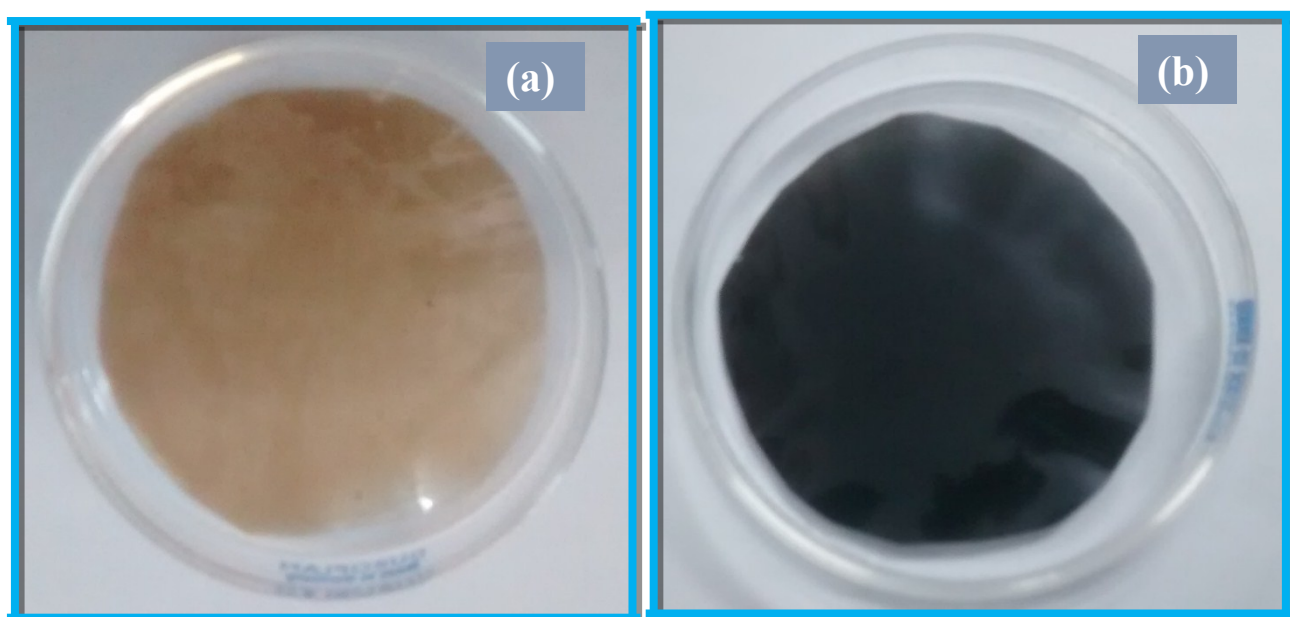


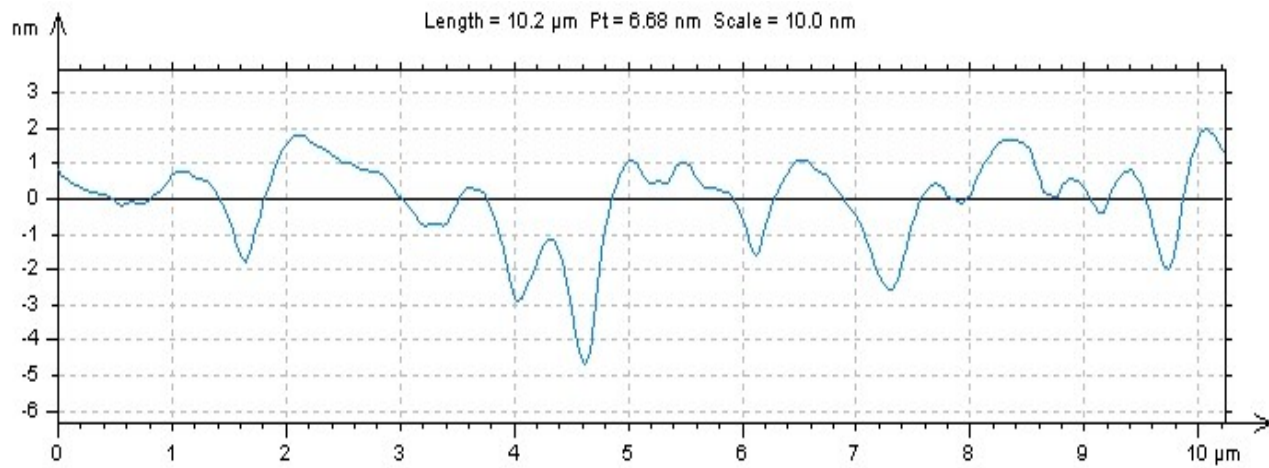
### Supplementary data



**Fig. S1.** Dispersion of GNF and SGNF in water



**Fig. S2.** Photographs of prepared membranes (a) Pristine SPPK and (b) SPPEK-SGNF.



**Fig.S3.** AFM surface roughness profile for (a) Pristine SPPEK and (b) SPPEK-SGNF (0.5 wt.%).