

Efficient Catalytic Conversion of Corn Stalk and Xylose into Furfural over Sulfonated Graphene in  $\gamma$ -Valerolactone

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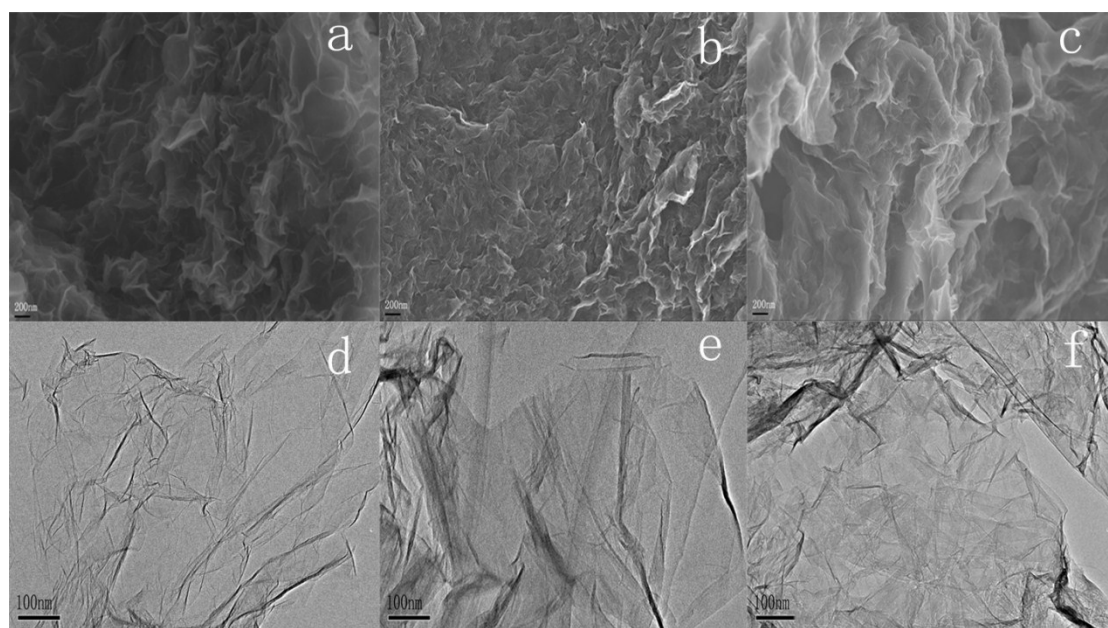


Fig. S1. SEM images of RGO (a), SG (b) and used SG (c), TEM images of RGO (d), SG (e) and the 5<sup>th</sup> recycling SG (f).

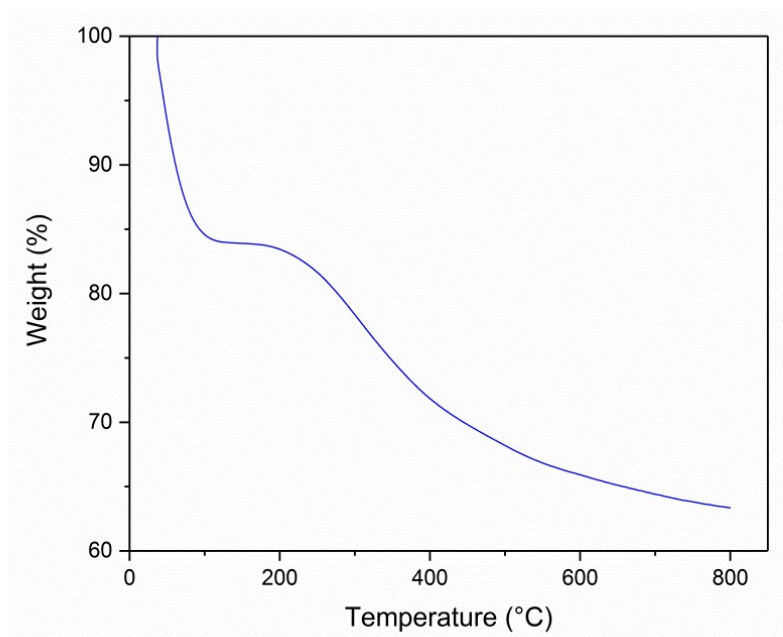


Fig. S2 Thermogravimetric (TG) analysis pattern of sulfonated graphene

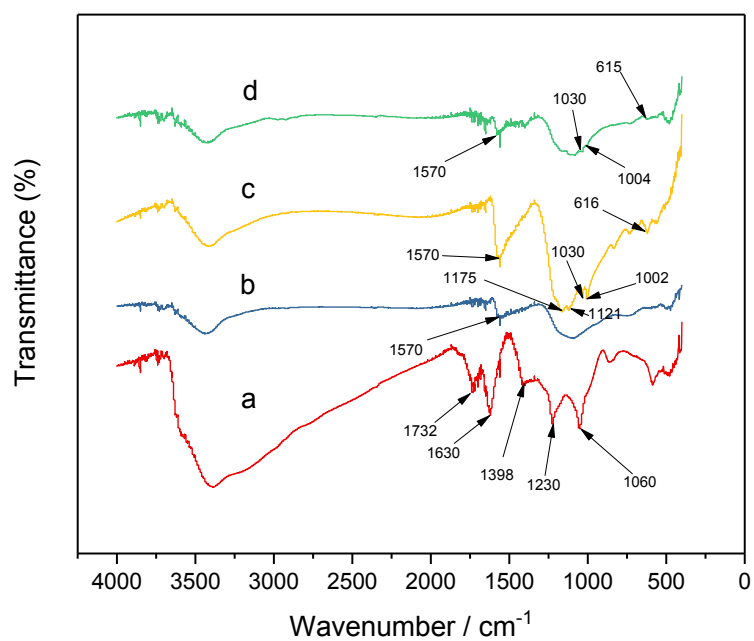


Fig. S3. FT-IR spectra of GO (a), RGO (b), SG (c) and the 5<sup>th</sup> recycling SG (d).

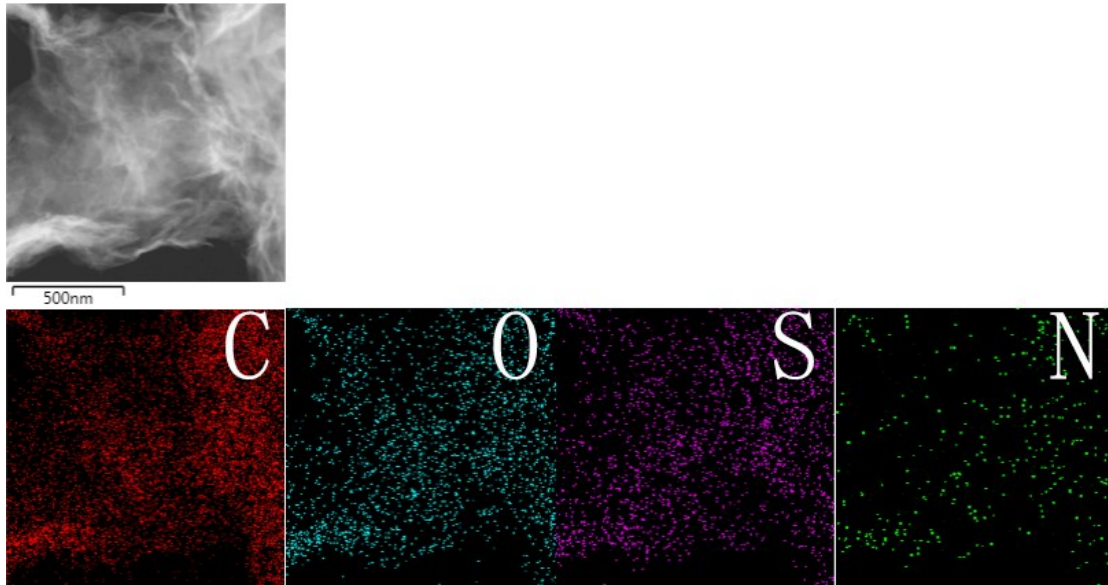
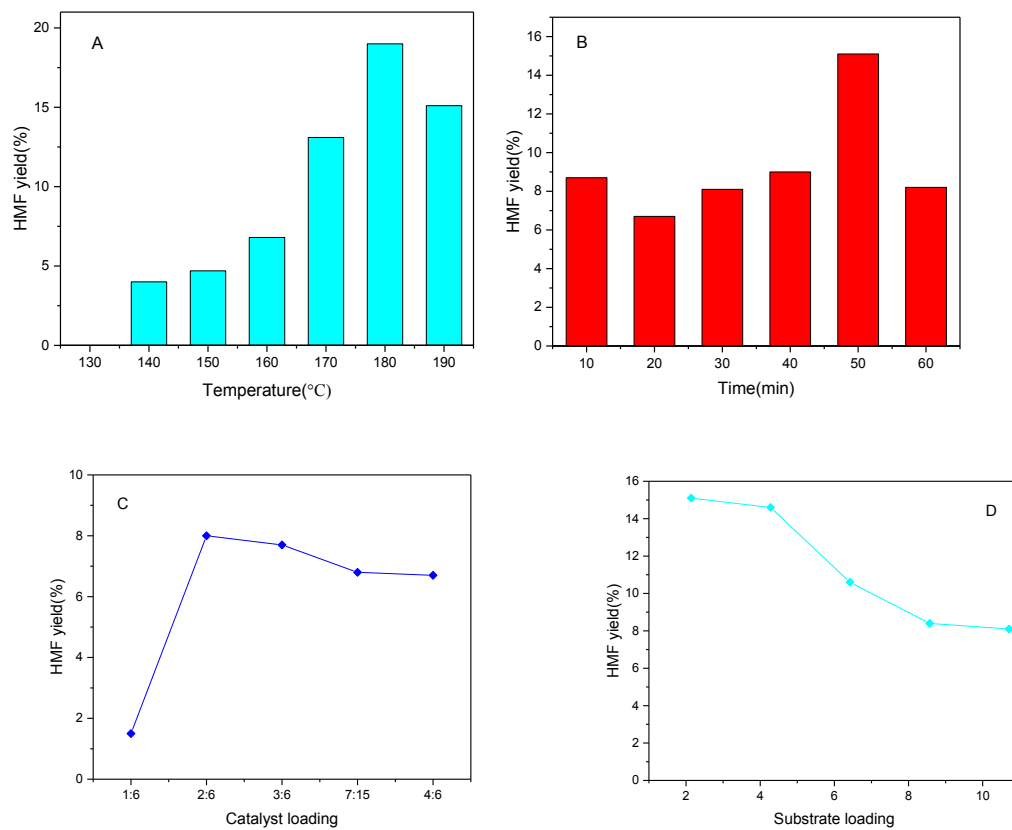


Fig. S4. Elemental mapping images (C, O, N, S) of SG.



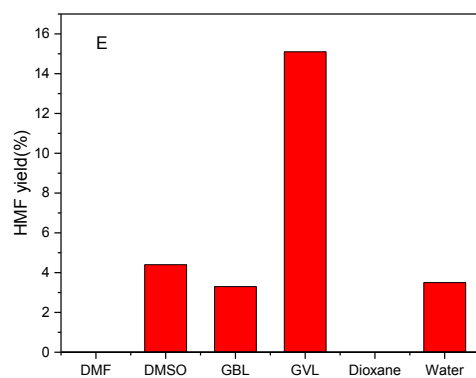


Fig. S5. The effects of temperature (A), time (B), catalyst loading (C), substrate loading (D) and diverse solvents (E) on 5-HMF yield produced from corn stalk.