

Electronic Supplementary Information (ESI)

Reversible Functionalization and Exfoliation of Graphite by a Diels-Alder Reaction with Furfuryl Amine

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Fig. S1 Experimental setup for the synthesis of **G-FA**

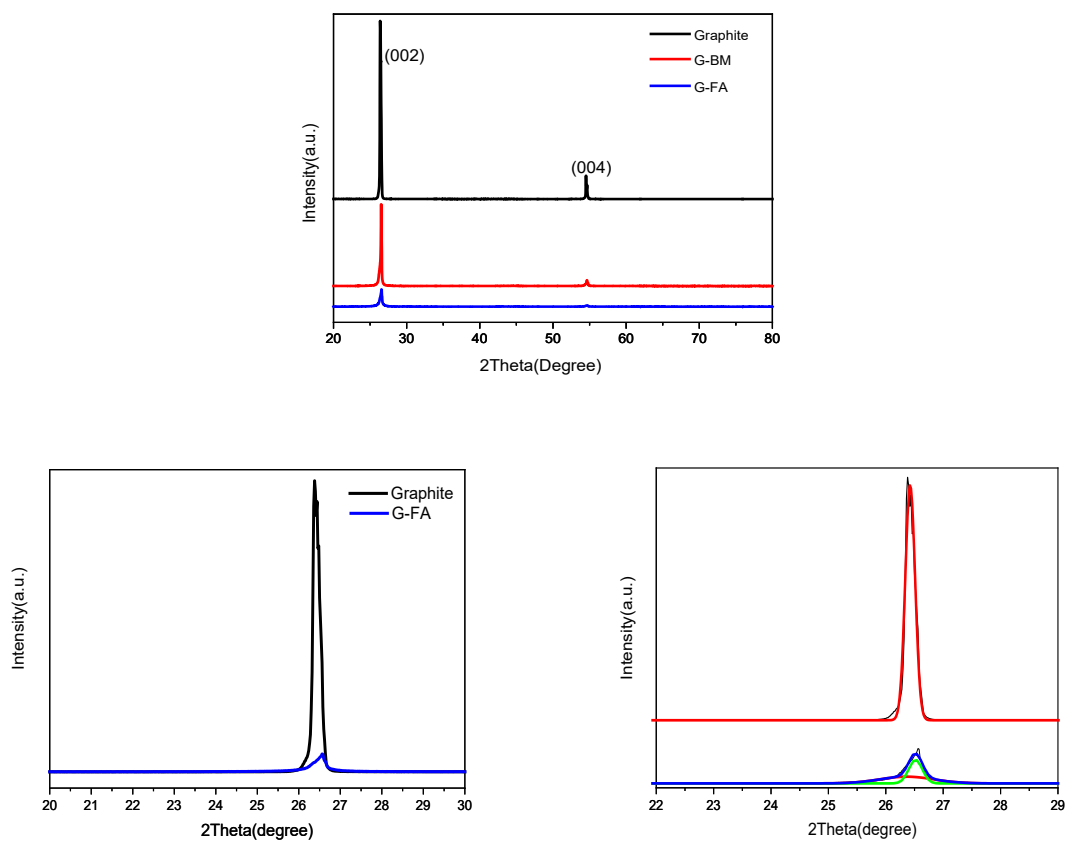
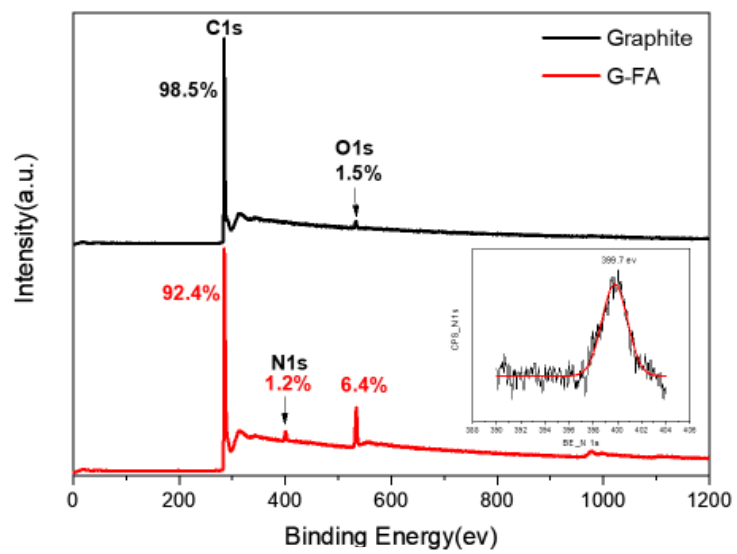


Fig. S2 XRD patterns of a) **pristine graphite, G-BM and G-FA** b) Expansion of 002 peak of **pristine graphite and G-FA** c) Gaussian peak fitting of (b)



(a)

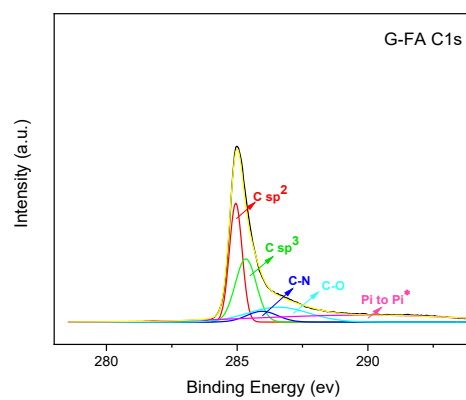
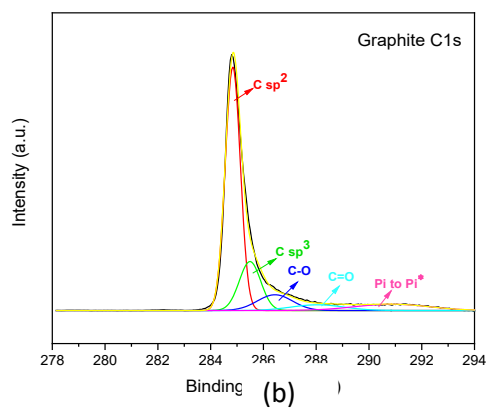
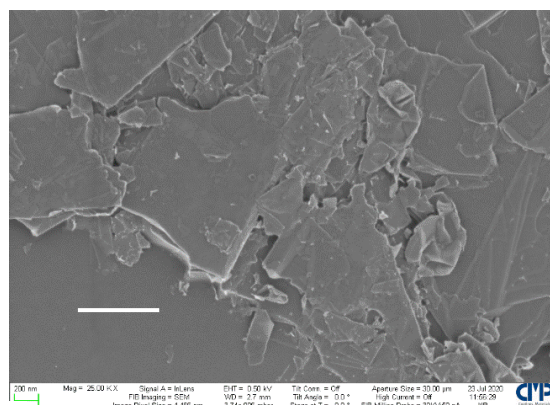
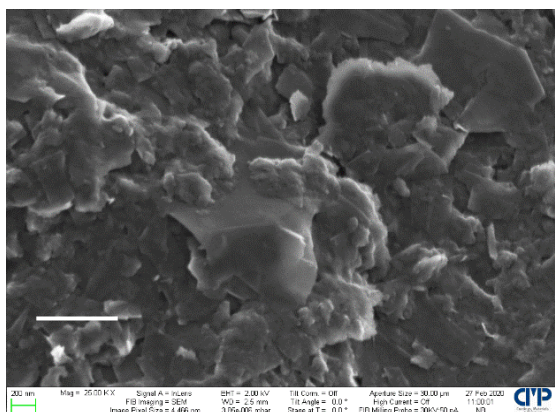
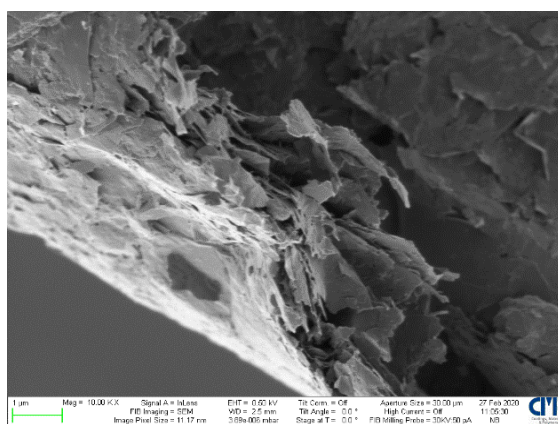
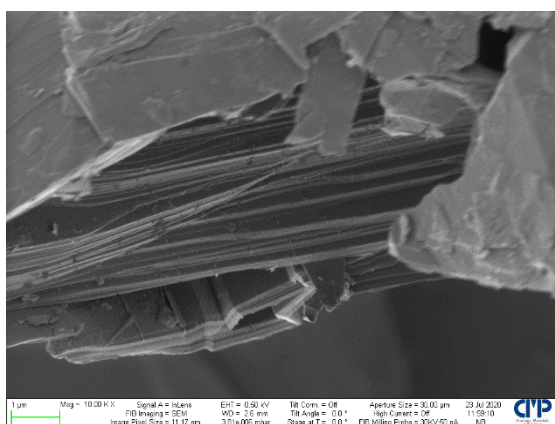


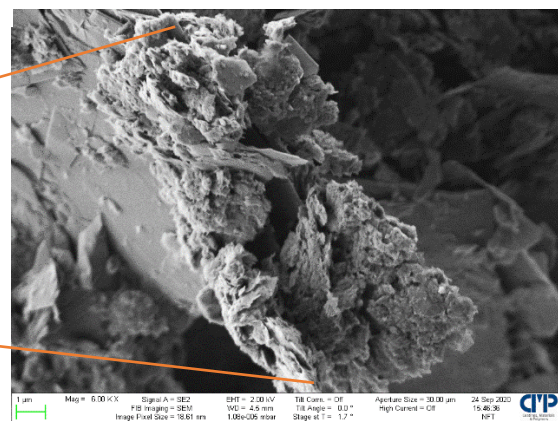
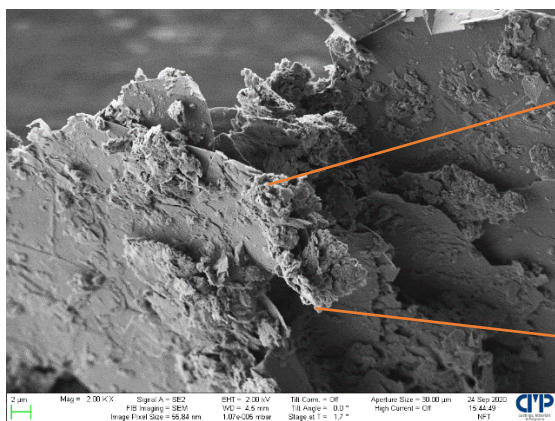
Fig. S3 a) Survey of XPS of pristine graphite and G-FA b) High resolution C1s after Gauss fitting



(a)



(b)



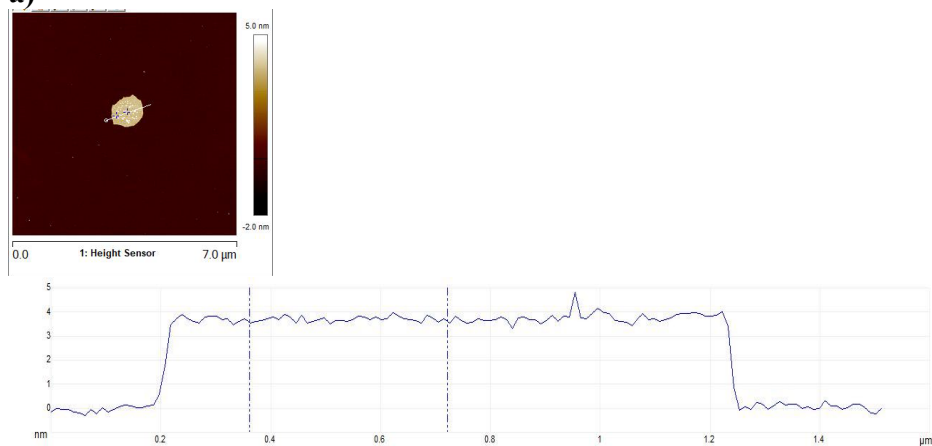
(c)

Fig. S4. SEM images a) on the surface of **pristine graphite**(left) and **G-FA** (right) b) at the edge c) scaling up the edge of **G-FA** sample

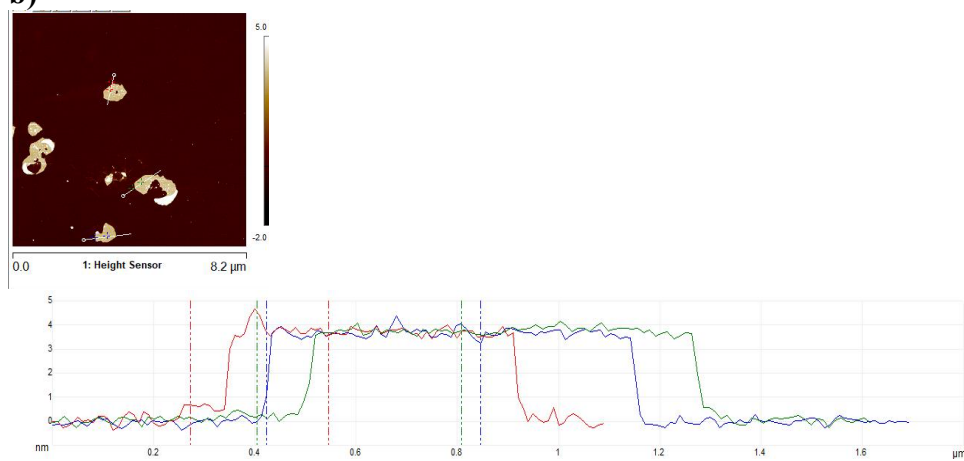
AFM measurements

G-FA:

a)



b)



c)
Graphite:

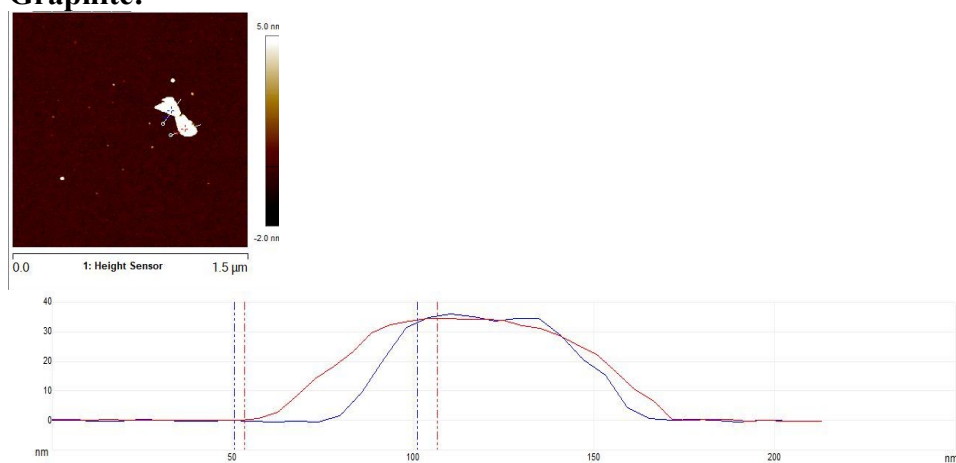


Fig. S5. AFM images and graphs for a) G-FA, Scale: 7 micrometer b) G-FA, Scale: 8.2 micrometer c) Pristine graphite, Scale: 1.5 micrometer