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Alumoxane/Ferroxane Nanoparticles for the Removal of Viral Pathogens: The Importance of Surface Functionality to Nanoparticle Activity†

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Electronic supplementary information (ESI)

Fig. S1. The viral adsorption assembly.

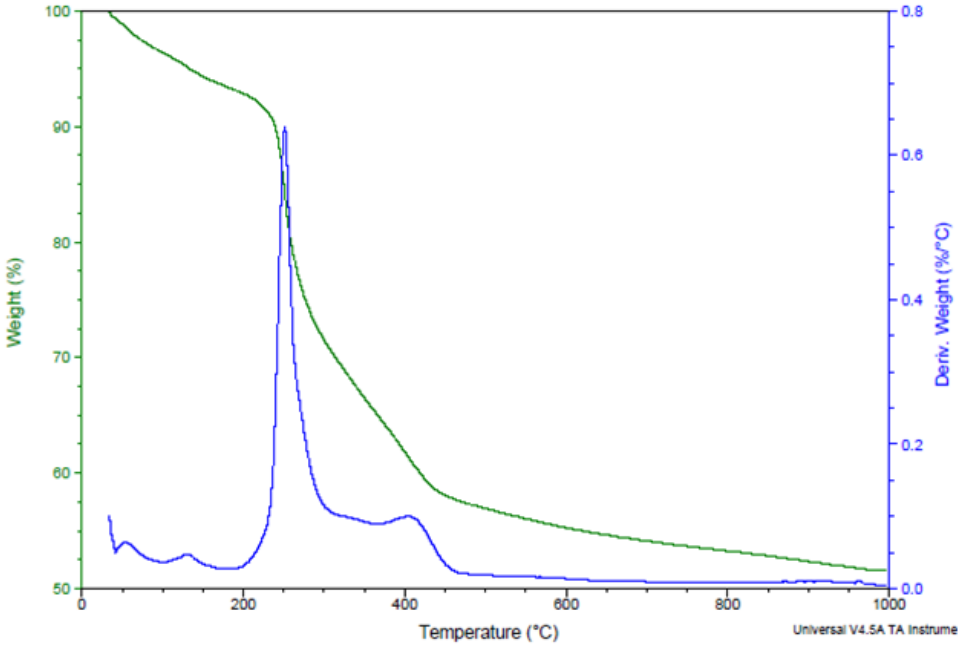

Fig. S2. TG/DTA analysis of L-cysteic acid terminated alumina coated silicon wafer.

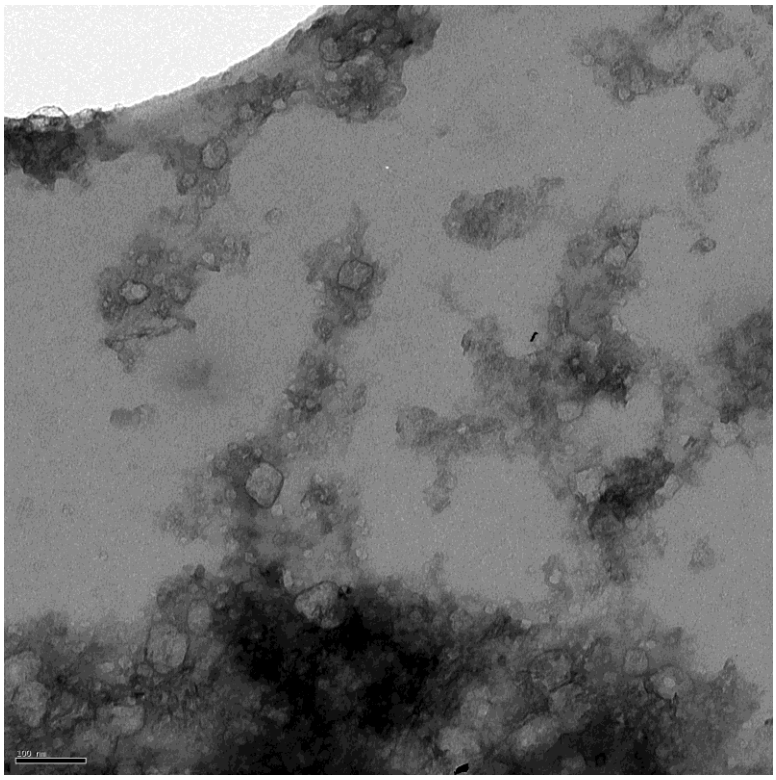

Fig. S3. TEM of L-cysteic acid alumoxane.

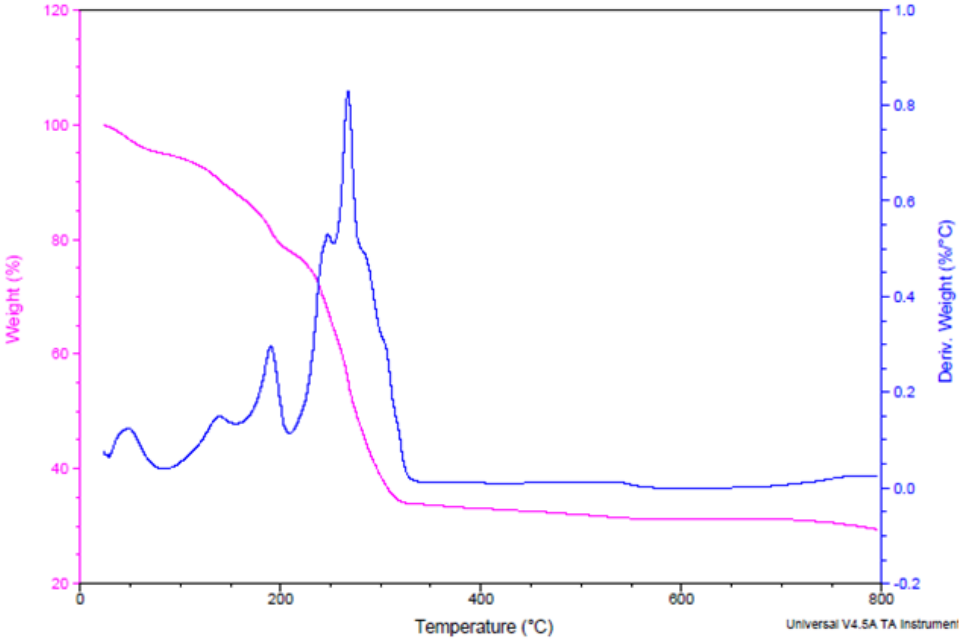

Fig. S4. TG/DTA of L-cysteic acid ferroxane.

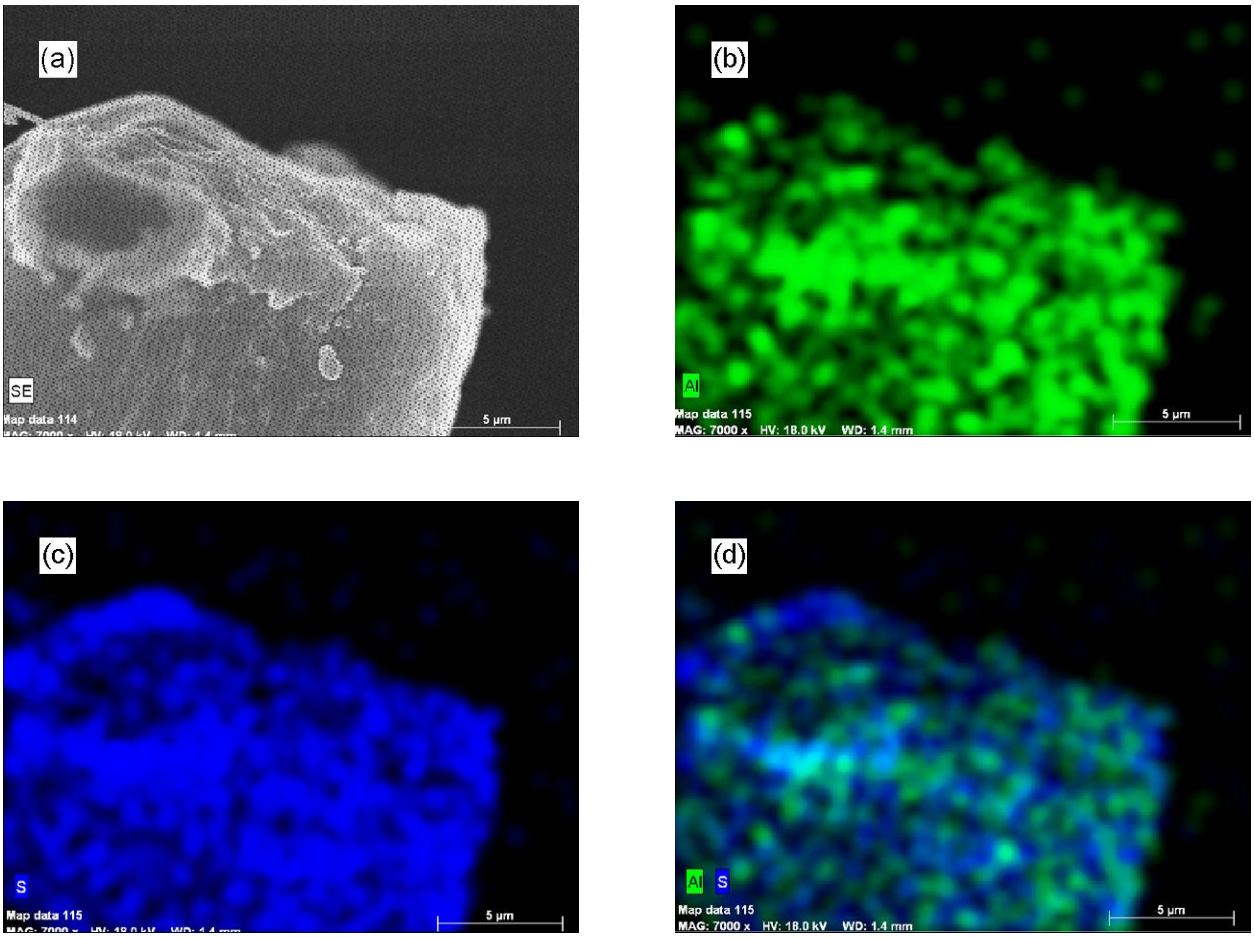

Fig. S5. SEM and associated EDS map of an individual alumoxane/ferroxane nanoparticle coated fiber (NPN-2x): (a) SEM image, (b) sulfur, (c) aluminum, and (d) composite of aluminum and sulfur.

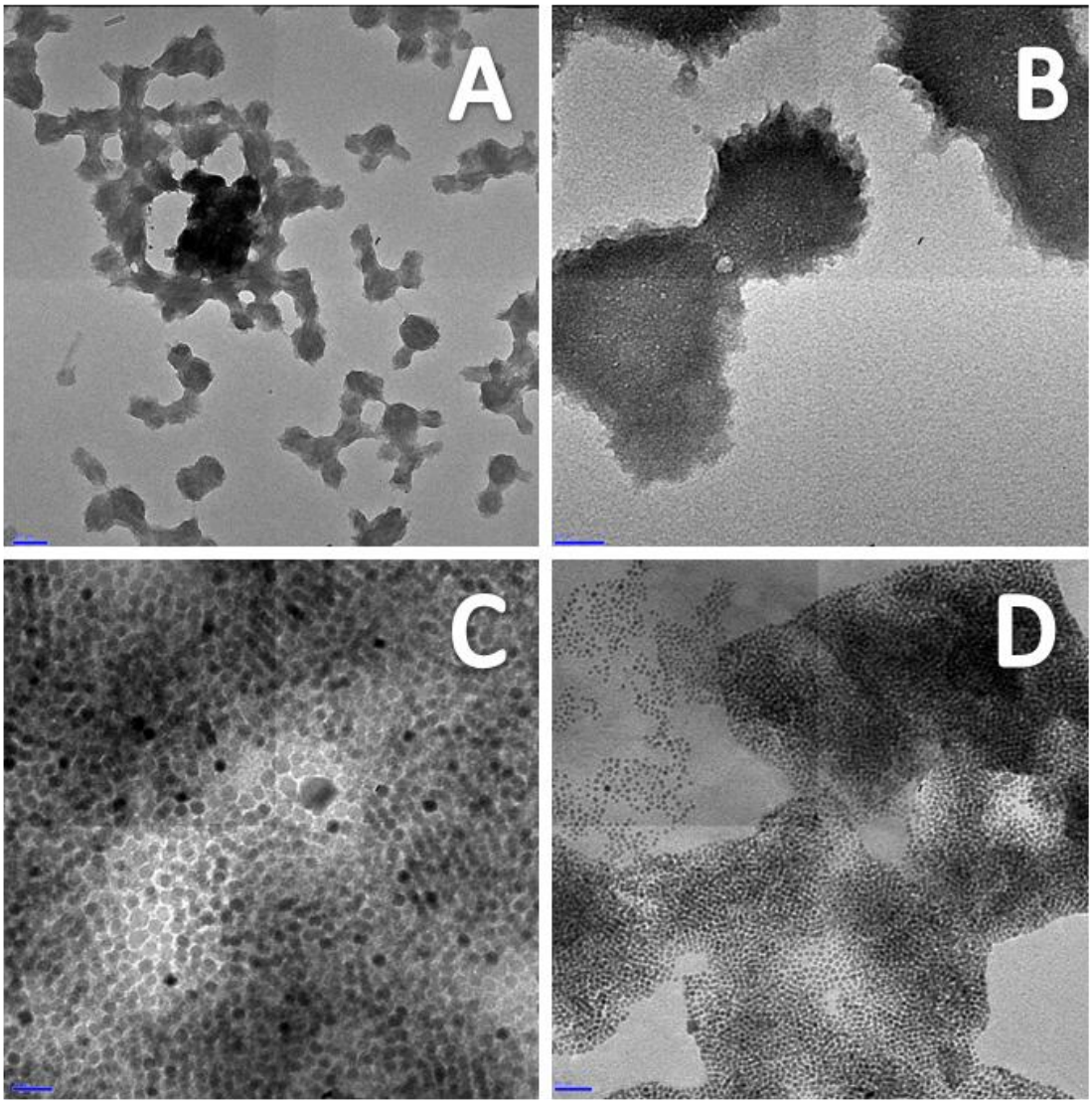

Fig. S6. TEM of L-cysteic acid ferroxane.

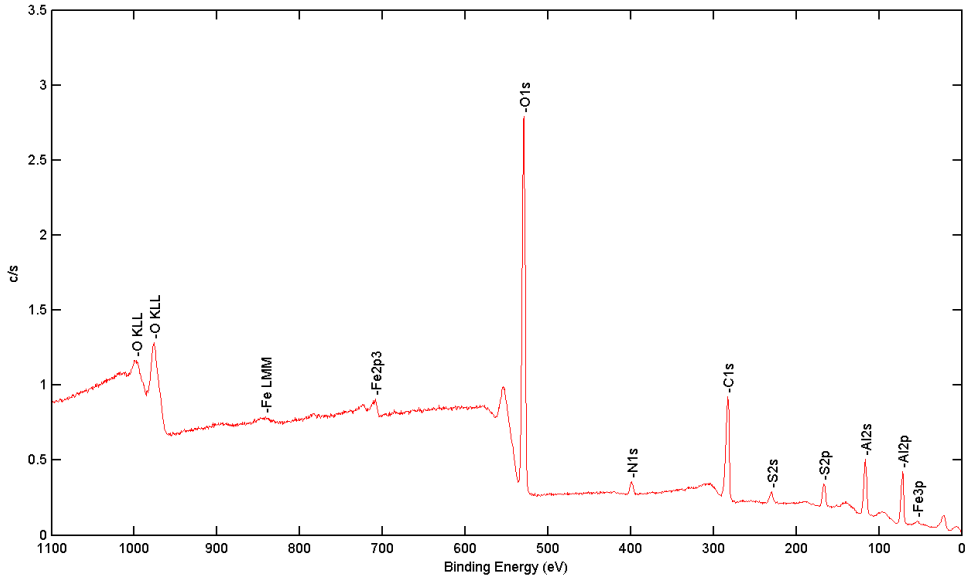

Fig. S7. XPS of L-cysteic acid alumoxane/ferroxane composite membrane.

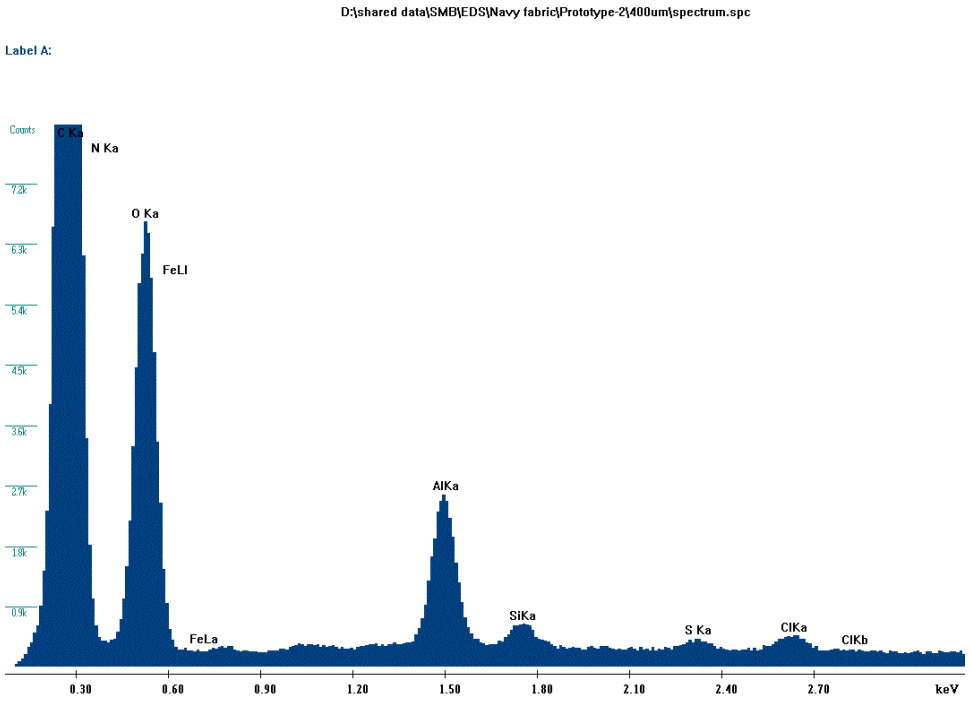

Fig. S8. EDX spectrum of L-cysteic acid alumoxane/ferroxane composite membrane (NPN).

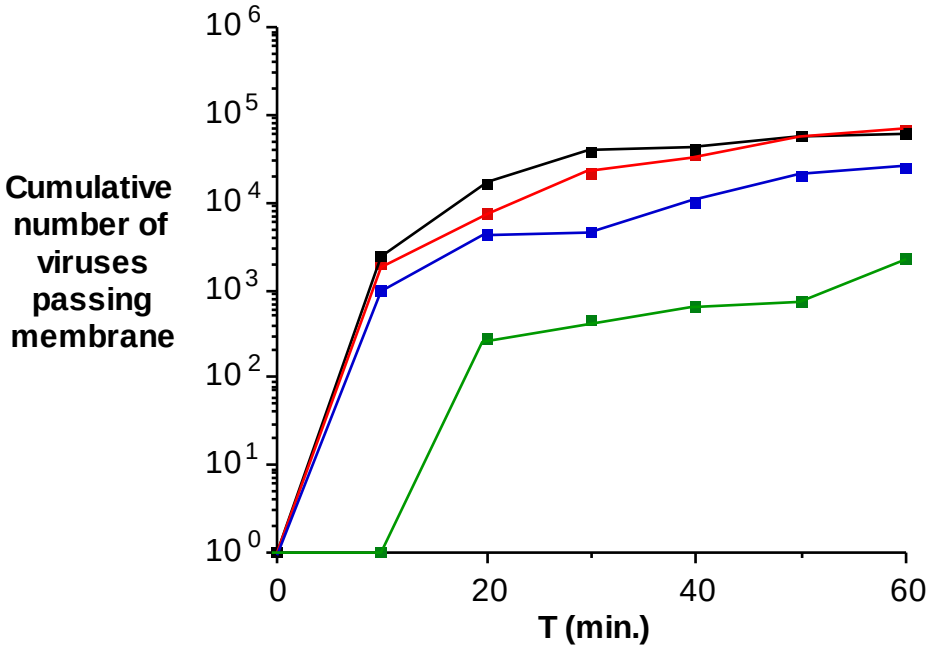

Fig. S9. Log plot of cumulative number of viruses passing through the Nomex®-derived filters as a function of exposure time for MS2 bacterage adsorption studies: untreated Nomex® (■), alumoxane-ferroxane (■), alumoxane-ferroxane XXX (■), and alumoxane-ferroxane XX heated to 160 °C for 2 hours (■).

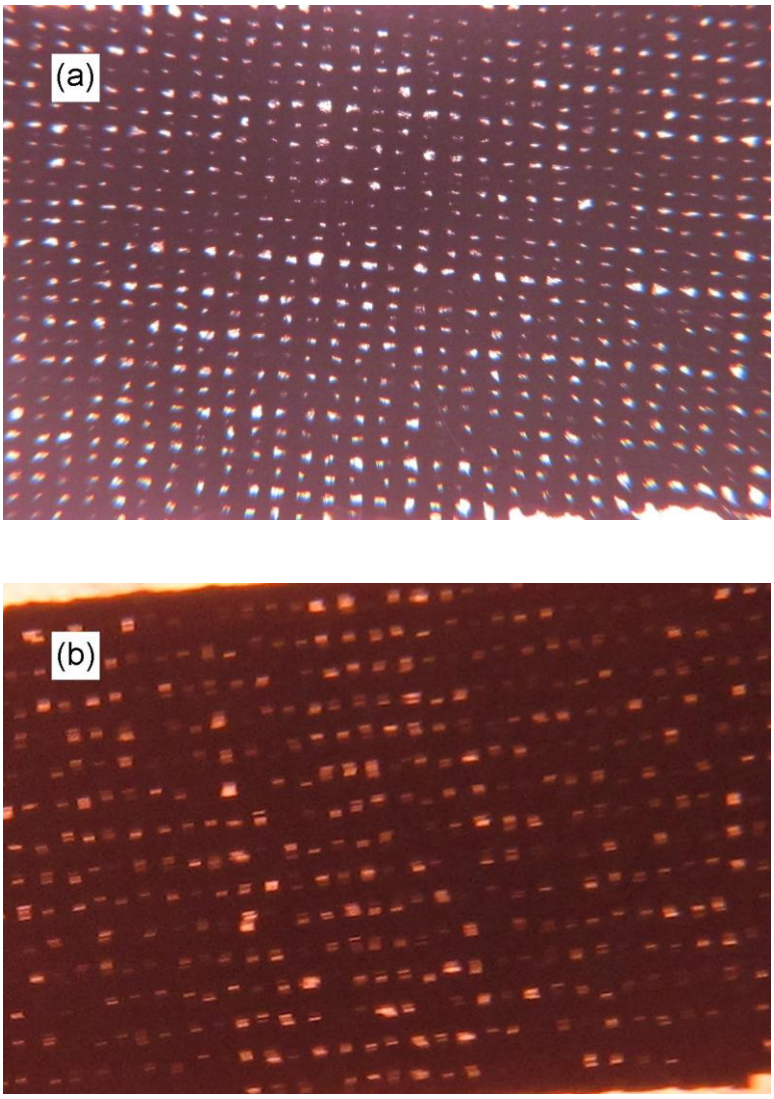

Fig. S10. Optical images of (a) Nomex® fabric and (b) L-cysteic acid alumoxane functionalized Nomex® fabric. Adapted from S. J. Maguire-Boyle and A. R. Barron, *J. Membrane Sci.,* 2011, **382**, 107-115.