Optimization and Doping of Reduced Graphene Oxide-Silicon Solar Cells

Lachlan J. Larsen, Cameron J. Shearer, Amanda V. Ellis, Joseph G. Shapter*

Flinders Centre for NanoScale Science and Technology, School of Chemical and Physical Sciences, Flinders University Bedford Park, GPO Box 2100, Adelaide, SA 5001, Australia

*joe.shapter@flinders.edu.au

Supplemental information:

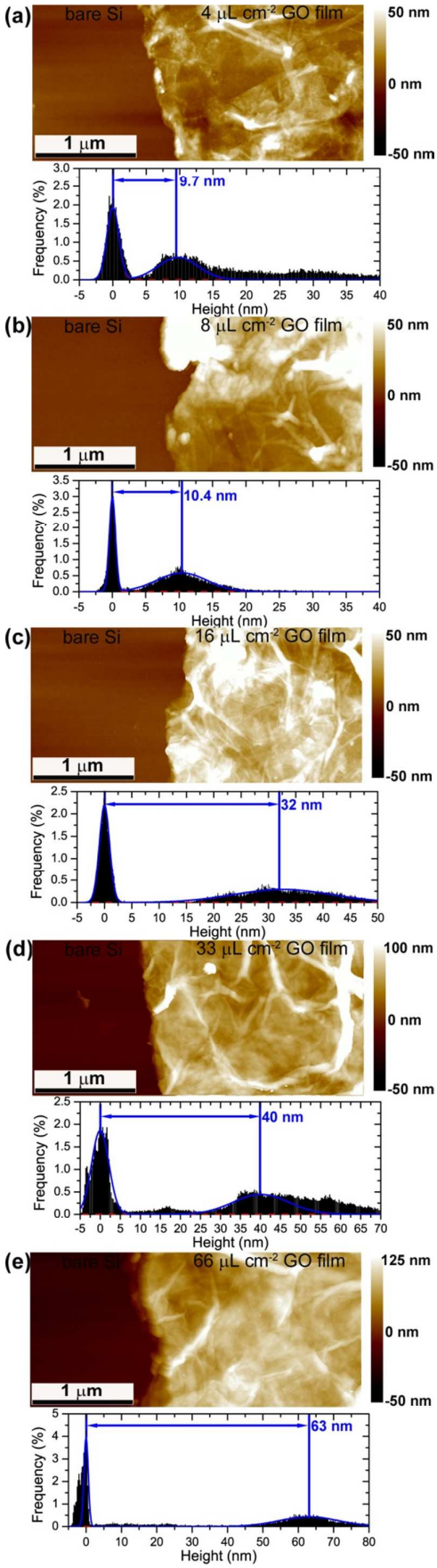
(a)
bare Si
4 μL cm-2 GO film
50 nm
0 nm
-50 nm
1 μm
9.7 nm
Frequency (%)
Height (nm)
(b)
bare Si
8 μL cm-2 GO film
50 nm
0 nm
-50 nm
1 μm
10.4 nm
Frequency (%)
Height (nm)
(c)
bare Si
16 μL cm-2 GO film
50 nm
0 nm
-50 nm
1 μm
32 nm
Frequency (%)
Height (nm)
(d)
bare Si
33 μL cm-2 GO film
100 nm
0 nm
-50 nm
1 μm
40 nm
Frequency (%)
Height (nm)
(e)
bare Si
66 μL cm-2 GO film
125 nm
0 nm
-50 nm
1 μm
63 nm
Frequency (%)
Height (nm)

Figure S1: AFM height images and histograms of a (a) 4 μL·cm^{-2} film, (b) 8 μL·cm^{-2} film (c) 16 μL·cm^{-2} film, (d) 33 μL·cm^{-2} film and (e) 66 μL·cm^{-2} GO films. The flat area on the left of each image is the bare substrate exposed by the scratch.

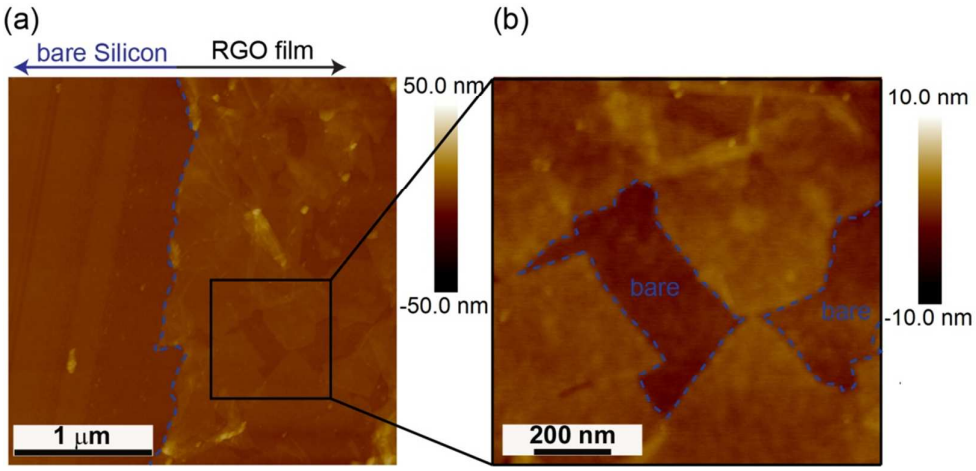

Figure S2: AFM image of 4 μL·cm^{-2} film annealed at 400 ^{o}C, with dashed lines added to image to show (a) bare silicon substrate area obtained using a scalpel and (b) areas of coating in RGO film which do not cover the substrate.