

Supplementary Material (ESI) for New J. Chem.

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Fabrication and characterization of water-stable electrospun polyethyleneimine/polyvinyl alcohol nanofibers with super dye sorption capability

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Contents:

Additional SEM image of PEI/PVA nanofibrous mats, the MB sorption amount as a function of mat exposure time, molecular structures of MB and methylene blue, and plots representing the data fitting to MB sorption isotherm and rate models.

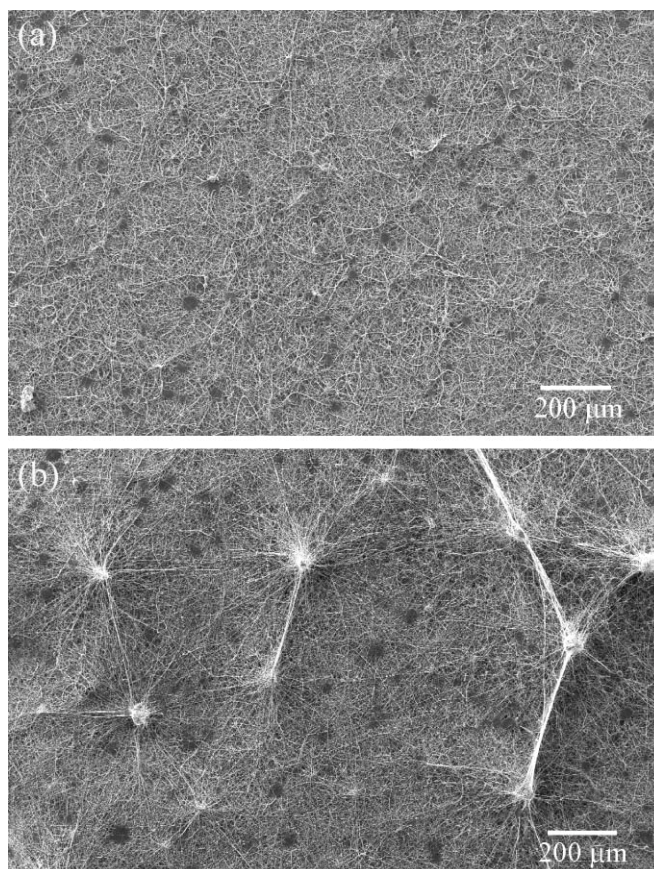


Figure S1. Lower magnification SEM images of the electrospun PEI/PVA nanofibrous mats formed at the applied voltage of 18.6 kV (a) and 25 kV (b).

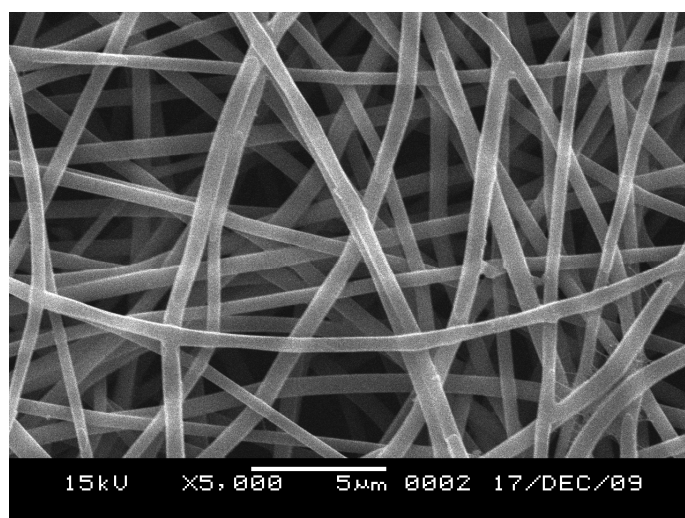


Figure S2. SEM image of the GA vapor-crosslinked PEI/PVA nanofibrous mats after immersing into water for a week.

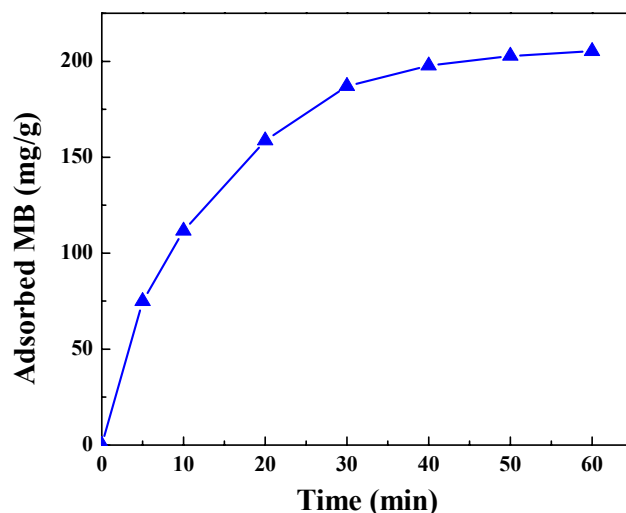


Figure S3. The methyl blue sorption capacity of GA vapor-crosslinked PEI/PVA nanofibrous mats as a function of exposure time. The amount of MB adsorbed at equilibrium (q_e) was determined using the following equation:

$$q_t = \frac{(C_0 - C_t)V}{m}$$

Where C_0 and C_t (mg/L) are the initial MB concentration and MB concentration at different time intervals, respectively, V is the volume of the MB solution, and m is the weight of the nanofibrous mats.

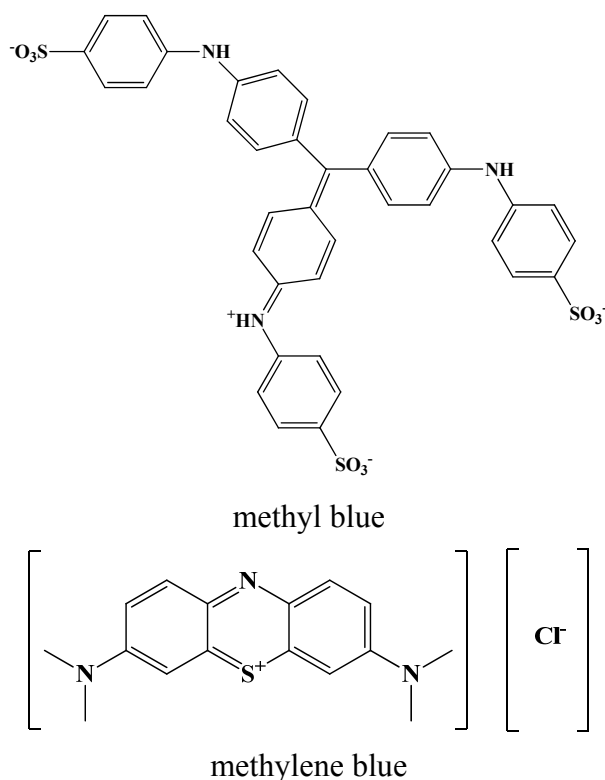


Figure S4. Molecular structures of methyl blue and methylene blue.

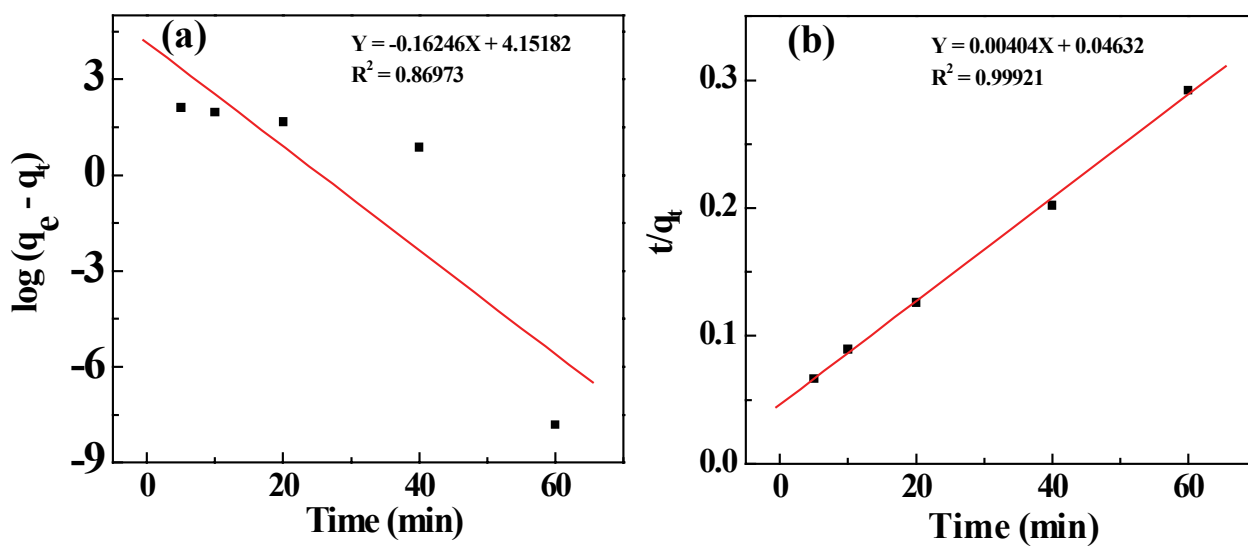


Figure S5. Rate of MB sorption on crosslinked PEI/PVA nanofibrous mats: (a) pseudo-first-order; (b) pseudo-second-order.

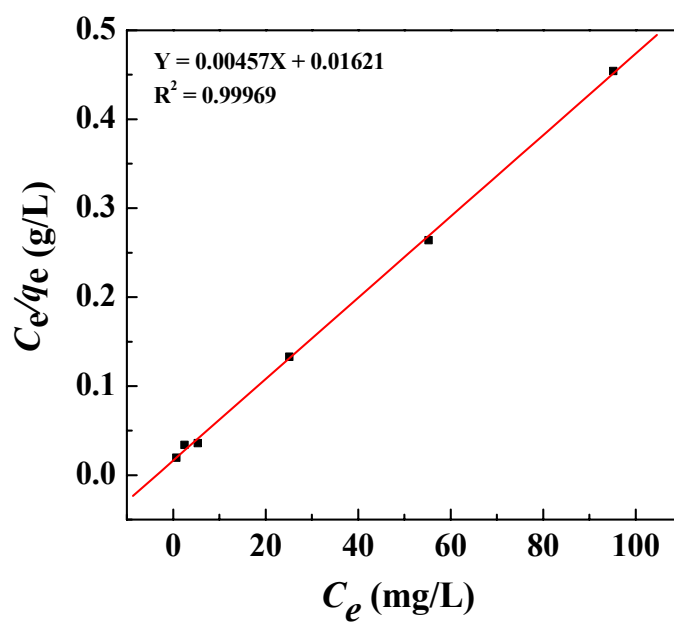


Figure S6. Langmuir plot of the sorption of MB on the crosslinked PEI/PVA nanofibrous mats.