Polycaprolactone-templated reduced-graphene oxide liquid crystal nanofibers towards biomedical applications

Sasan Jalili-Firoozinezhad,[a,b,φ,ψ] Mohamad Hasan Mohamadzadeh Moghadam,[c,φ] Mohammad Hossein Ghanian,[b] Mohammad Kazemi Ashtiani,[b] Hossein Alimadadi,[d] Hossein Baharvand,[b,e*] Ivan Martin[a*] and Arnaud Scherberich[a]

[a]Departments of Biomedicine, University Hospital Basel, University of Basel, Hebelstrasse 20, CH-4031 Basel, Switzerland

[b]Department of Stem Cells and Developmental Biology, Cell Science Research Center, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran

[c]Condensed Matter National Laboratory, Institute for Research in Fundamental Sciences, 19395-5531, Tehran, Iran

[d]Center for Electron Nanoscopy, Technical University of Denmark, Fysikvej, Building 307, DK-2800 Kongens Lyngby, Denmark

[e]Department of Developmental Biology, University of Science and Culture, Tehran, Iran

[φ]These authors contributed equally to this work.

[ψ]Current address: Wyss Institute for Biologically Inspired Engineering at Harvard University, 3 Blackfan Circle, Boston MA 02115, USA. sasan.jalili@wyss.harvard.edu.
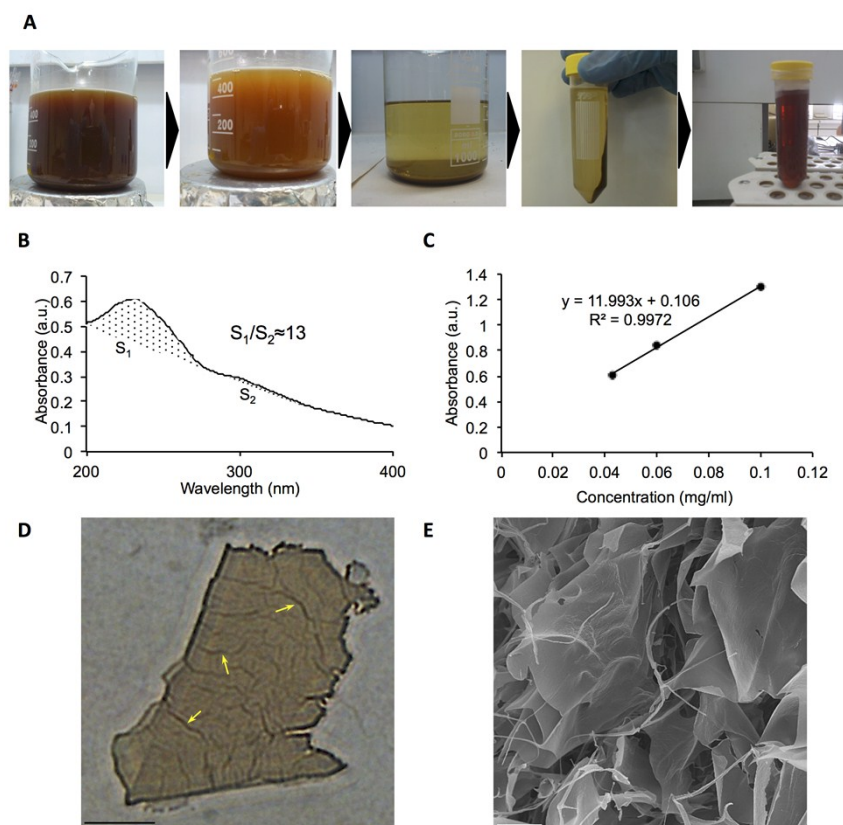
Fig S1. (A) Digital images of graphene oxide (GO) preparation steps. (B) The ratio of areas highlighted as S1 and S2 was calculated ≈13 which corresponds to oxidative nature of GO. Also, UV-vis spectrum shows difference in absorbance intensity at 230 nm and 300 nm regions. (C) According to Beer-Lambert law, ln $I/I_o=\alpha tc$ which I is the light intensity transmitted from the solution, I_o is incident light intensity, α is absorptivity coefficient, t is the path length, and c is concentration, it well describes the linear relationship between the peak intensity centered at 230 nm and GO concentration. (D) Optical micrograph of GO shows small ripples (arrows) on the surface. Scale bar: 25 μm (E) SEM micrographs of GO sheets. Scale bar: 20 μm.
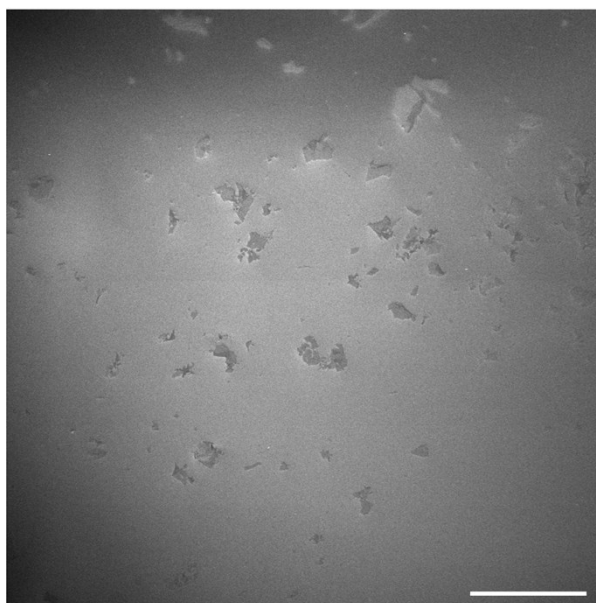

Fig S2. SEM image of GO at low magnification. Scale bar: 100 μm.