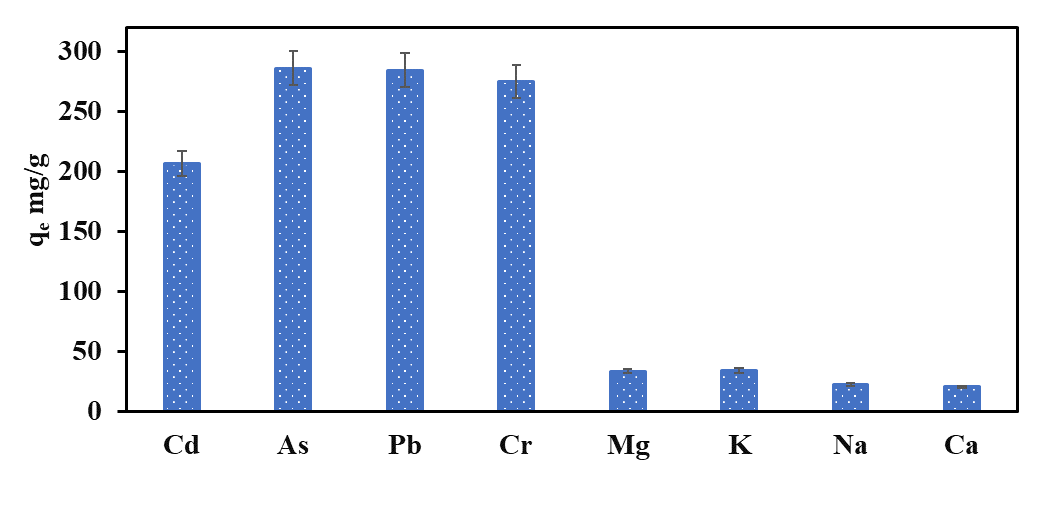


**Fig. SI-3** Effects of different initial concentrations of each of the targeted metal ions on their adsorption by [2-AA]CoCl3 MIL

**Fig. SI-4** (a) Pseudo-first order and (b) Pseudo-second order plots for the targeted metal ions adsorption on [2-AA]CoCl3 MIL



**Fig. SI-5** (a) Langmuir and (b) Freudlinch isotherms for the targeted metal ions adsorption on [2-AA]CoCl3 MIL



**Fig. SI-6** Selective adsorption of targeted metal ions by [2-AA]CoCl3 in a mixed component solution.



**Fig. SI-7** FTIR spectrum of the MIL before and after adsorption. .