

Supplementary Material

Broad-Spectrum Antimicrobial ZnMintPc Encapsulated in Magnetic-Nanocomposites with Graphene Oxide/MWCNTs Based on Bimodal Action of Photodynamic and Photothermal Effects

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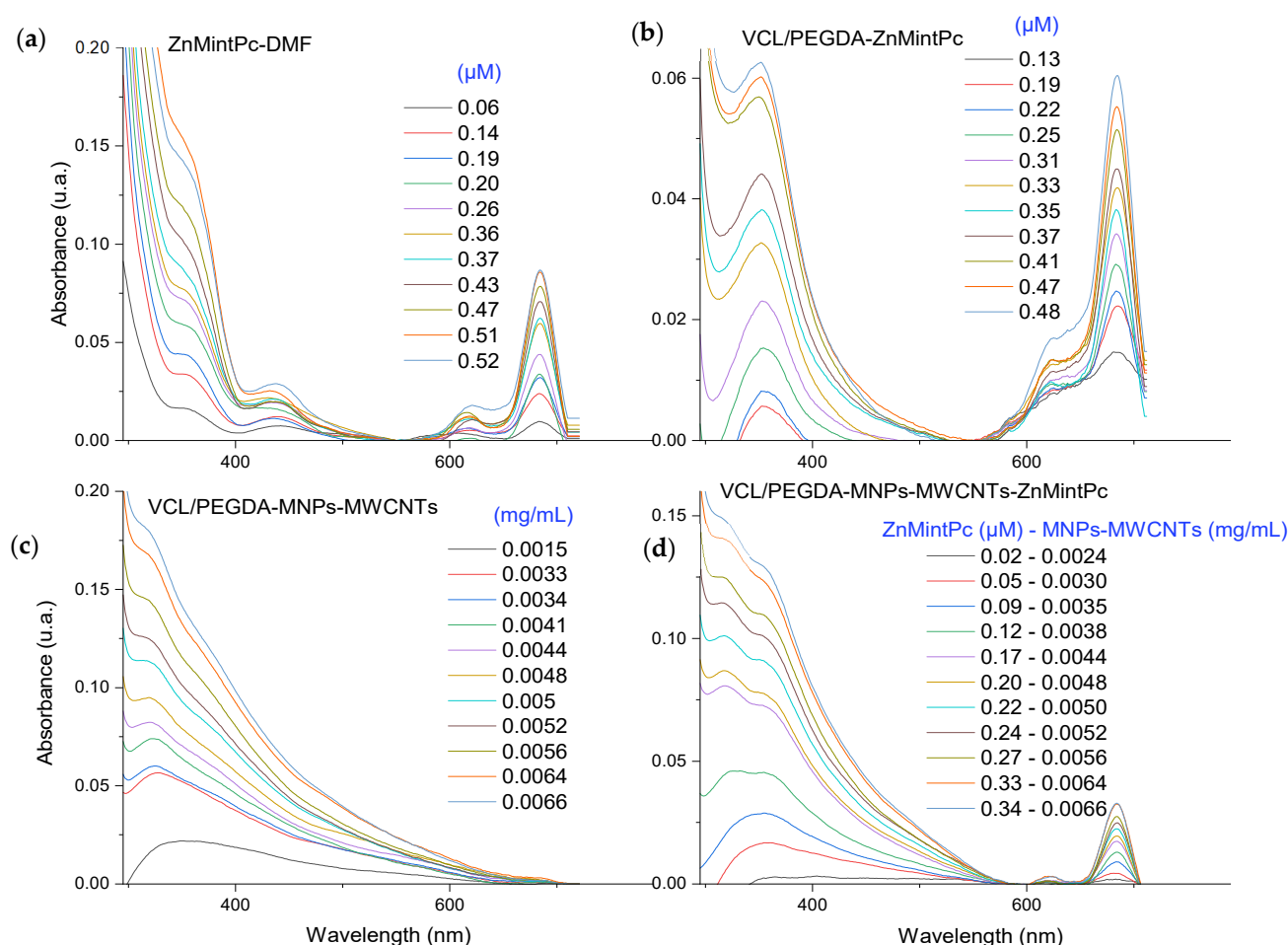


Figure S1. Optical properties: (a) UV-VIS spectra of DMF(3mL) with different concentrations of ZnMintPc, (b) UV-VIS spectra of VCL/PEGDA(3mL) with different concentrations of ZnMintPc, (c). UV-VIS spectra of VCL/PEGDA (3mL) with MNPs-MWCNTs at different concentrations. (d). VCL/PEGDA with MNPs-MWCNTs and ZnMintPc at different concentrations.

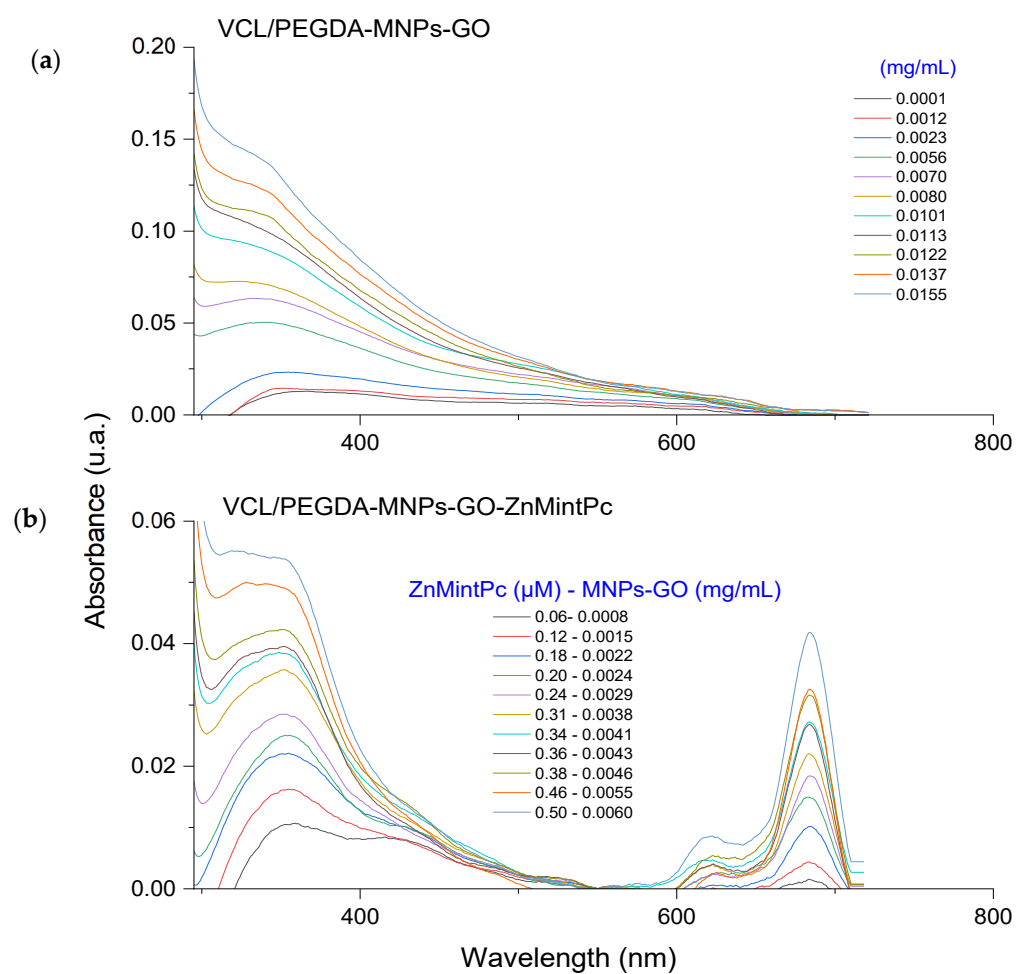
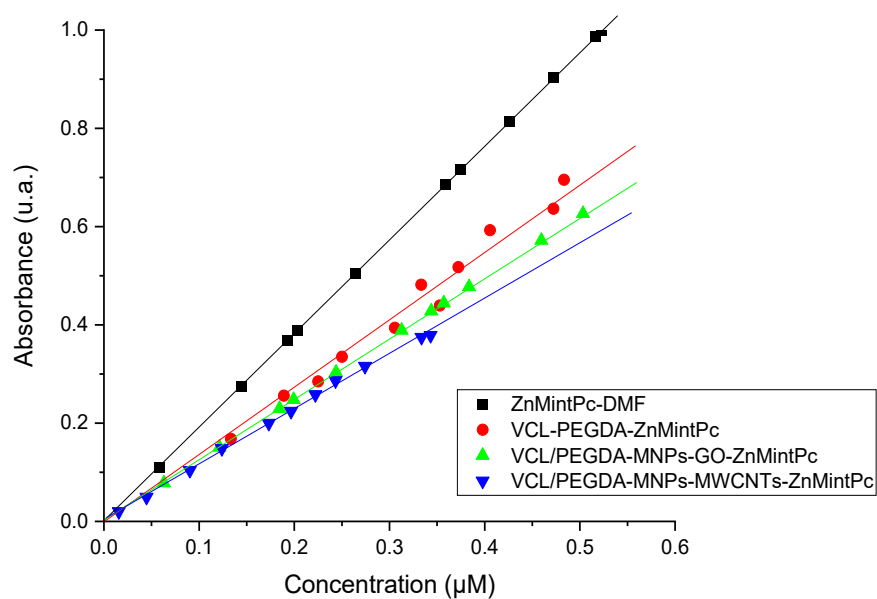


Figure S2. Optical properties of Magnetic Nanocomposites: **(a)** UV-VIS spectra of VCL/PEGDA (3mL) with different concentrations of MNPs-GO, **(b)** UV-VIS spectra of VCL/PEGDA (3mL) with MNPs-GO-ZnMintPc at different concentrations.



(a)

	Absorbance
<u>ZnMintPc-DMF</u>	100%
<u>VCL/PEGDA-ZnMintPc</u>	71.47%
<u>VCL/PEGDA-MNPs-GO-ZnMintPc</u>	64.46%
<u>VCL/PEGDA-MNPs-MWCNTs-ZnMintPc</u>	61.73%

(b)

Figure S3. (a) Composites calibration curve of ZnMintPc (0.52 μM) from: PS in DMF, VCL/PEGDA, VCL/PEGDA-MNPs-GO and VCL/PEGDA-MNPs-MWCNTs; (b) Absorbance of ZnMintPc-DMF and nanocomposites.

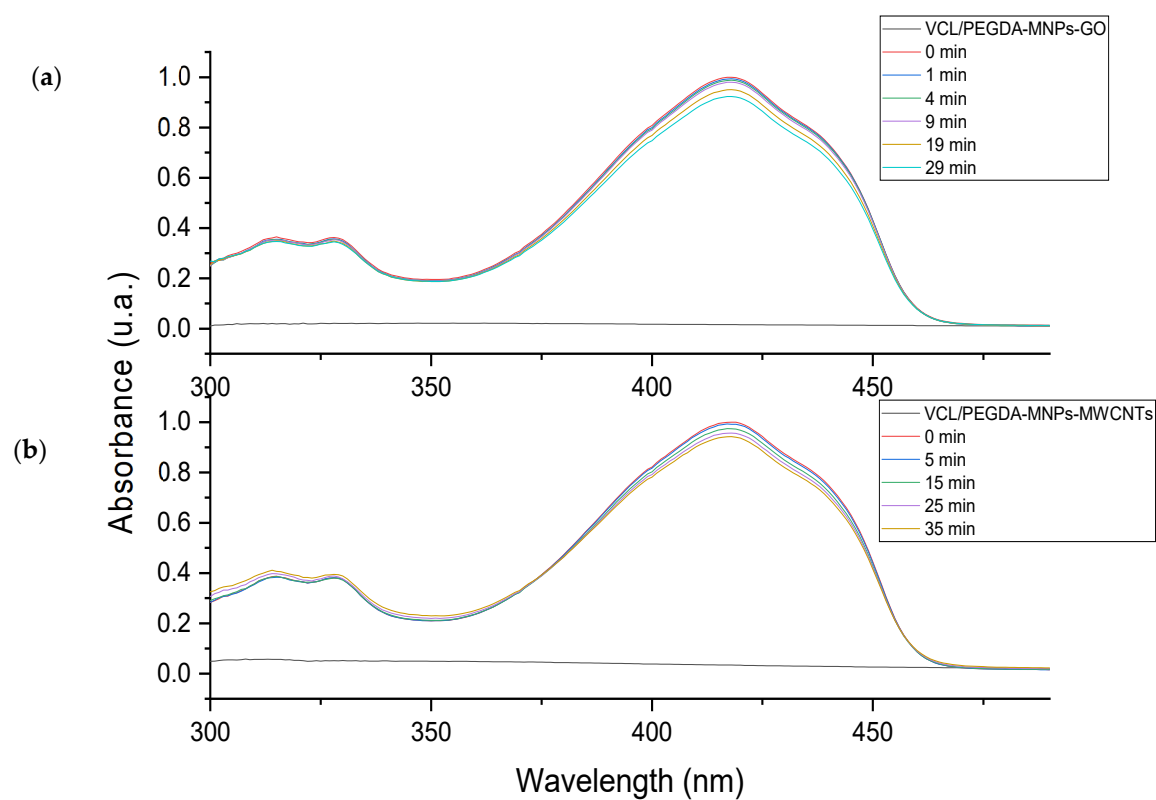


Figure S4. Photodynamic Analyses of: (a) UV-VIS spectra of VCL/PEGDA-MNPs-GO and (b) UV-VIS spectra of VCL/PEGDA-MNPs-MWCNTs.

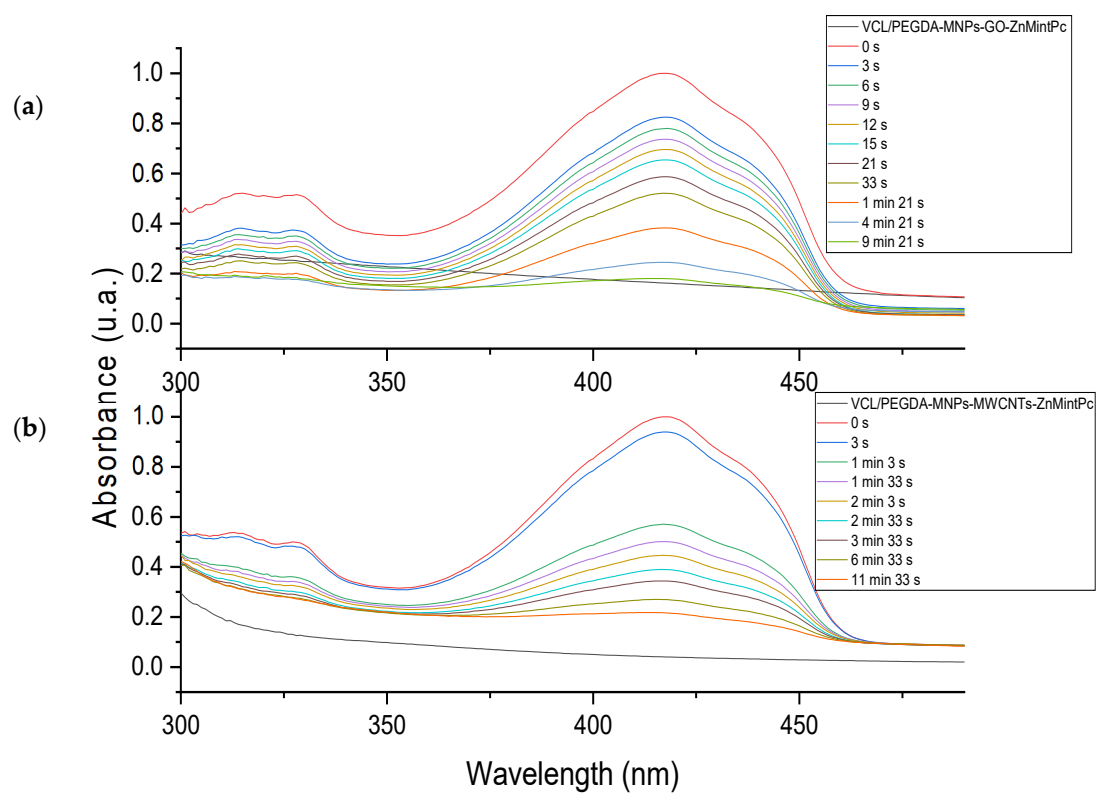
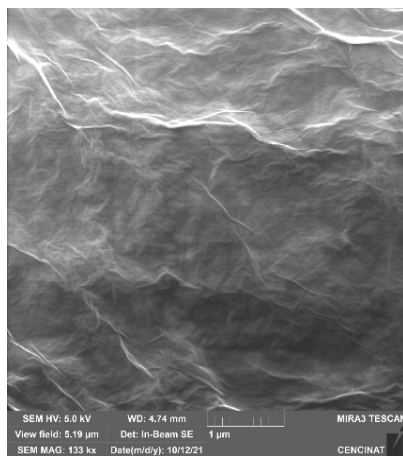
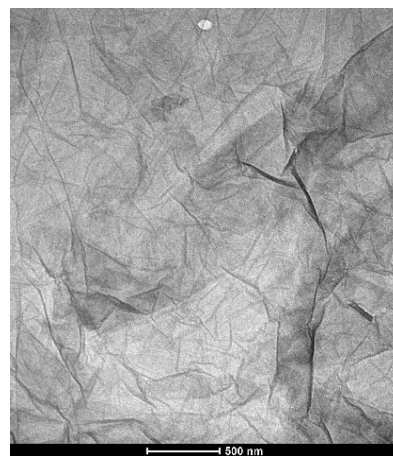


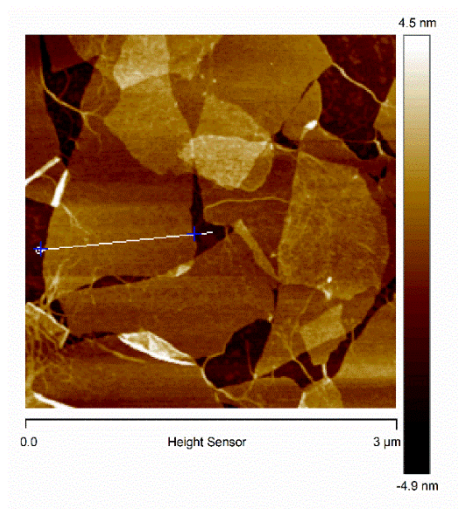
Figure S5. Photodynamic Analyses of: (a) UV-VIS spectra of VCL/PEGDA-MNPs-GO-ZnMintPc and (b) UV-VIS spectra of VCL/PEGDA-MNPs-MWCNTs-ZnMintPc.



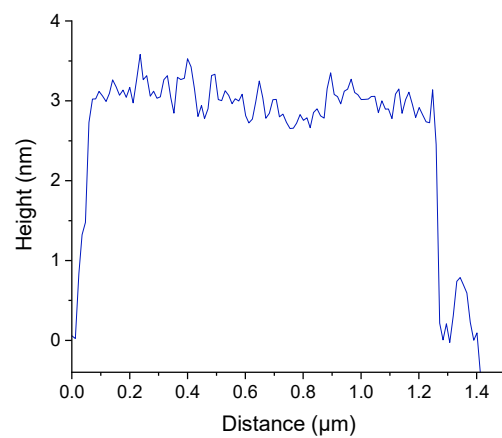
(a)



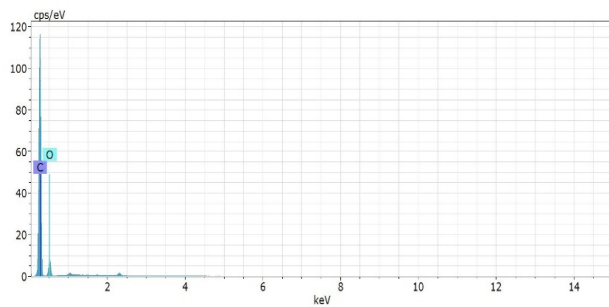
(b)



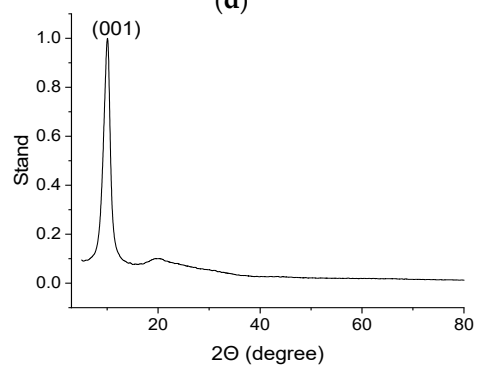
(c)



(d)



(e)



(f)

Figure S6. (a) SEM analysis, (b) TEM analysis, (c) Atomic force microscopy (AFM) image (d) Height profile along the line of the panel from GO (e) EDS analysis and (f) XRD of GO.

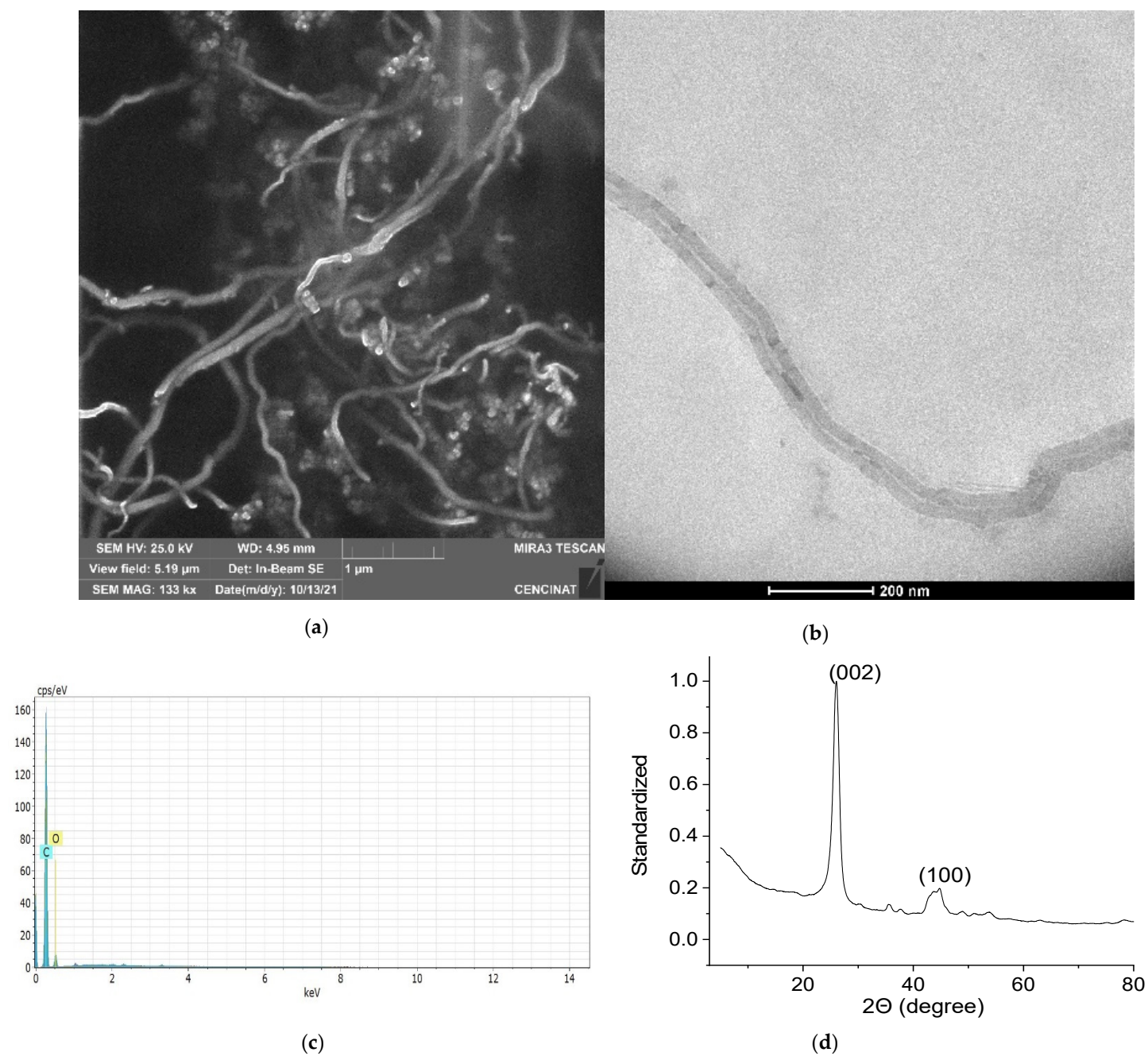


Figure S7. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of MWCNTs.

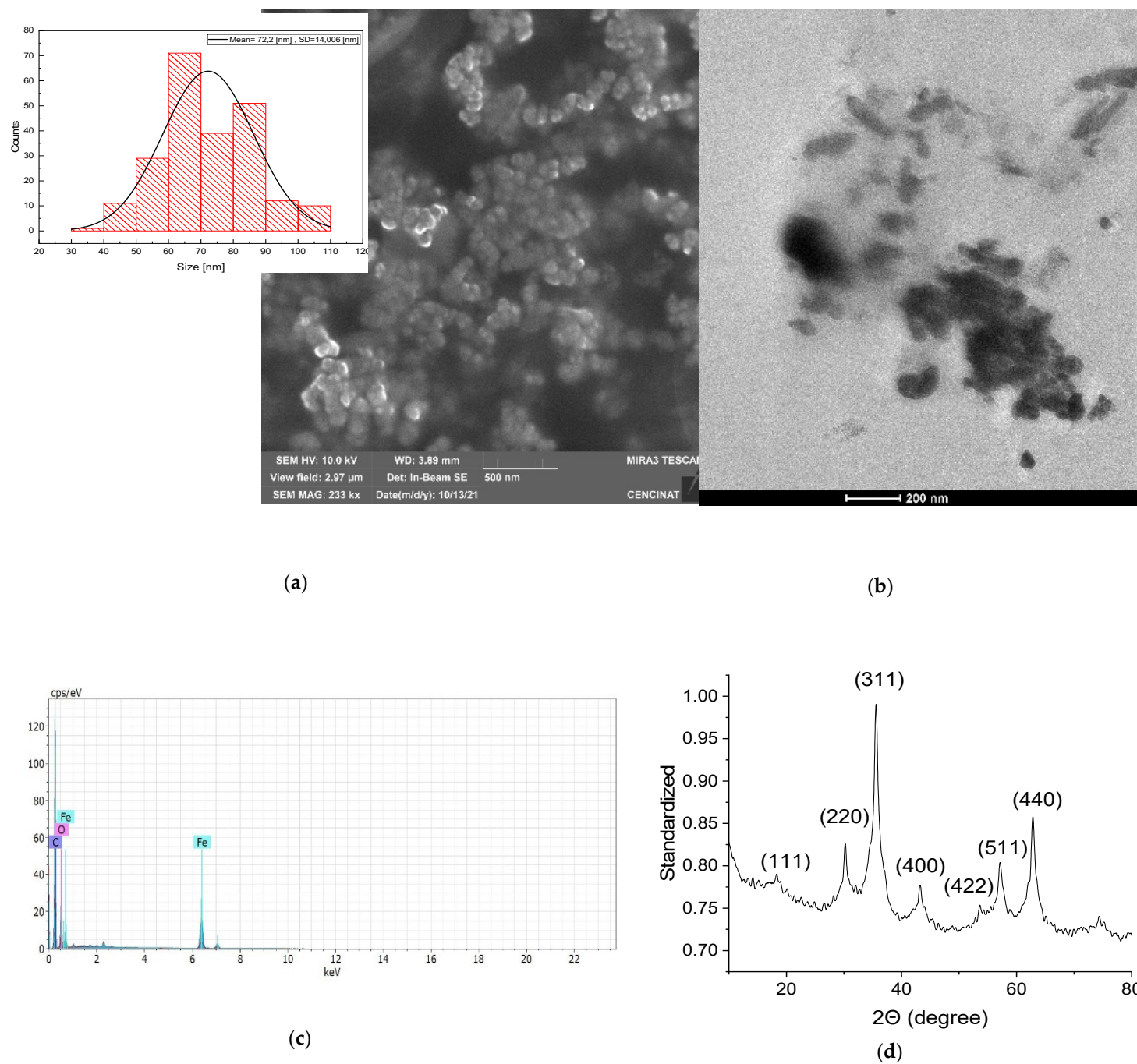


Figure S8. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of MNPs.

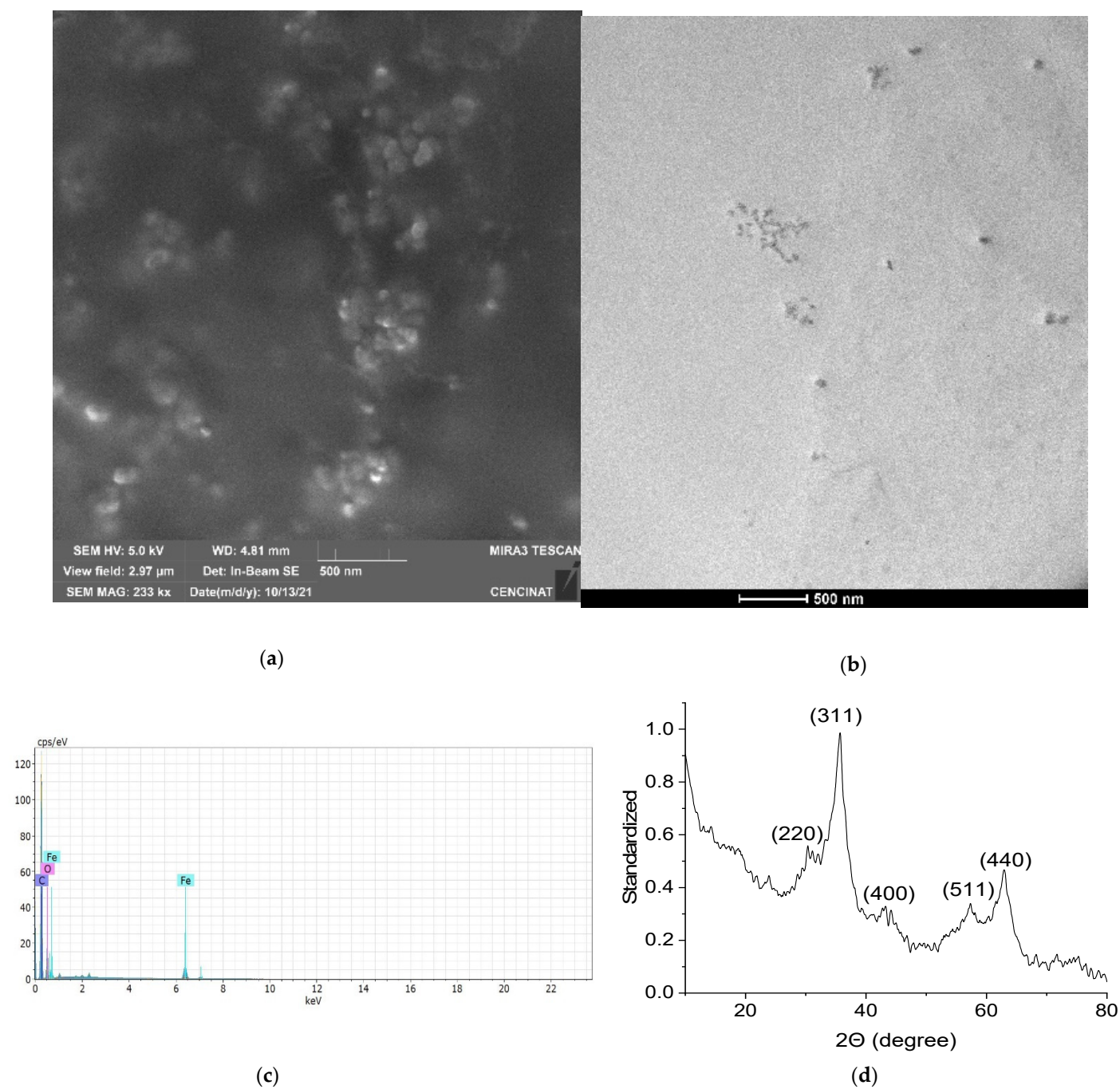
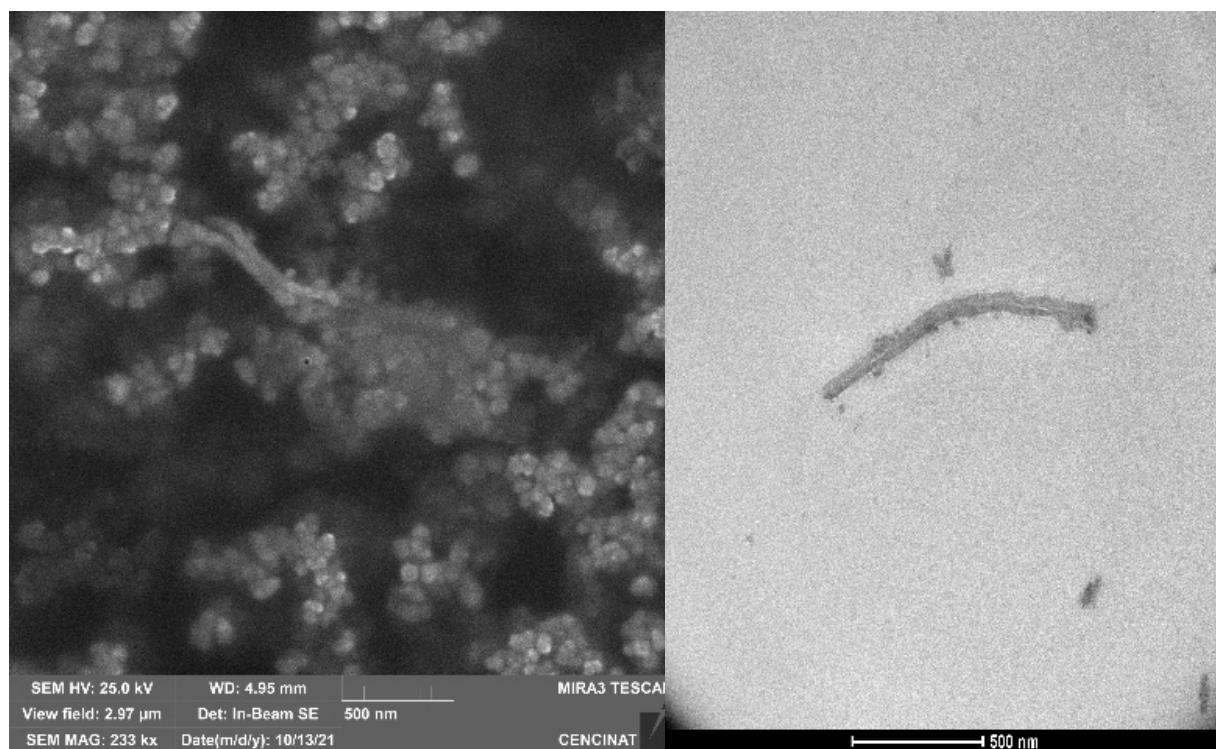
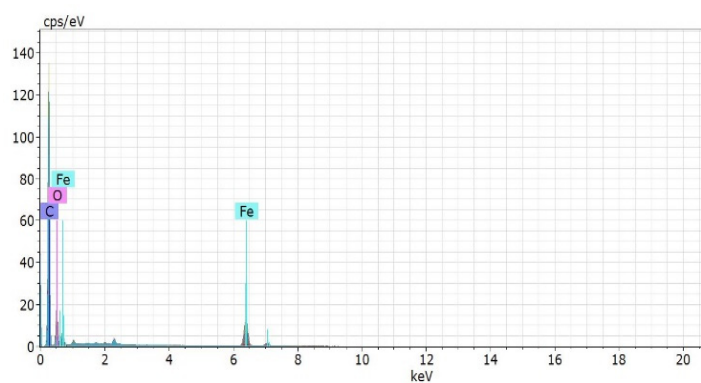


Figure S9. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of MNPs-GO.

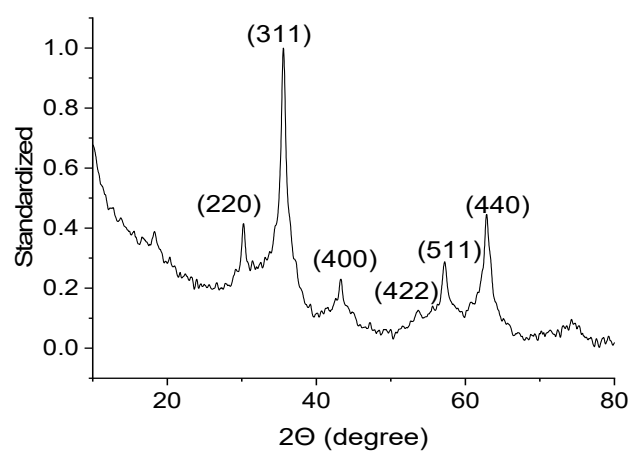


(a)

(b)

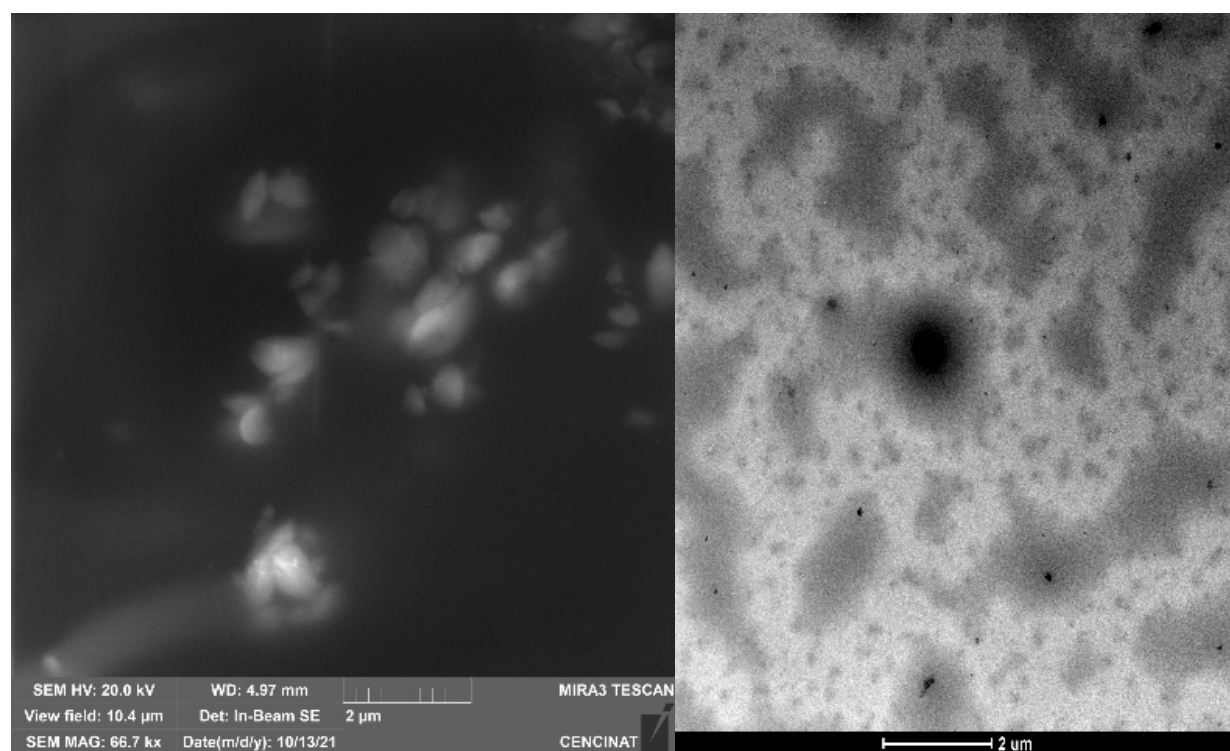


(c)



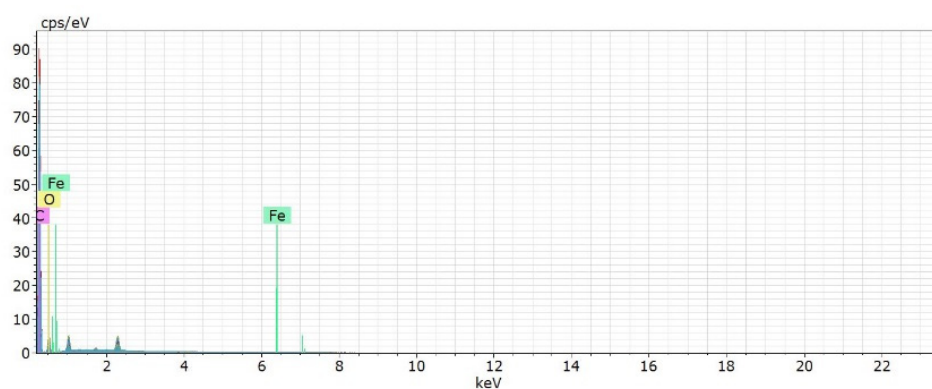
(d)

Figure S10. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of MNPs-MWCNTs.



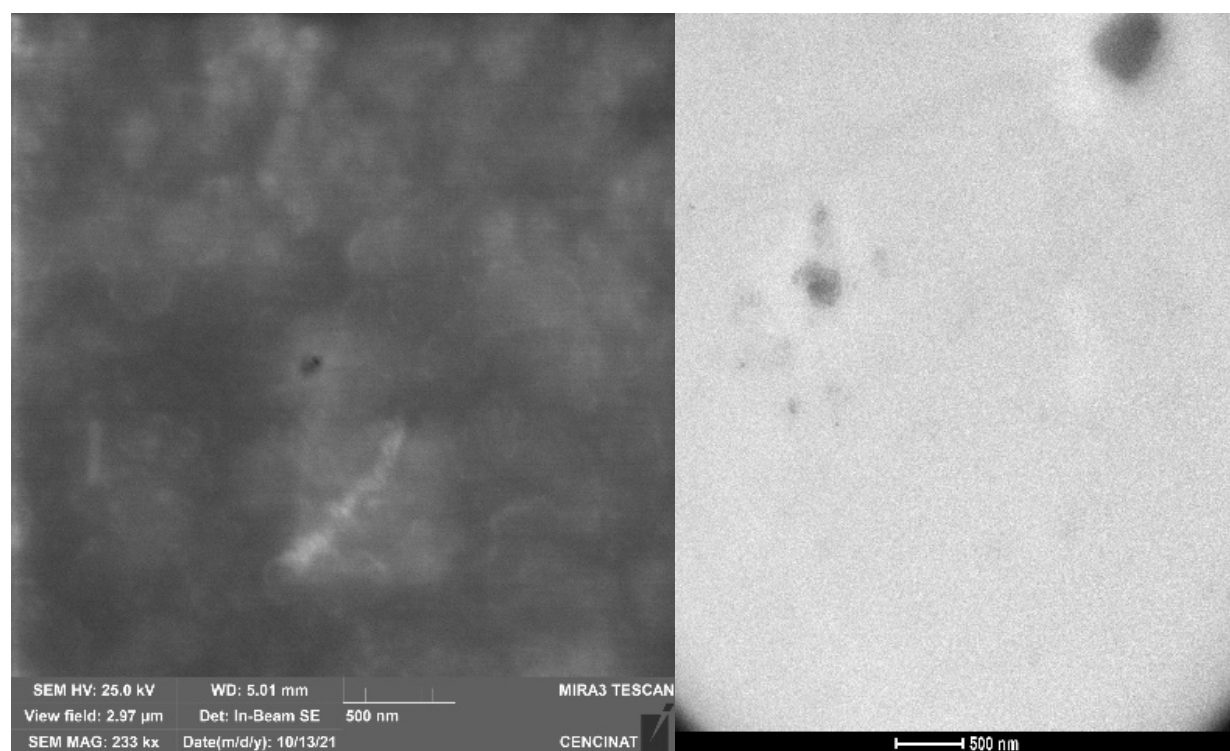
(a)

(b)



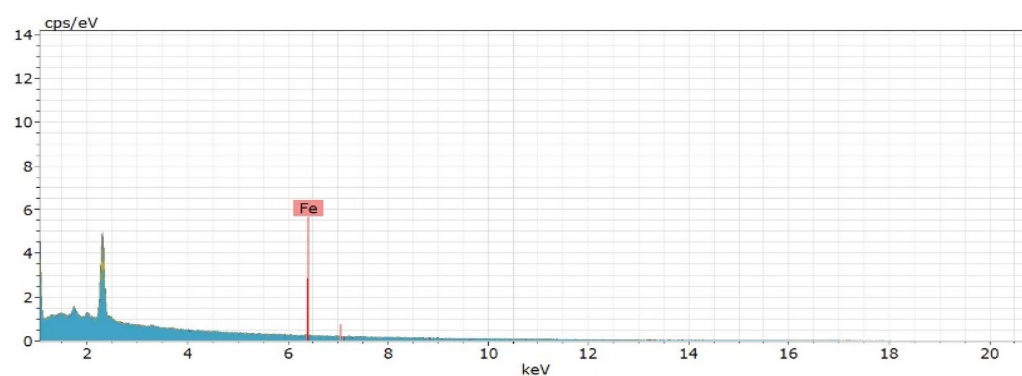
(c)

Figure S11. (a) SEM, (b) TEM, (c) EDS analysis of VCL/PEGDA-MNPs-GO.



(a)

(b)



(c)

Figure S12. (a) SEM, (b) TEM, (c) EDS analysis of VCL/PEGDA-MNPs-MWCNTs.

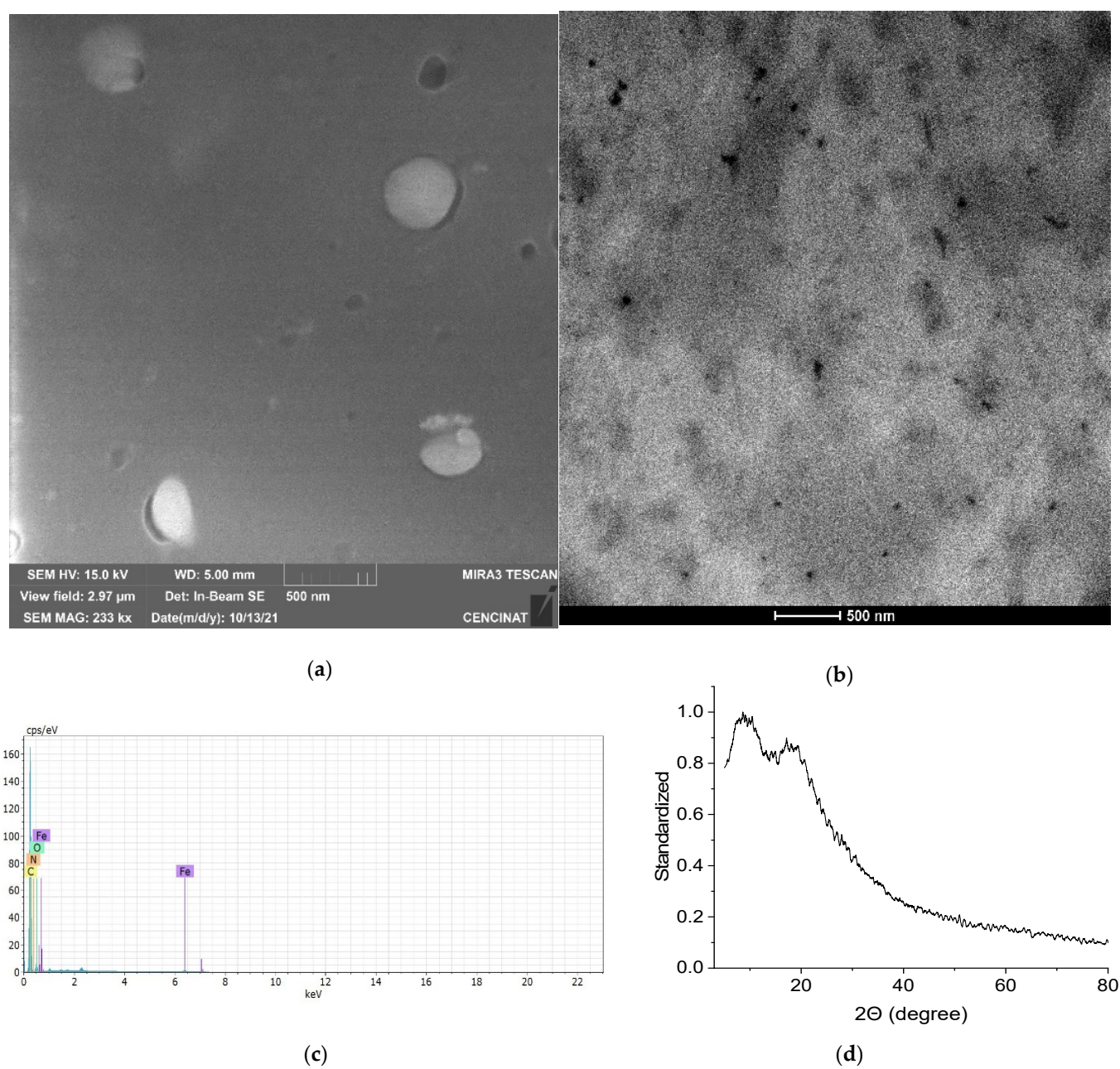


Figure S13. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of VCL/PEGDA-MNPs-GO-ZnMintPc.

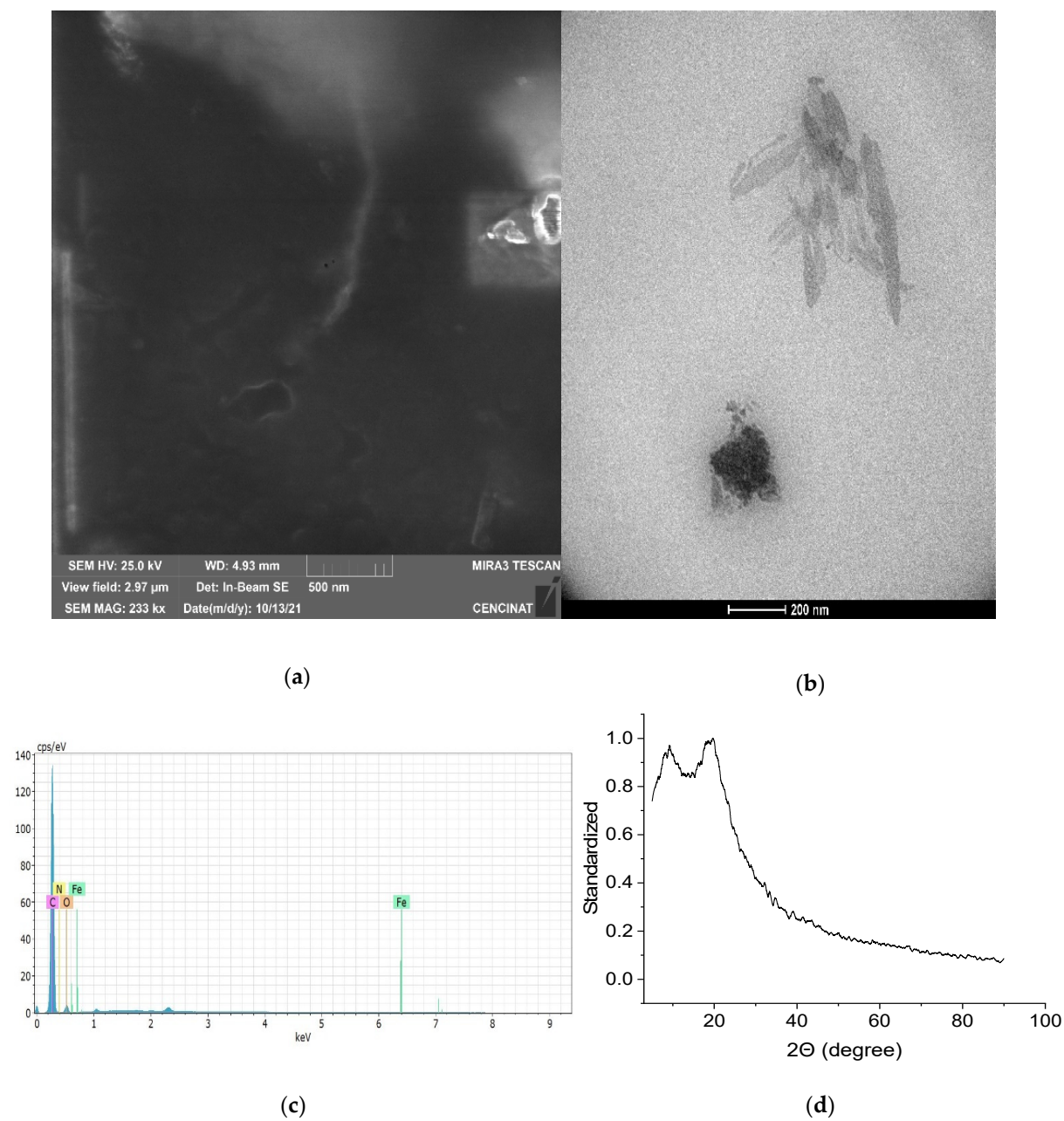


Figure S14. (a) SEM, (b) TEM, (c) EDS and (d) XRD analysis of VCL/PEGDA-MNPs-MWCNTs-ZnMintPc.