gels

MDPI

Supplementary Materials

Polypyrrole-Barium Ferrite Magnetic Cryogels for Water Purification

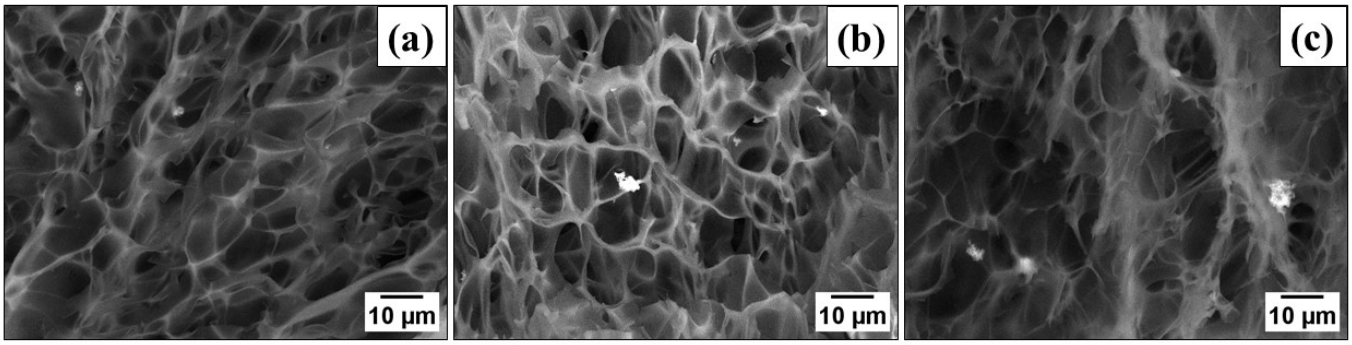


Figure S1. SEM/BSE images of PPy-G-BaFe aerogels, synthesized using (a) 1 wt% of BaFe, (b) 2 wt% of BaFe and (c) 5 wt% of BaFe.

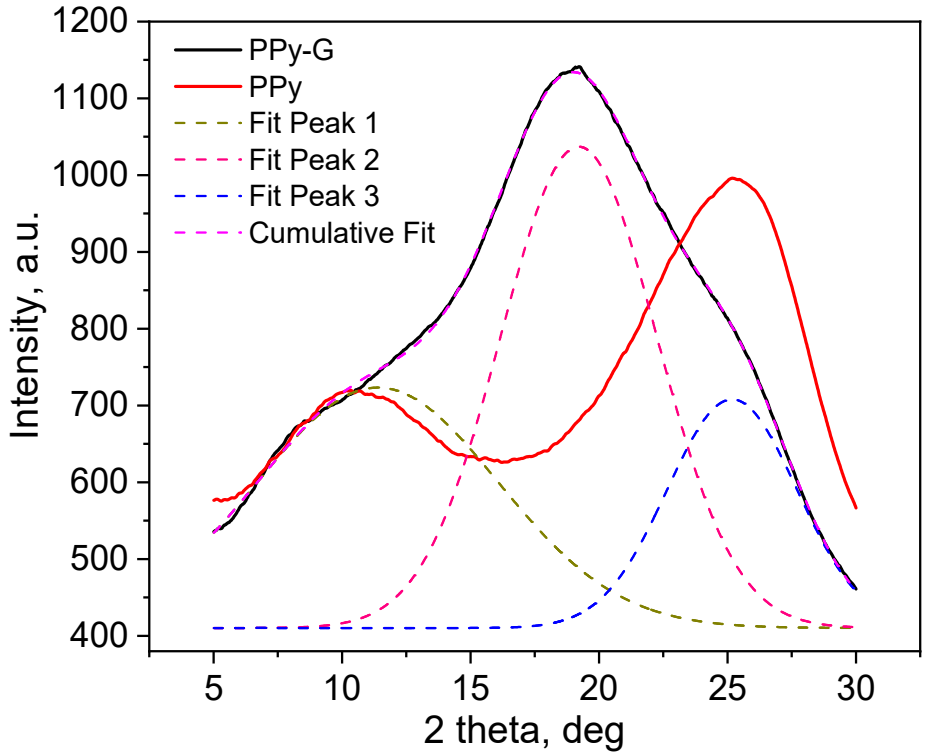


Figure S2. Peak deconvolution of the amorphous peak in PPy-G aerogel spectrum in comparison to the spectrum of pristine PPy.

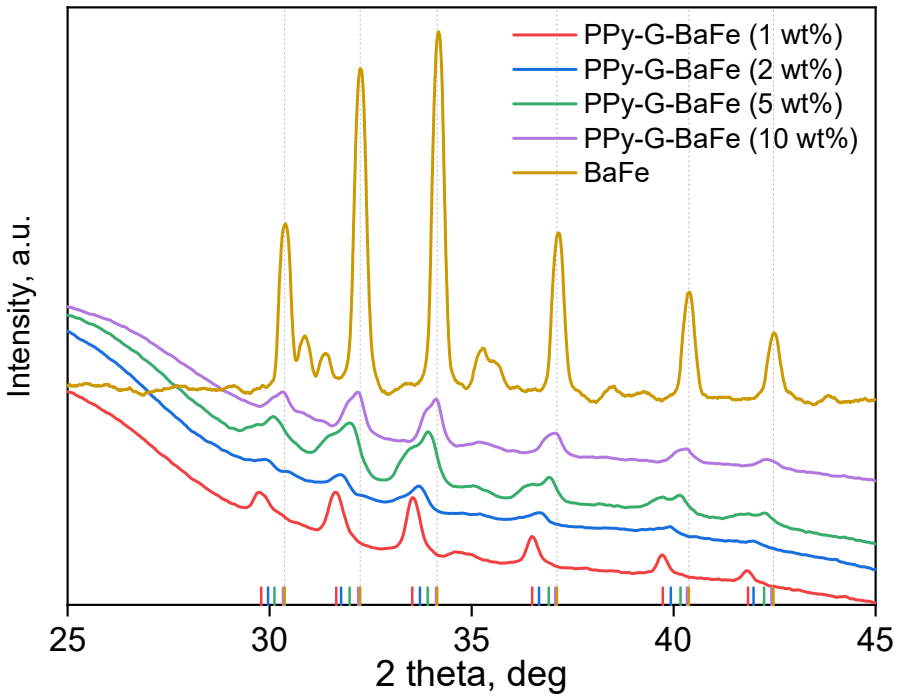
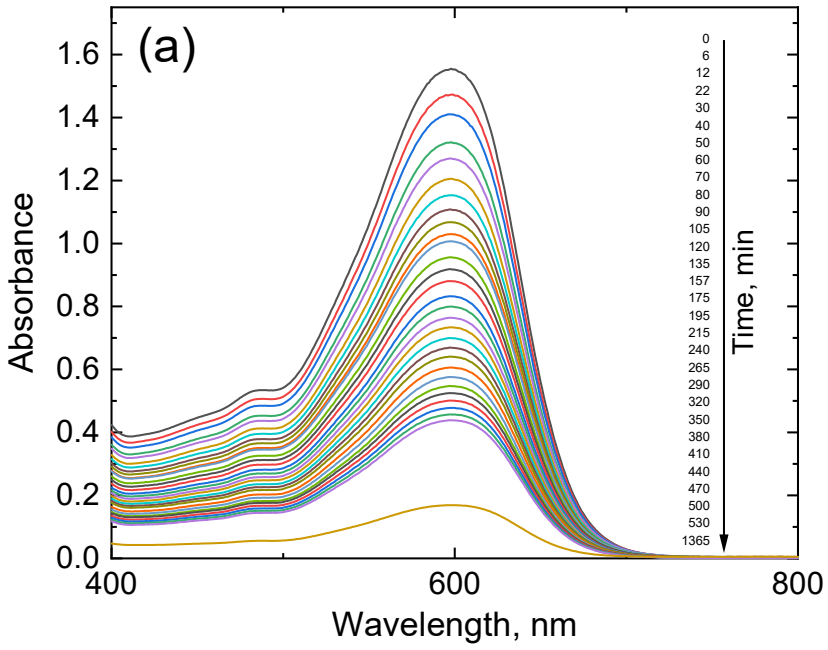
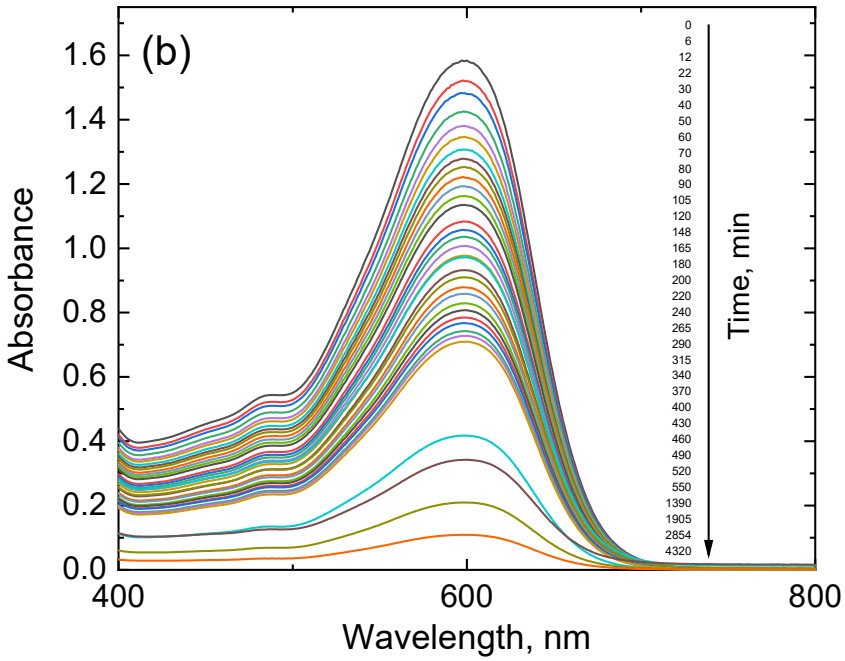


Figure S3. Detail of the XRD patterns of PPy-G-BaFe aerogels, prepared using various fractions of BaFe, and pristine BaFe from 25 to 45 degrees, highlighting the shift of BaFe peaks to lower angles.




(b)
Absorbance
Wavelength, nm
Time, min
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6
12
22
30
40
50
60
70
80
90
105
120
148
165
180
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1390
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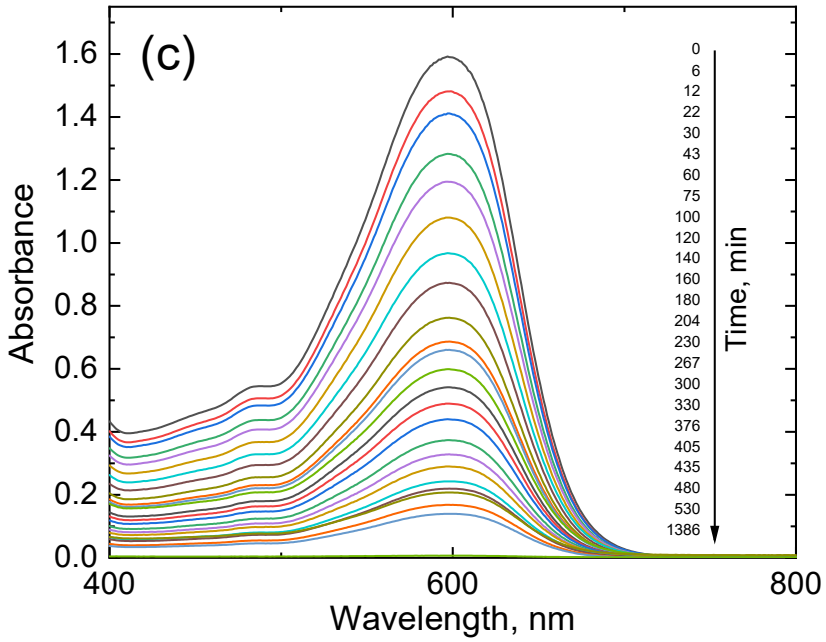
2854
4320


(c)
Absorbance
Wavelength, nm
Time, min
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12
22
30
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60
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100
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376
405
435
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530
1386

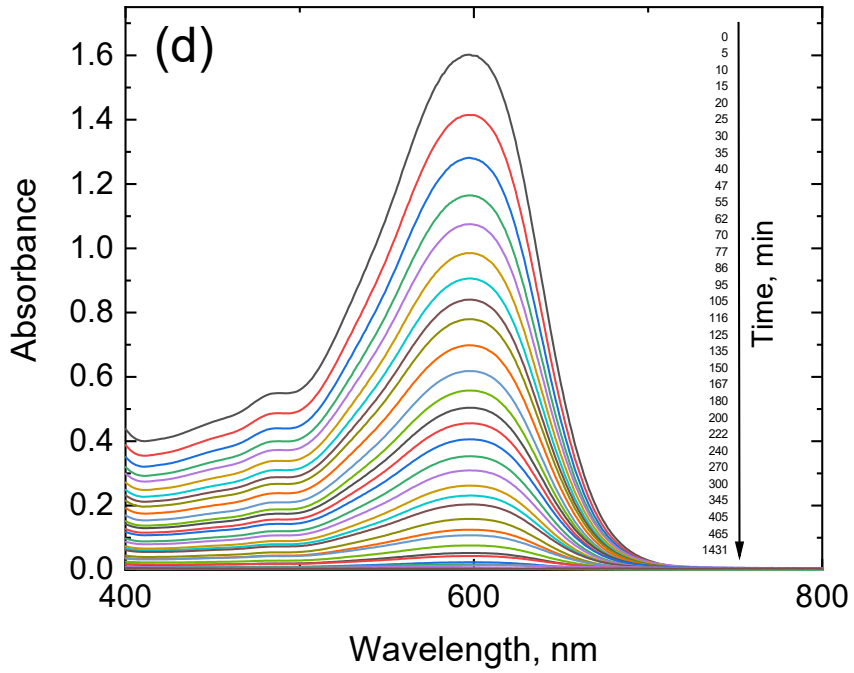

Figure S4. Evolution of UV-vis spectra of Reactive Black 5 solution (50 mg l^{-1}) over time during the adsorption studies with (**a**) 52 mg of PPy-G aerogel, (**b**) 26 mg of PPy-G-BaFe aerogel, prepared at 10 wt% BaFe fraction (**c**) 52 mg of PPy-G-BaFe aerogel, prepared at 10 wt% BaFe fraction, and (**d**) 104 mg of PPy-G-BaFe aerogel, prepared at 10 wt% BaFe fraction.

Table S1. Adsorption capacity of various materials towards Reactive Black 5.

Material	Adsorption capacity, mg g^{-1}	Reference
Powdered activated carbon	58.8	[1]
Walnut activated carbon	19.3	[2]
Polyhydroxyl dendrimer magnetic nanoparticles	62.1	[3]
CTAB-modified zeolite	15.9	[4]
Poly(p-phenylenediamine) / maghemite	233	[5]
Poly(3,4-ethylenedioxythiophene) / maghemite	60	[6]
Polypyrrole / zeolite	122.3	[7]
Polyaniline / magnetite	63.7	[8]

References

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