Electronic Supplementary Material (ESI) for RSC Advances

Supporting Materials For

Carbon Capturing Loop and Environmental Remediation: Case Study of Magnetic Polypropylene Nanocomposites

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S1. GC/MS of the Solid Components from PP and SS20

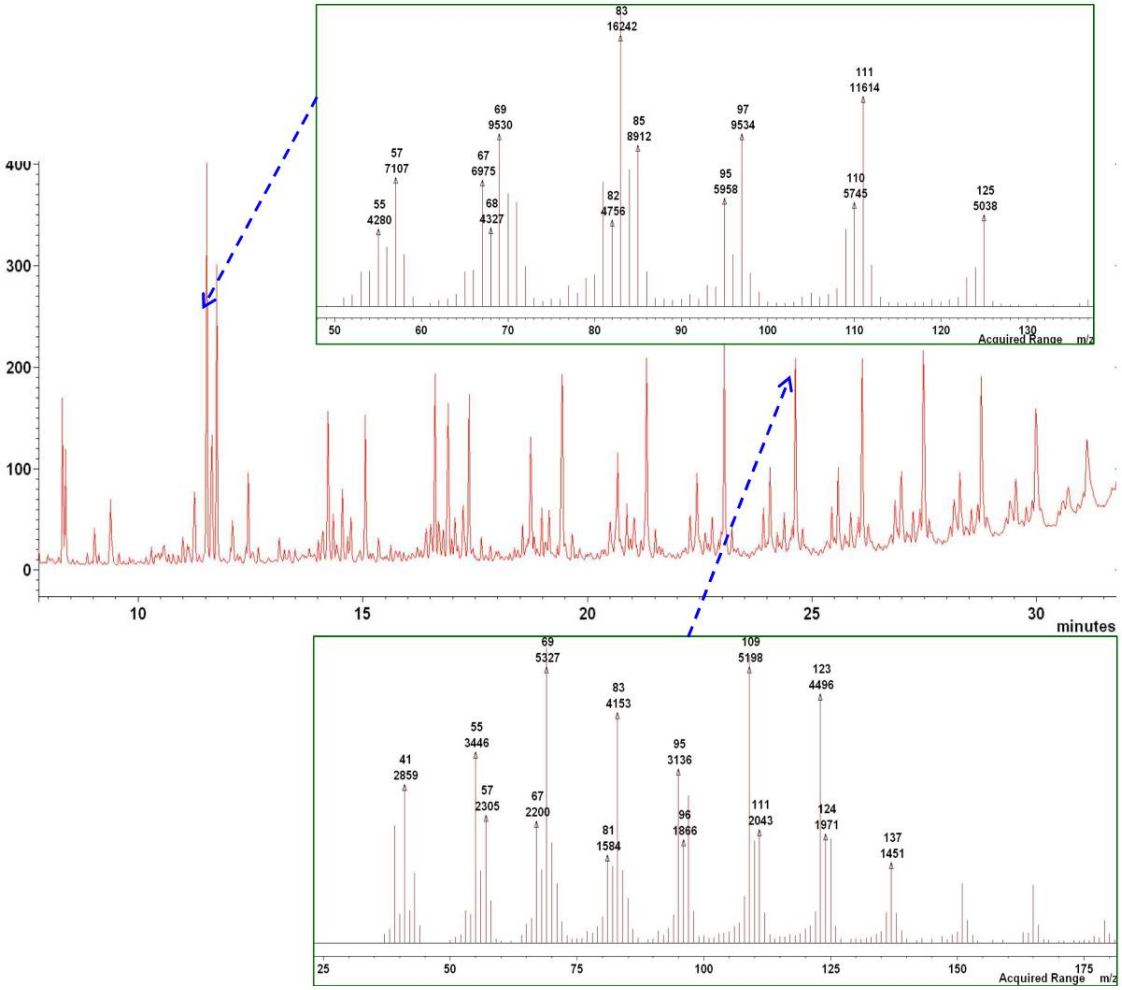

Figure S1. Typical GC/MS EI chromatogram for solid component after pyrolysis of the pure PP.

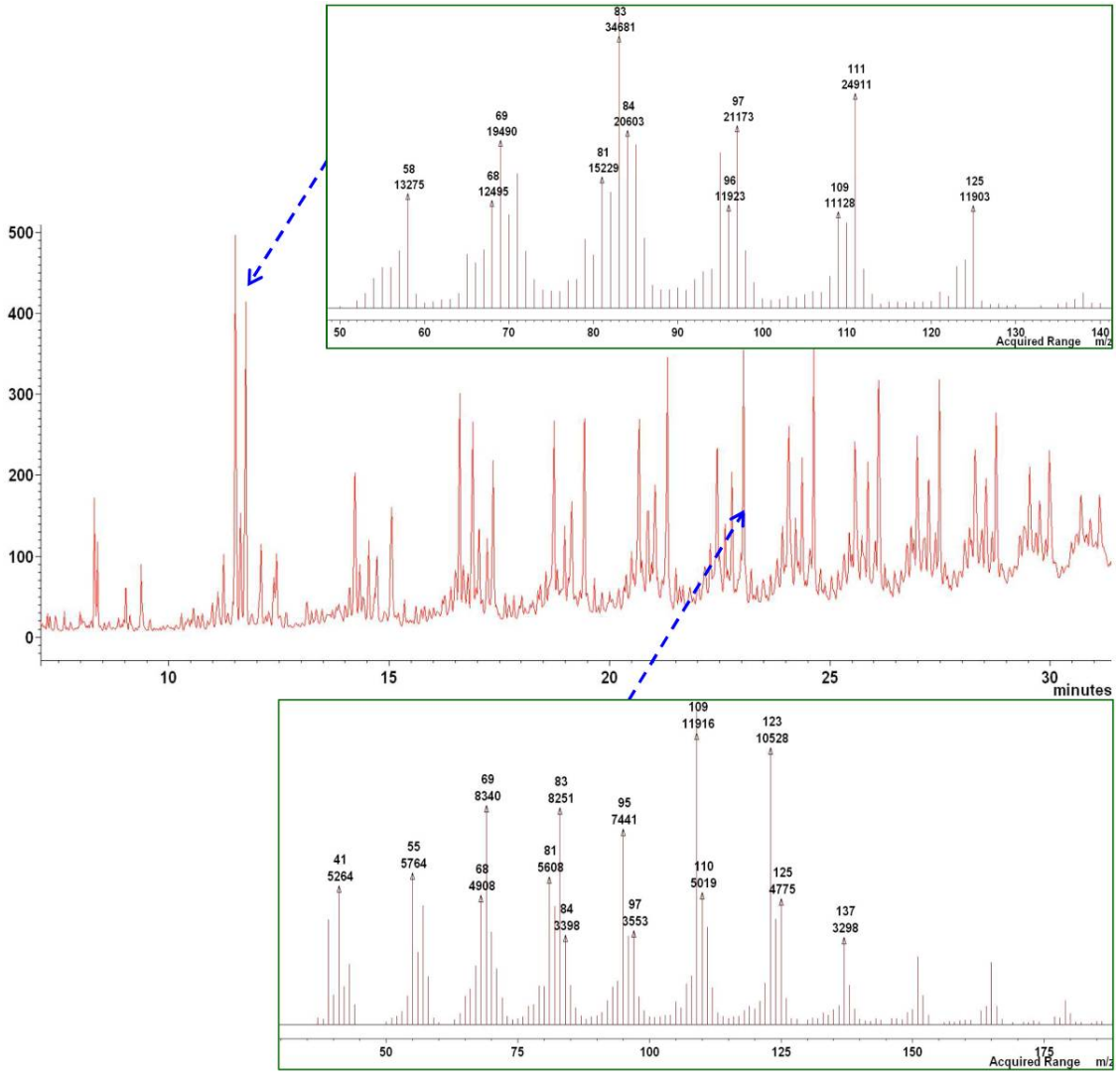

Figure S2. Typical GC/MS EI chromatogram for solid component after pyrolysis of the S20 PNCs.

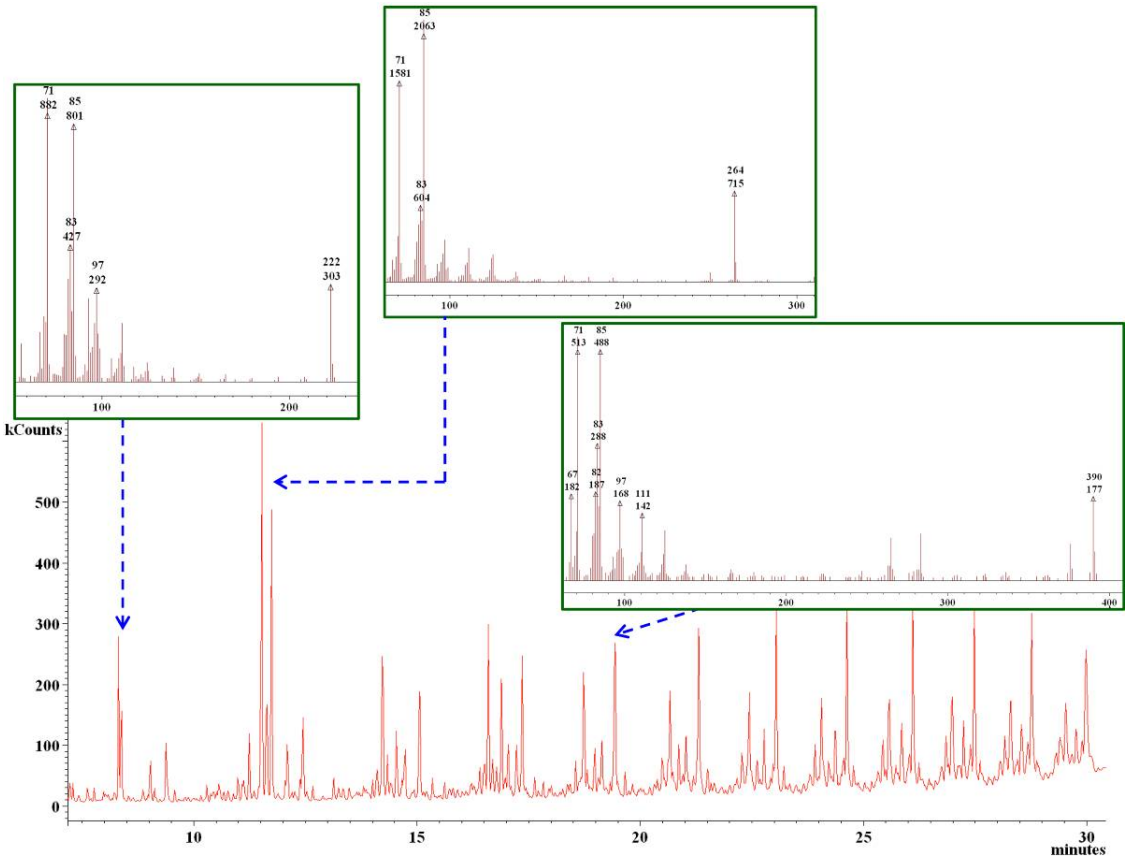

Figure S3. Typical GC/MS CI chromatogram for solid component after pyrolysis of the S3 PNCs.

S2. TGA

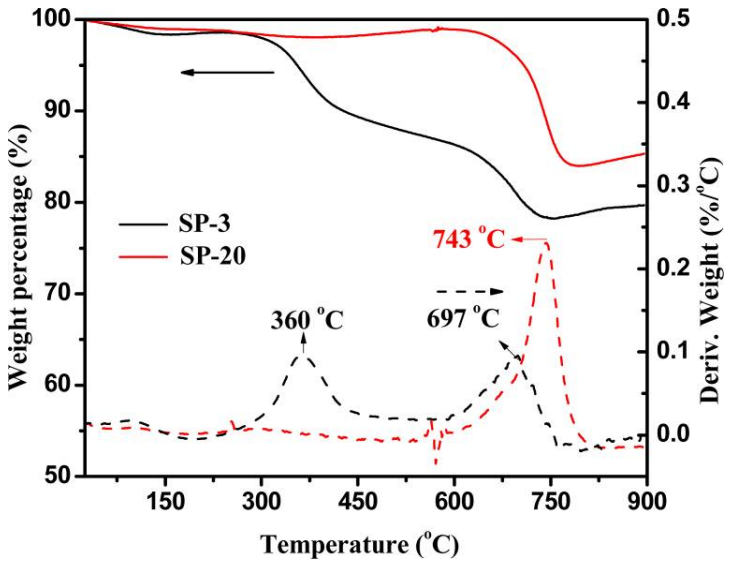

Figure S4. Thermogravimetric curves of the SP3 and SP20 in N_2 with a heating rate of 10 °C/min.

S3. UV-vis Spectra of Cr(VI) Removal

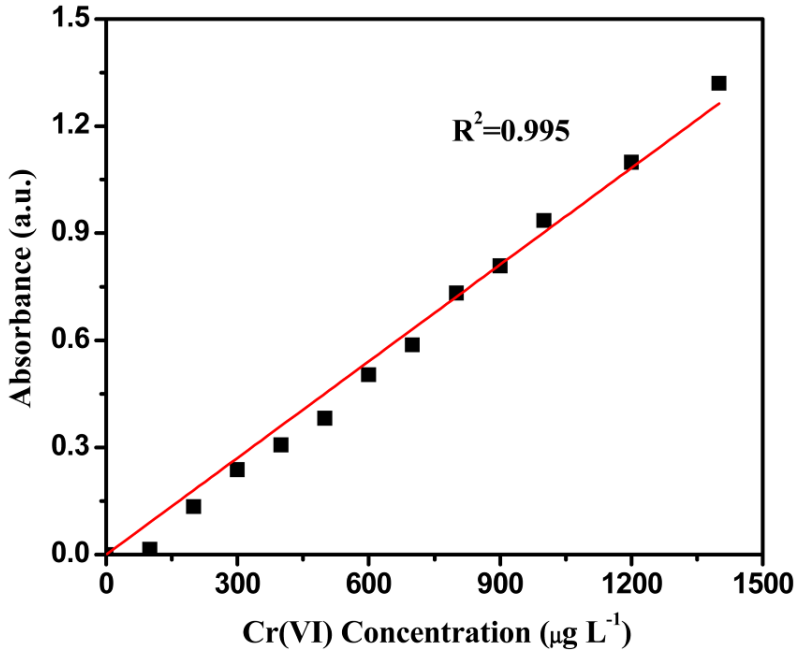

Figure S5. Linear relationship between the Cr(VI) concentration and UV-Vis absorption tested at room temperature. Linear equation: [Absorbance]=9.7232E-4×[Cr(VI)].

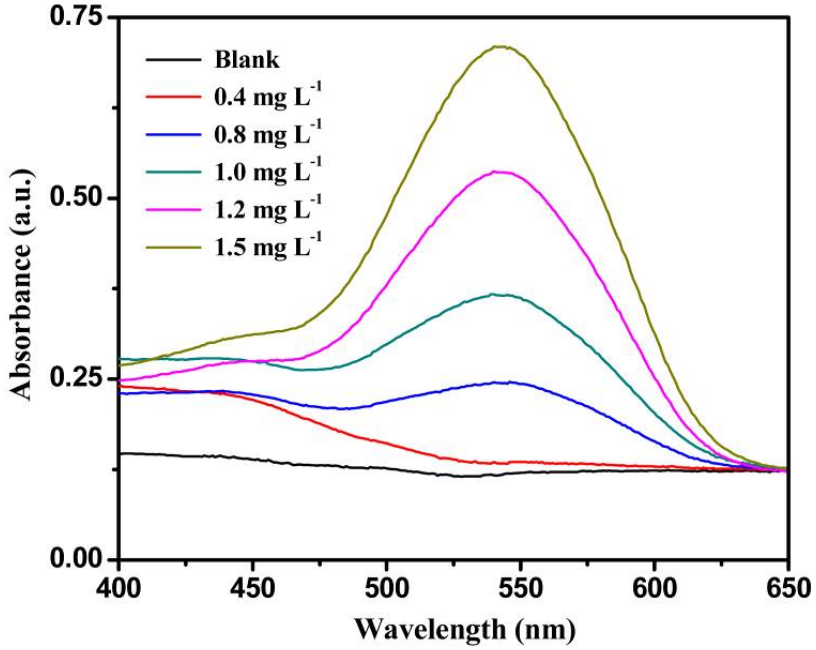

Figure S6. UV-vis absorption of different concentrated Cr(VI) solution after adsorption. ([SS20]= 1 g L^{-1}, pH=7, adsorption time: 10 min)

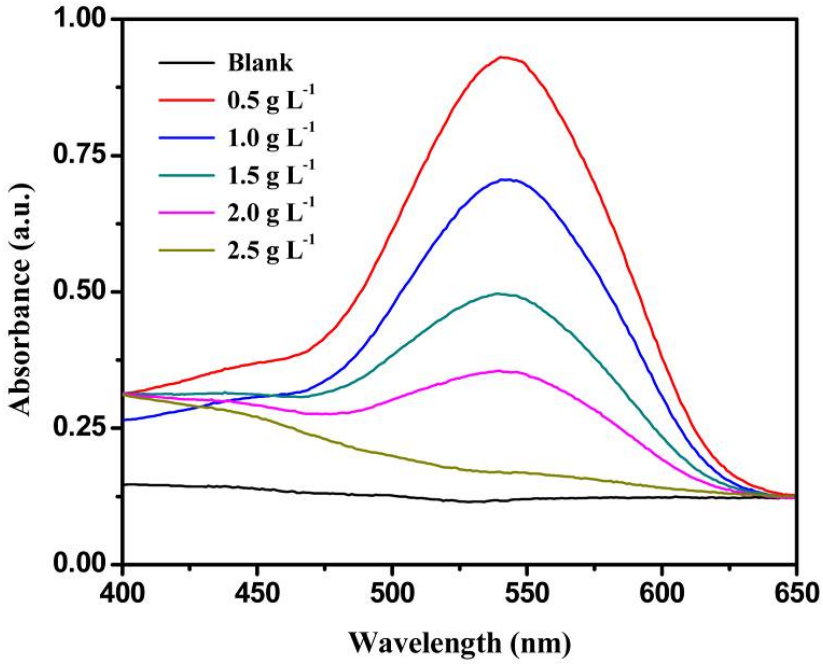

Figure S7. UV-vis absorption of Cr(VI) solution after treatment with different concentrations of SS20. ([Cr(VI)]=1.5 mg L^{-1}, pH=7, treating time: 10 min)

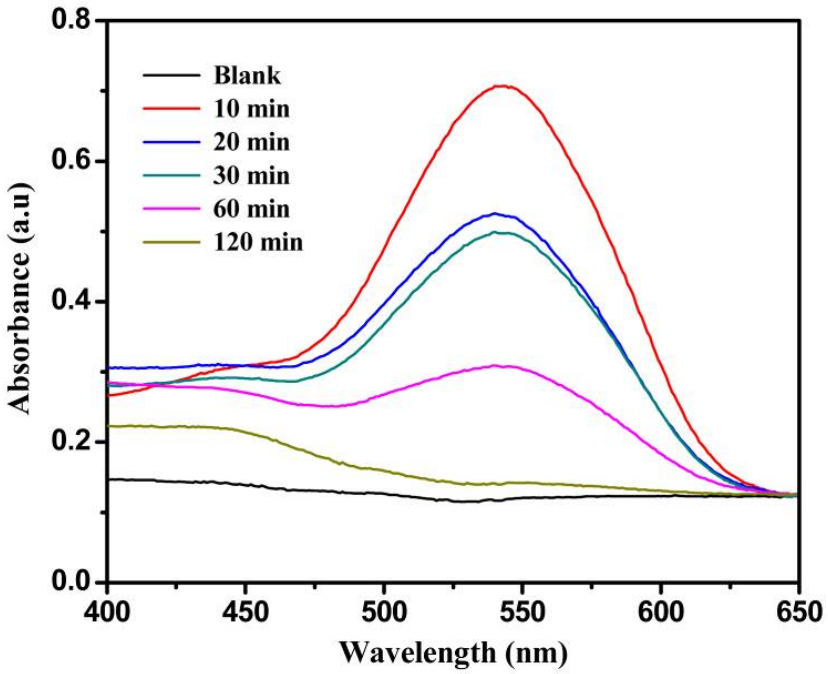

Figure S8. UV-vis absorption of the Cr(VI) solutions treating with different time. ([MGNCs]= 1 g L^{-1}, [Cr(VI)]=1.5 mg L^{-1}, pH=7)

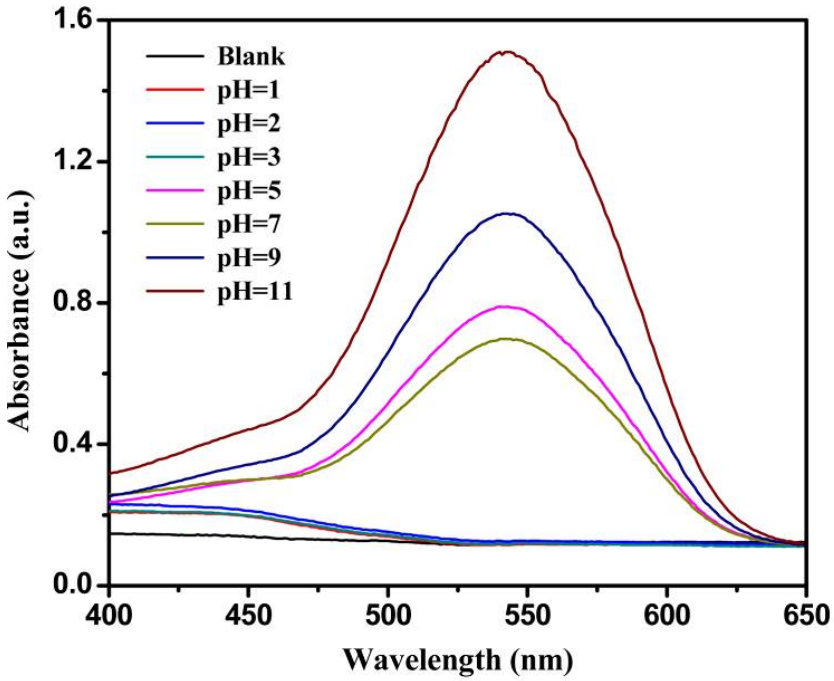

Figure S9. UV-vis absorption of the solutions after Cr(VI) removal in different pH conditions. ([MGNCs]= 1 g L^{-1}, [Cr(VI)]=1.5 mg L^{-1}, treating time: 10 min)