

Sensitive bisphenol determination of environmental water by high-performance liquid chromatography (HPLC) using magnetic sulfonated metal-organic frameworks nanocomposites as the adsorbent

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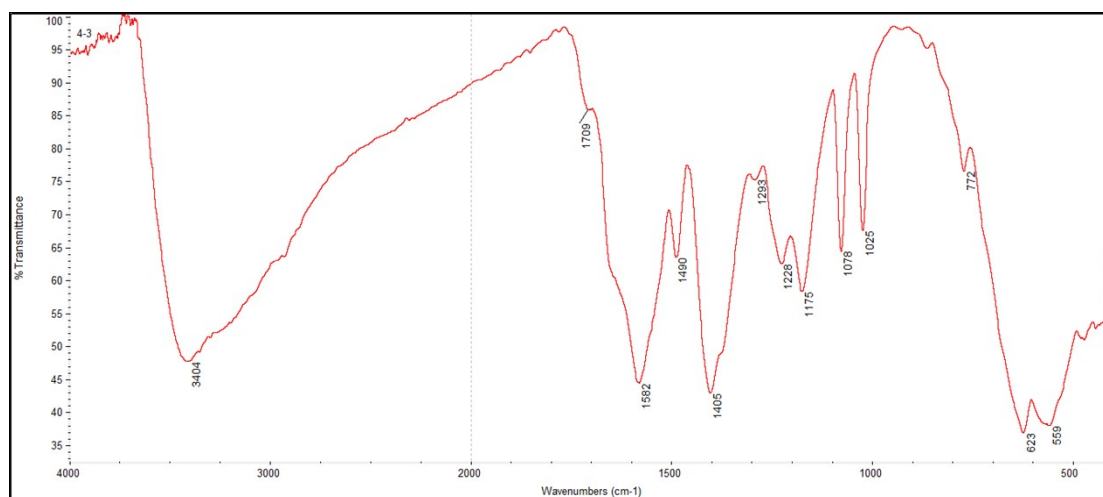


Figure S1. FT-IR spectra of $\text{Fe}_3\text{O}_4@\text{PDA}@\text{Zr-SO}_3\text{-MOF}$ composites.

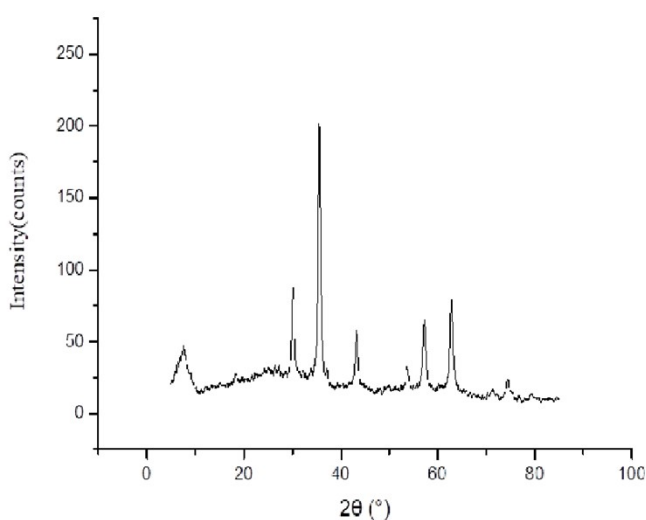


Figure S2. XRD images of $\text{Fe}_3\text{O}_4@\text{PDA}@\text{Zr-SO}_3\text{-MOF}$ composites.

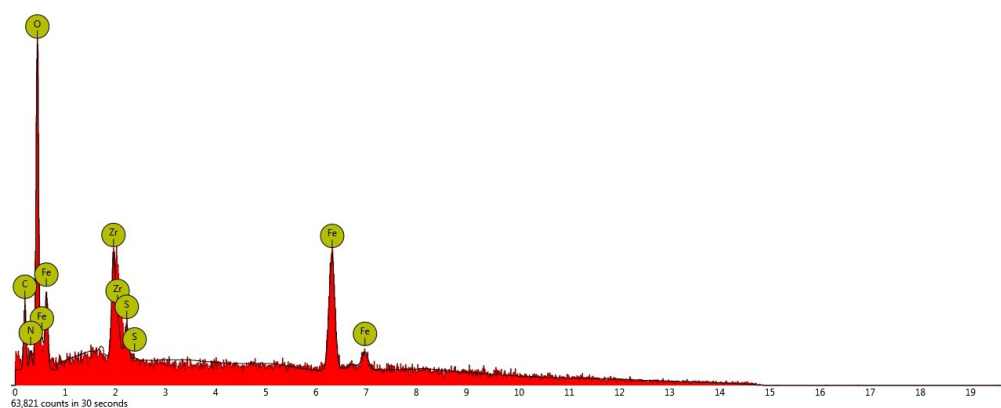


Figure S3. EDX spectra of Fe₃O₄@PDA@Zr-SO₃-MOF composites.

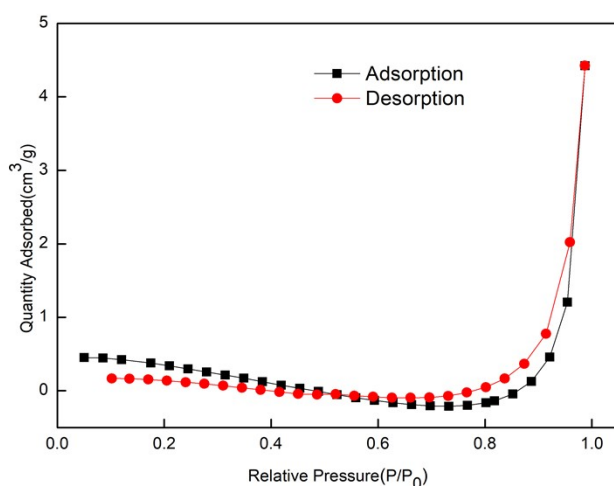


Figure S4. N₂ sorption isotherms of Fe₃O₄@PDA@Zr-SO₃-MOF composites.

Table S1 Comparison of the proposed method with other methods for determination of BPs in various samples

Extraction method	Sample	Extraction time(min)	Adsorbent	LODs $\mu\text{g/L}$	RSDs %	Recovery %	References
MSPE	water	10	magG@PDA@Zr-MOFs	0.1-1	0.62-4.89	64.8-92.8	[1]
MSPE	water	60	PANI@SiO ₂ @Fe	0.009-0.04	1.48-3.73	92.9-98.9	[2]
MSPE	water	15	3DG-ZnFe ₂ O ₄	0.050-0.15	1.7-6.2	95.1-103.8	[3]
MSPE	water	15	MNPC	0.033-0.071	0.3-4.6	93.0-101.7	[4]
MSPE	water	10	Fe ₃ O ₄ -SiO ₂ -TiO ₂	0.5	3.2-7.8	92-105	[5]
MSPE	milk	30	Magnetic AC	0.75	0.5-3.7	89.1-99.4	[6]
MSPE	milk	30	Magnetic nylon 6	3.05	9.1-16	86-99	[7]
MSPE	water	10	Fe ₃ O ₄ @PDA@Zr-SO ₃ H-MOF	0.0048-0.0073	3.8-5.1	93.1-105.8	This work

magG@PDA@Zr-MOFs: magnetic graphene @polydopamine @Zr-MOF

PANI@SiO₂@Fe: polyaniline@SiO₂@Fe

3DG-ZnFe₂O₄: three dimensional grapheme--ZnFe₂O₄

MNPC: magnetic nanoporous carbon

Magnetic AC: magnetic activated carbon

References:

- 1 X.Y. Wang, C. H. Deng, *Talanta*, 2015, **144**, 1329-1335.
- 2 Q. Zhou, Y. Yuan, Y. Wu and Y. Liu, *J. Sep. Sci.*, 2017, **40**, 4032-4040.
- 3 L. L. Wang, Z. Z. Zhang, J. Zhang and L. Zhang, *J. Chromatogr. A.*, 2016, **1463**, 1-10.
- 4 S. Y. Ma, X. Wang, H. L. Duan, J. Wang, H. Y. Zhan and Z. Q. Zhang, *Talanta*, 2019, **202**, 479-485.
- 5 H. R. Sobhi, M. Ghambarian, M. Behbahani and A. Esrafil, *J. Chromatogr. A.*, 2017, **1518**, 25-33.
- 6 O. Filippou, E. A. Deliyanni and V. F. Samanidou, *J. Chromatogr. A.*, 2017, **1479**, 20-31.
- 7 E. M. Reyes-Gallardo, R. Lucena, S. Cardenas and M. Valcarcel, *Microchem. J.*, 2016, **124**, 751-756.