

Supplementary Information

Free-standing $\text{SiO}_2/\text{TiO}_2\text{-MoS}_2$ composite nanofibrous membranes as nano-adsorbent for efficient Pb(II) removal

Luiza A. Mercante,^{1,2} Rafaela S. Andre,¹ Rodrigo Schneider,^{1,3} Luiz H.C. Mattoso,¹ Daniel S. Correa^{1,3*}*

¹Nanotechnology National Laboratory for Agriculture, Embrapa Instrumentação, 13560-970, São Carlos, SP, Brazil

²General and Inorganic Chemistry Department, Institute of Chemistry, Federal University of Bahia, 40170-280, Salvador, BA, Brazil

³PPGQ, Department of Chemistry, Center for Exact Sciences and Technology, Federal University of São Carlos, 13565-905, São Carlos, SP, Brazil

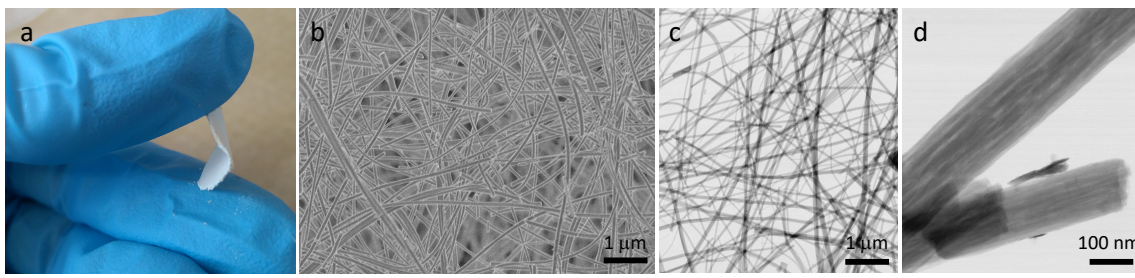


Figure S1. (a) Digital photo, (b) FEG-SEM, (c) TEM and (d) HRTEM images of $\text{SiO}_2/\text{TiO}_2$ NFMs.

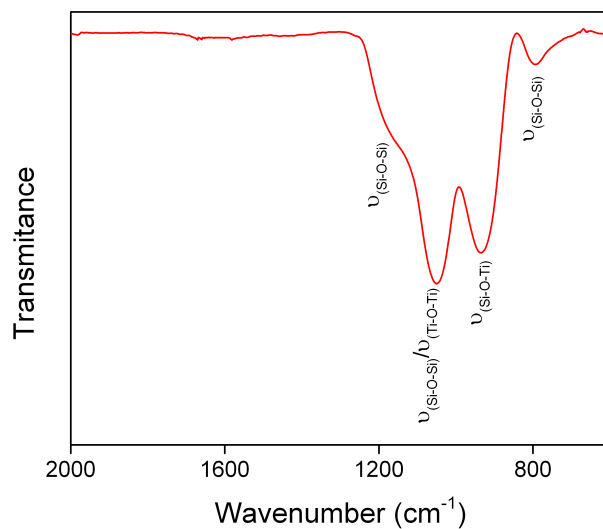


Figure S2. FTIR spectrum of SiO₂/TiO₂ NFMs.

Table S1. Isotherm parameters of Pb(II) adsorption on SiO₂/TiO₂-MoS₂ NFMs.

Langmuir Isotherm			Freundlich Isotherm		
$q_{max} (mg\ g^{-1})$	$K_L (L\ mg^{-1})$	R^2	$1/n$	$K_f (L\ mg^{-1})$	R^2
740.7	0.0034	0.9997	0.8776	5.64	0.9943

Table S2. Kinetic parameters of Pb(II) adsorption on SiO₂/TiO₂-MoS₂ NFMs.

Pseudo-second order			Pseudo-first order		
$q_e (mg\ g^{-1})$	$k_2 (g\ mg^{-1}\ min^{-1})$	R^2	$q_e (mg\ g^{-1})$	$k_1 (min^{-1})$	R^2
270.3	0.0024	0.9912	198.3	0.0011	0.9451