

Supporting Data

Highly Efficient TiO₂-Functionalized Nylon-6 Nanofibrous Membranes for Rapid Adsorptive Removal of Atrazine from Water

Saira Sidhu¹, Syeda Sara Hassan^{1*}, Muhammad Rizwan¹, Zeeshan Khatri², Safina Kamboh

¹, Akbar Ali³, Khalid Hussain Thebo^{4*}, Ahmed Nadeem⁵

¹*U.S - Pakistan Centre for Advanced Studies in Water, Mehran University of Engineering & Technology, Jamshoro, Pakistan*

²*Department of Textile Engineering, Mehran University of Engineering & Technology, Jamshoro, Pakistan*

³*MIIT Key Laboratory of Critical Materials Technology for New Energy Conversion and Storage, State Key Laboratory of Urban Water Resource and Environment, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, PR China*

⁴*Department of Chemistry, Mirpur University of Science & Technology (MUST), Mirpur, A&J Kashmir, Pakistan*

⁵*Department of Pharmacology and Toxicology, College of Pharmacy, King Saud University, Riyadh 11451, Saudi Arabia*

*Corresponding Authors: sshassan.uspcasw@faculty.muet.edu.pk (S.S.H.)**

*khalidthebo@yahoo.com (K.H.T.)**

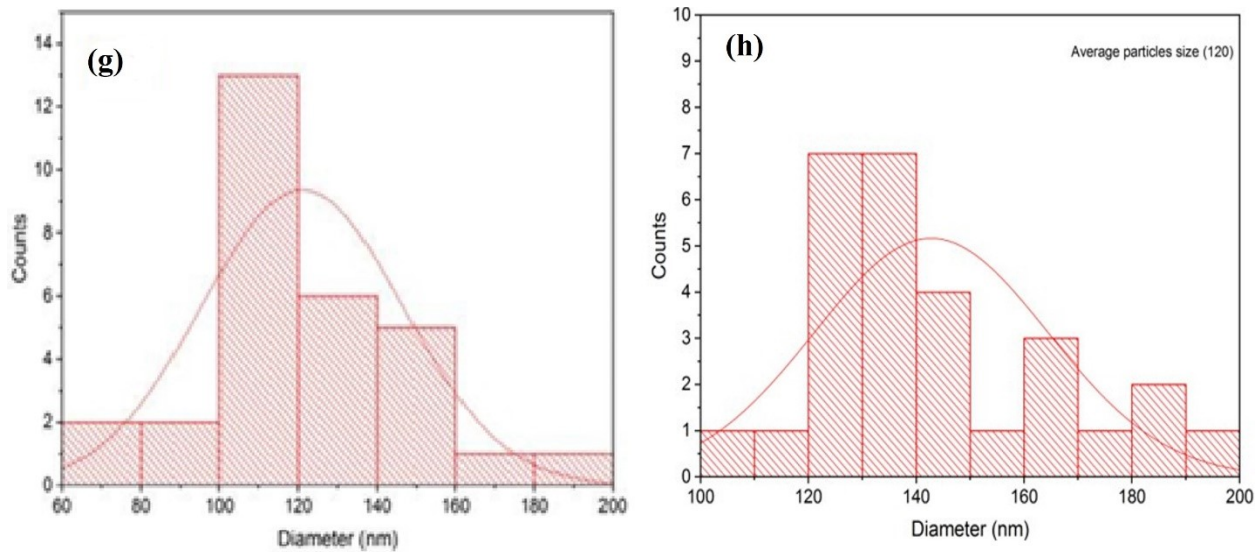


Fig. S1. Histogram showing average particle size of TiO₂ nanoparticles and nanofibers.

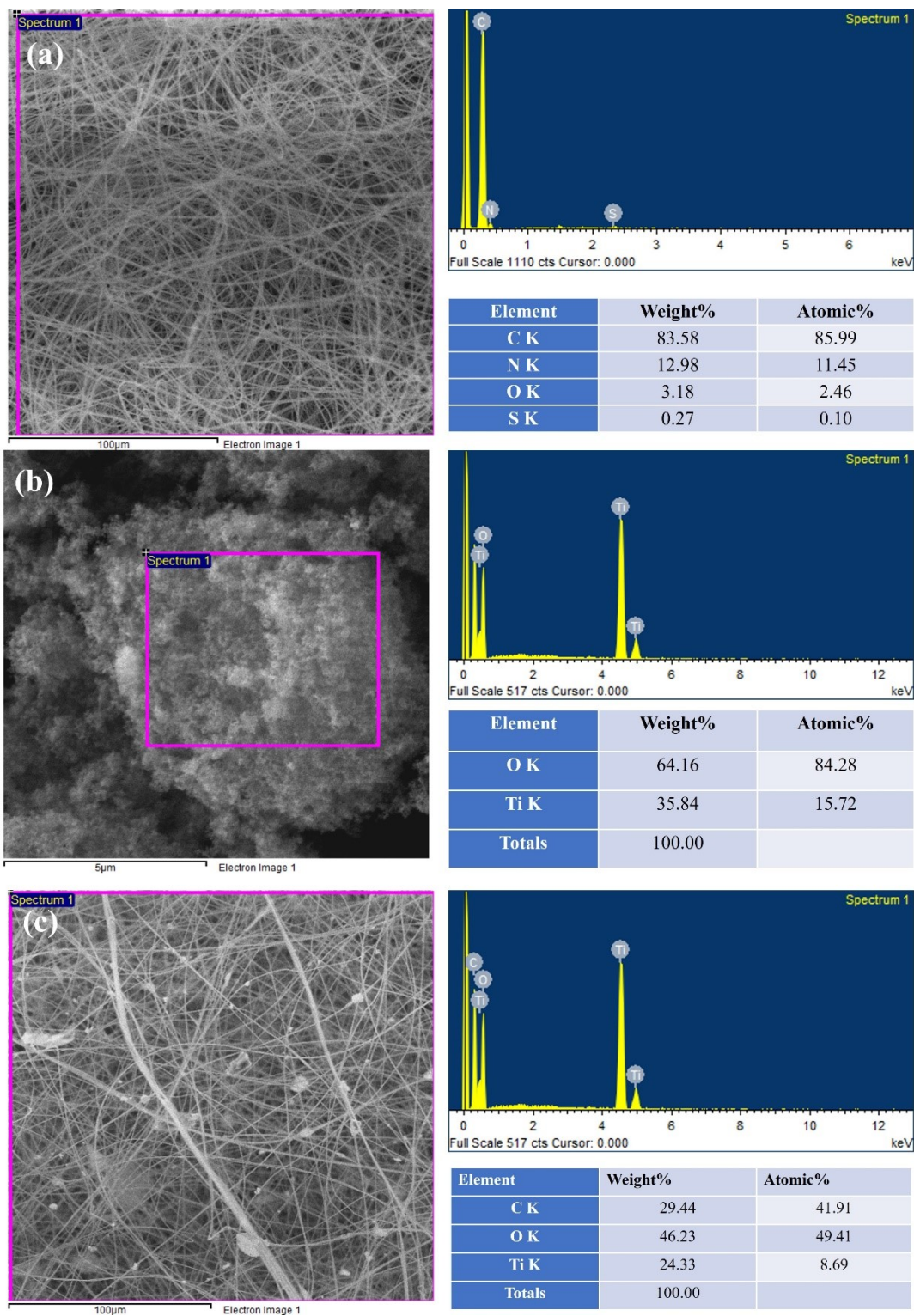


Fig. S2. EDS studies of (a) nylon-6, (b) TiO₂ NPs and (c) nylon-6/TiO₂ nanofibrous membranes

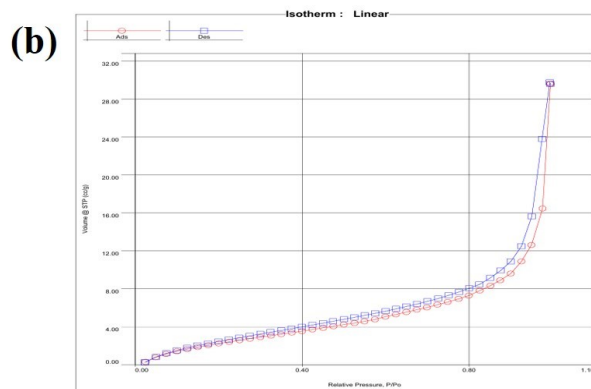
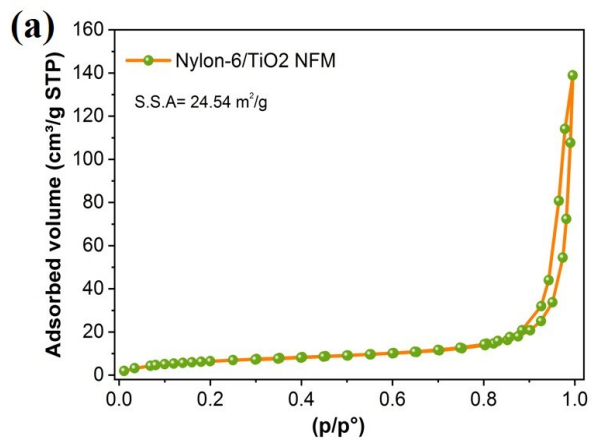


Fig. S3. BET surface area of (a) nylon-6/TiO₂ and (b) nylon-6 membranes, respectively.

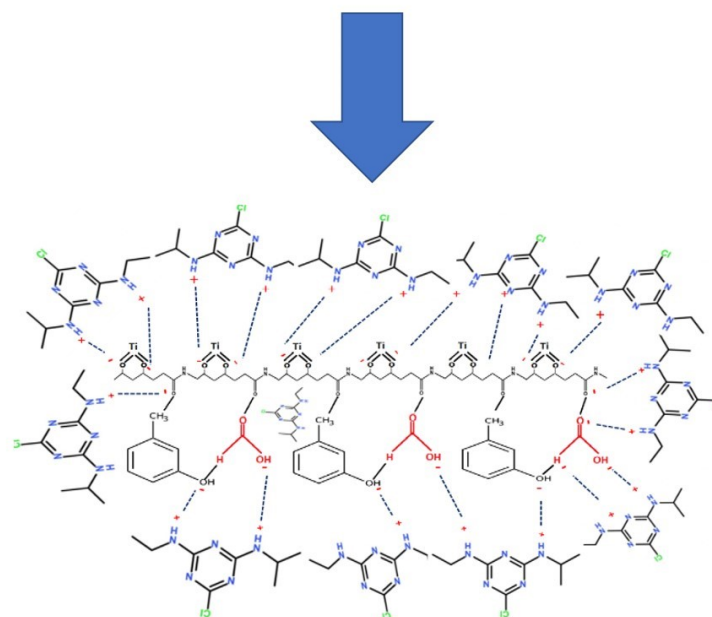
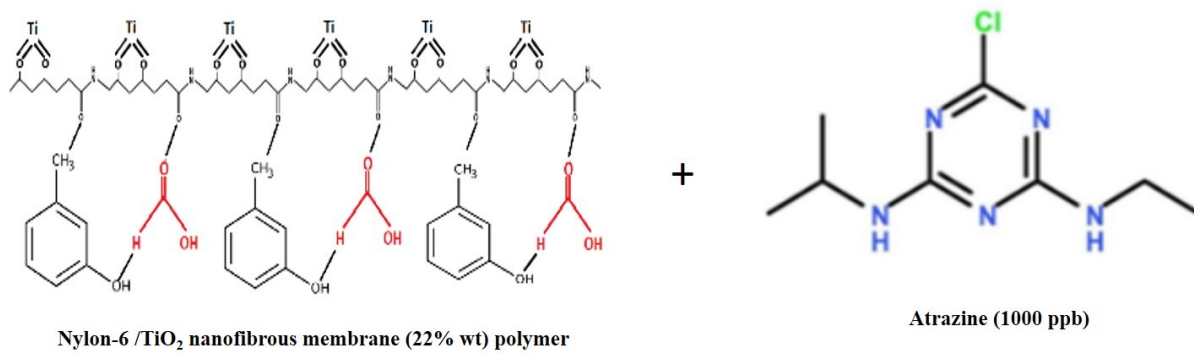


Fig. S4. Adsorption mechanism for the pollutant (atrazine) adsorption process by TiO₂-embedded nylon-6/TiO₂ nanofibrous membranes (22 wt%) polymer-derived nanofiber membrane.

Table S1. BET surface area, pore volume, and pore diameter of NFM

Sample	BET Surface Area (m ² /g)	Pore Volume (cm ³ /g)	Pore Diameter (dv/d)
Nylon-6	10.124	0.045	5.042
Nylon-6/TiO₂	24.54	0.037	2.034