(Supporting Information)

Lateral assembly of oxidized graphene flakes into large-scale transparent conductive thin films with a three-dimensional surfactant 4-sulfocalix[4]arene

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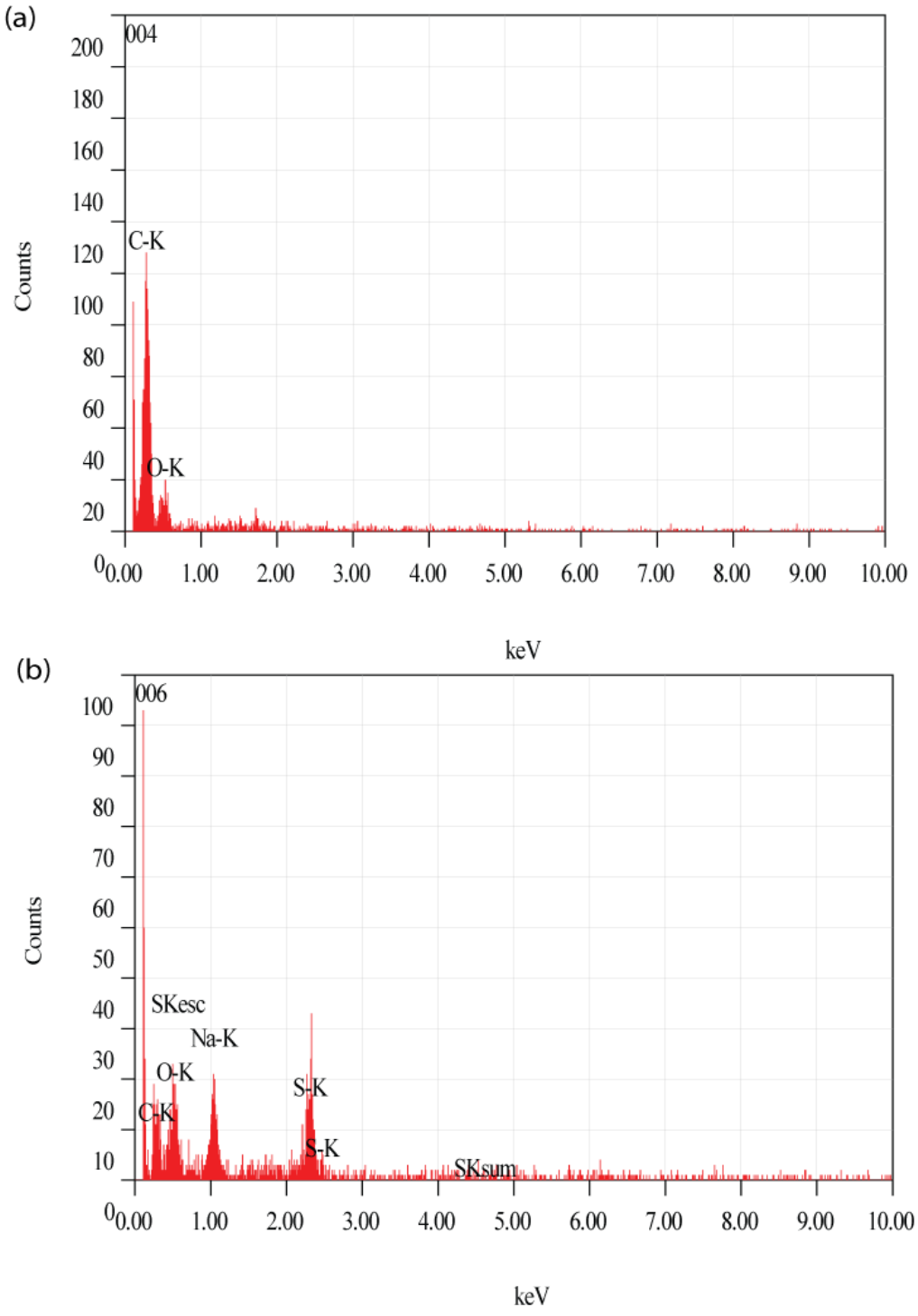

Fig. S1 EDX spectra of (a) oGr flakes (from electrochemical exfoliation) and (b) pure SCX powder

Fig. S2 oGr/SCX dispersion in water.

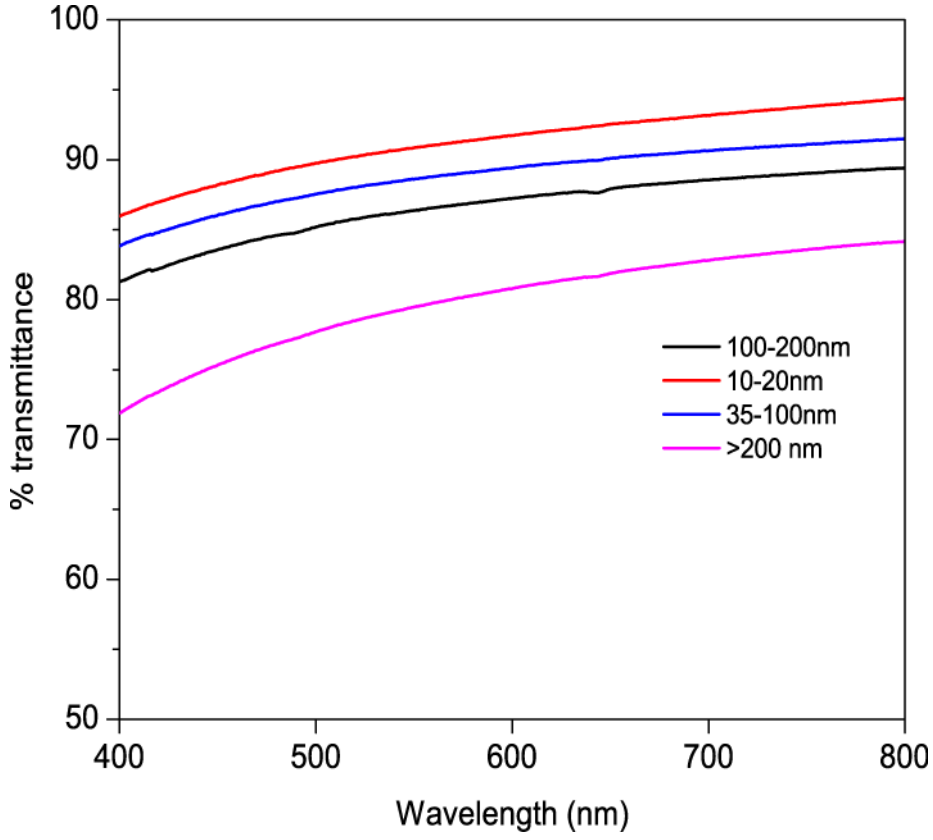

Fig. S3 The transparency measurements of the red-oGr thin films with different thicknesses on the glass substrates.

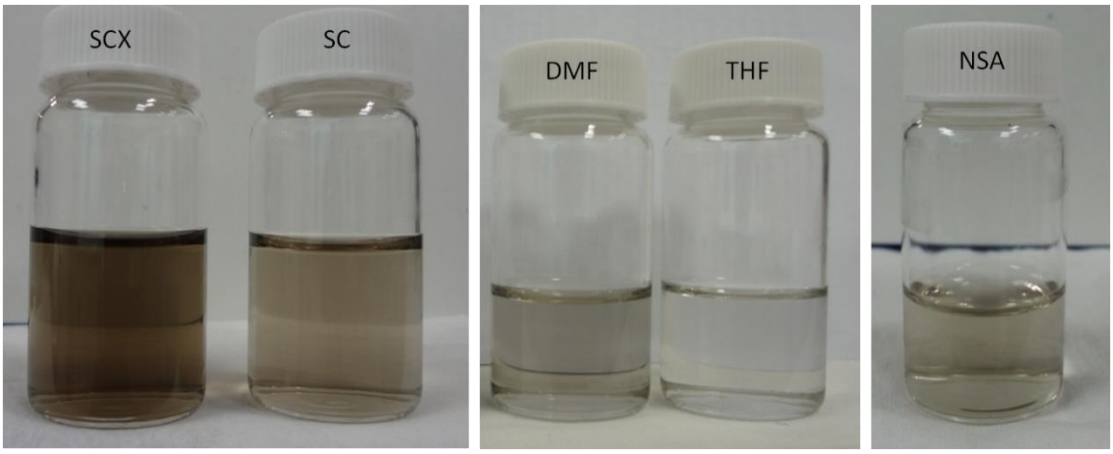

Fig. S4 oGr flakes dispersed in SCX/water (0.5 mM), SC/water (0.5 mM), DMF, THF, and NSA/water.

Notes for preparing the oGr/SCX and oGr/SC dispersion:
oGr flakes (0.5 mg each) were dispersed separately in 0.5 mM SC and 0.5 mM SCX solutions by tip sonication. After tip sonication, both dispersions were centrifuged at 2500 g for 30 mins. The darker color of the oGr/SCX is due to the higher concentration of dispersed/suspended oGr flakes, which illustrates the superiority of SCX over the other surfactants as a dispersion agent for oGr.

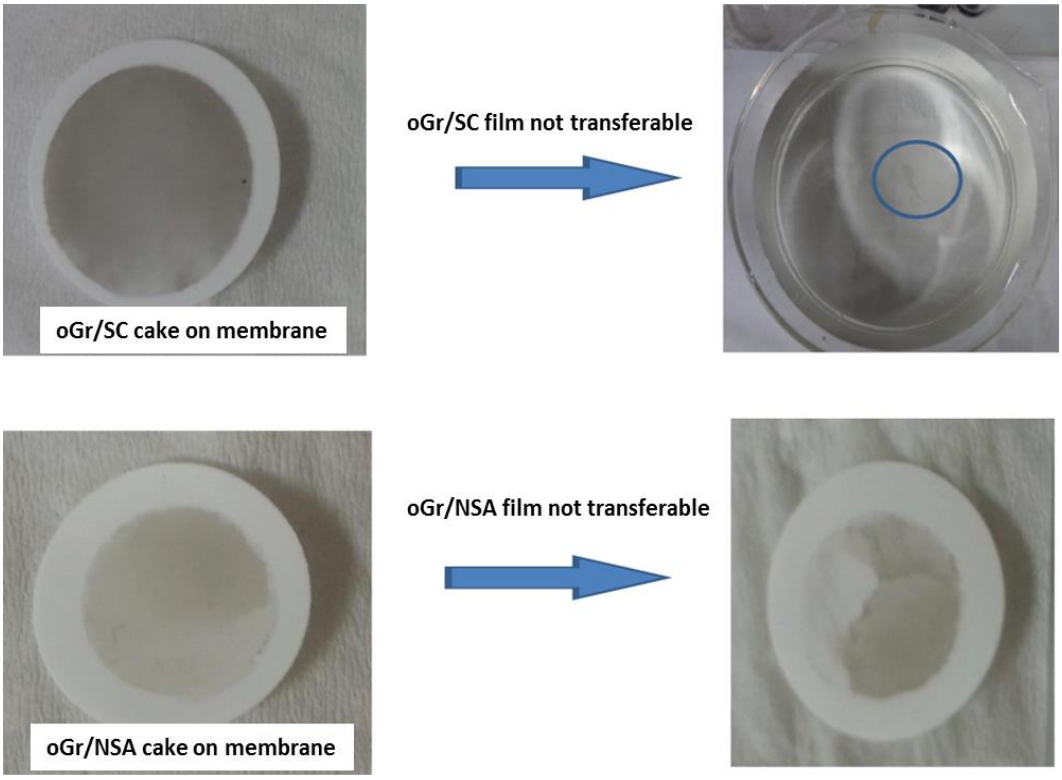

Fig. S5 The oGr film transfer was tried using oGr/SC and oGr/NSA dispersions. Film transfer was unsuccessful due to the failure of a thin film to peel from the wet cake on the filter membrane with SC and NSA dispersing agents.

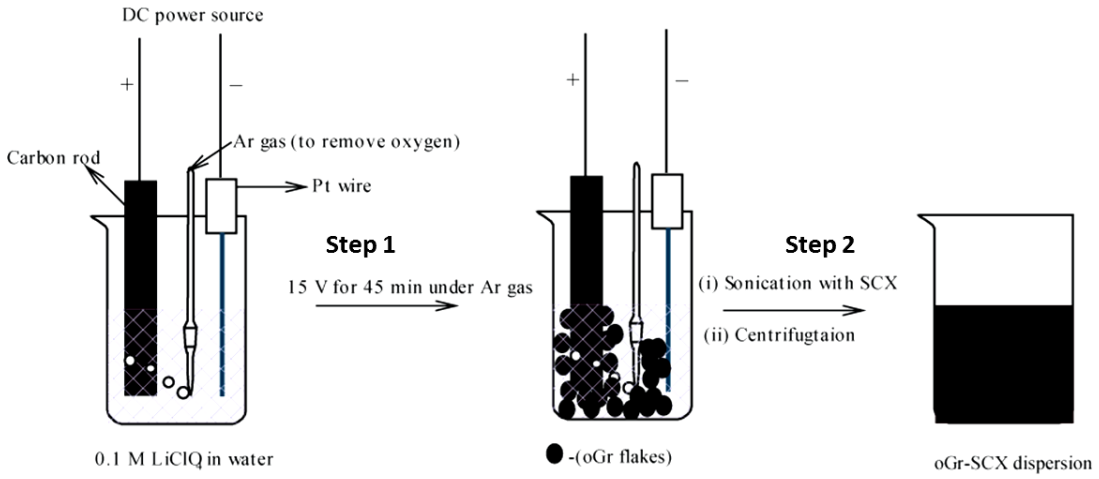

Fig. S6 Process schematic for graphite exfoliation in the presence $LiClO_4$ (0.1 M) under argon environment and preparation of the oGr dispersion in SCX aqueous solution.