

Supporting Materials for RSC Advances

Section A (Reproducibility Study Regarding Using Domestic Microwave)

Figure R1 shows the XRD patterns for three different batches of hydrazine hydrate – reduced graphene oxide (HHRGO). It is clear that using a domestic microwave did not affect the reproducibility of the results.

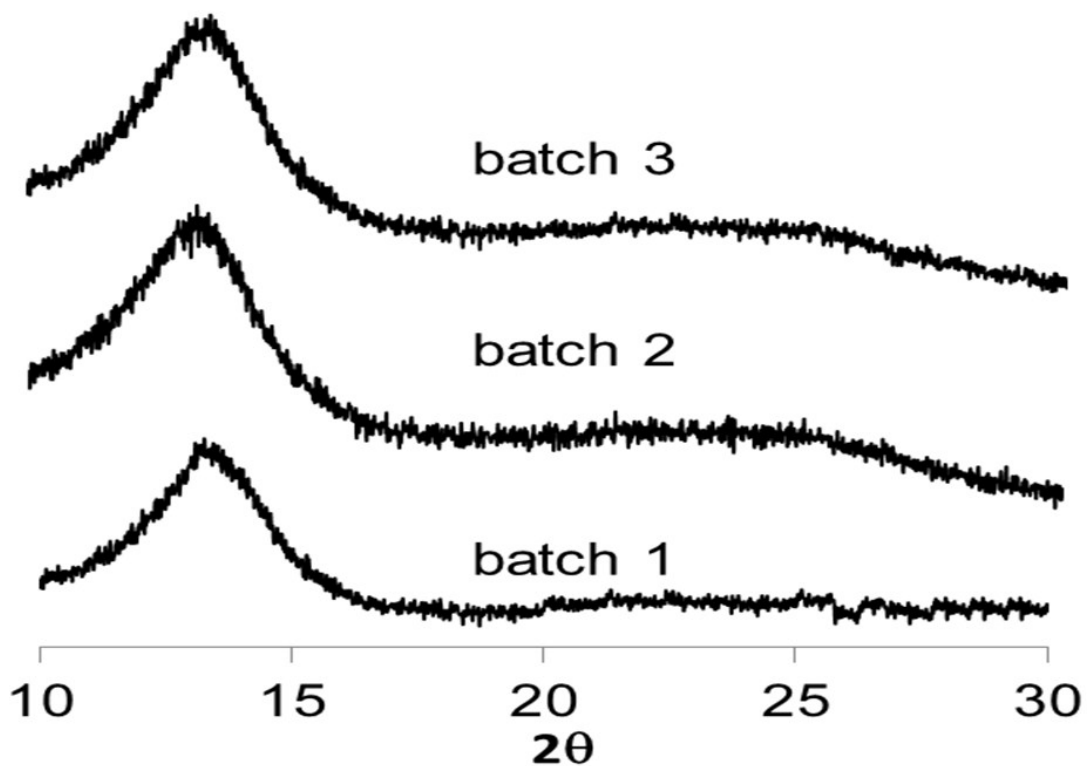


Figure R1. XRD patterns for hydrazine hydrate – reduced GO (HHRGO) using a domestic 1000 W domestic microwave.

In Figure R2, the Raman shift for three different batches of HHRGO. These results also confirm the reproducibility of using the domestic microwave.

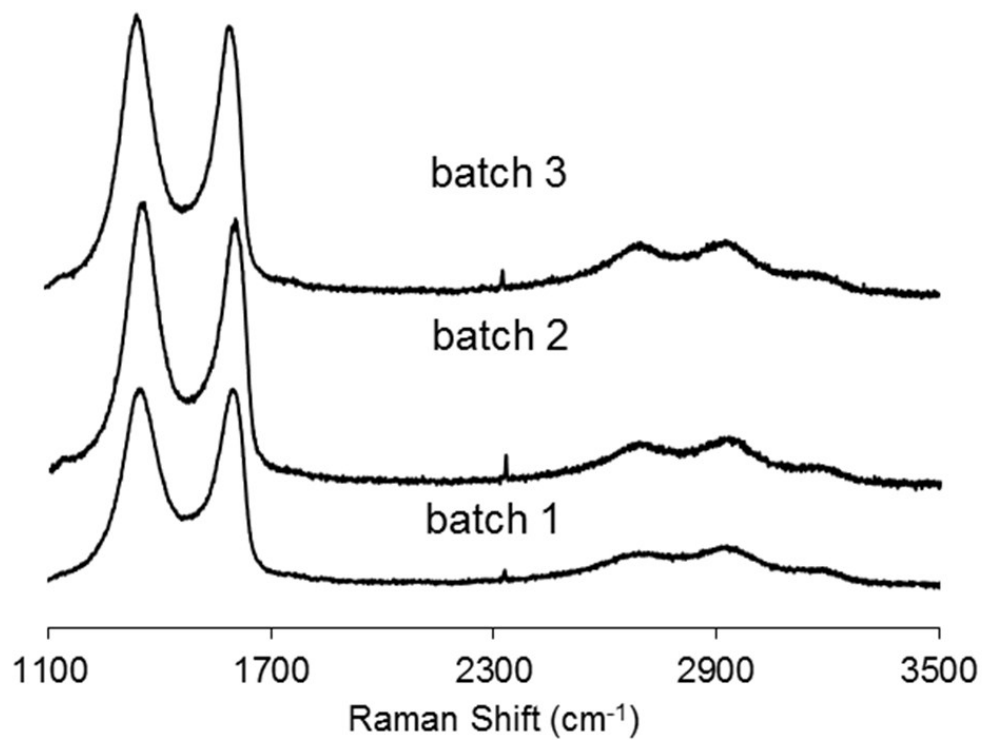


Figure R2. Raman spectra at 532 nm for three different batches of hydrazine hydrate – reduced graphene oxide using a 1000 W domestic microwave.

Section B (Effect of using H₂O₂ with the photocatalysts)

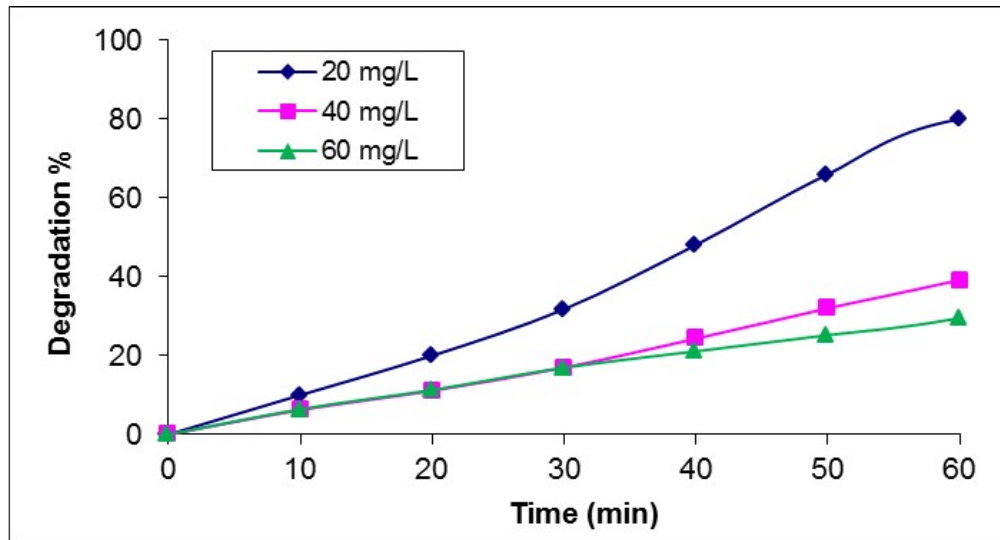


Figure S1. Photocatalytic degradation of different phenol concentrations using 0.1 g TiO₂ in the presence of 70 μ L of H₂O₂ under 300 W UV illumination.

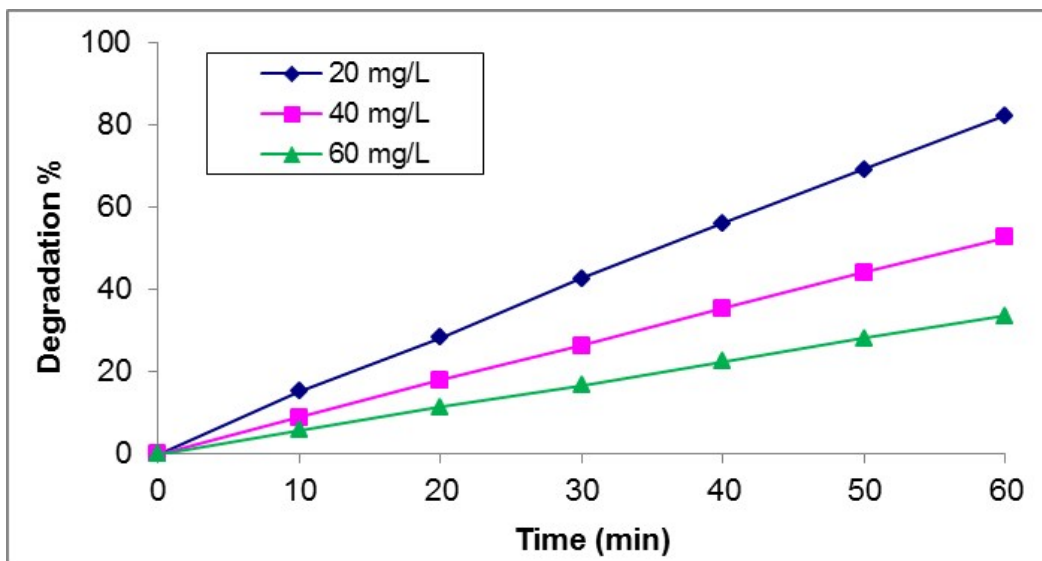


Figure S2. Photocatalytic degradation of different phenol concentrations using 0.1 g RGOTi (hydrothermally reduced graphene oxide/TiO₂ composite) in the presence of 70 μ L of H₂O₂ under 300 W UV illumination.

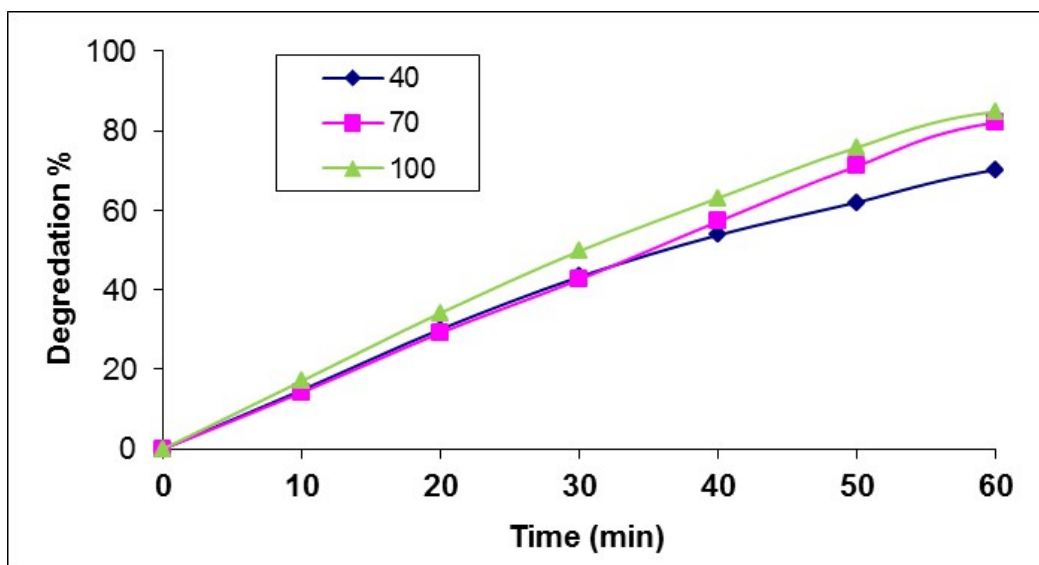


Figure S3. Photocatalytic degradation of 20 mg L⁻¹ phenol with different amounts of H₂O₂ (40, 70, and 100 μL) under 300 W UV illumination using 0.1 g RGOTi.

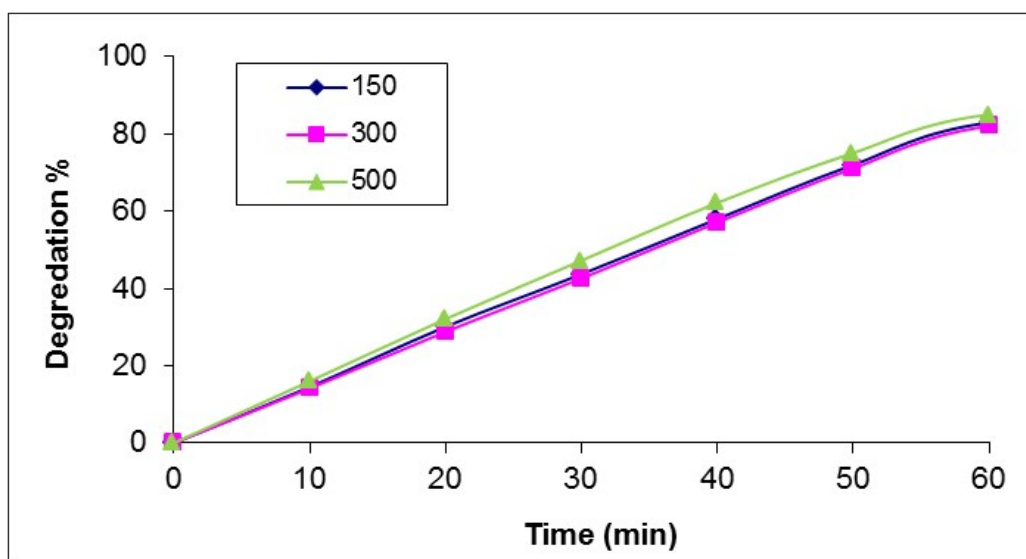


Figure S4. Photocatalytic degradation of 20 mg L⁻¹ phenol with 70 μL of H₂O₂ under different powers of high pressure mercury: 150, 300, 500 W using 0.1 g RGOTi.