

Significant Enhancement in The Visible Light Photocatalytic Properties of BiFeO₃-Graphene Nanohybrids

Zhuoxuan Li¹, Yang Shen^{1,*}, Cheng Yang², Yuechuan Lei¹, Yuhan Guan¹, Yuanhua Lin¹,

Dabo Liu² and Ce-Wen, Nan^{1,*}

¹ Department of Materials Science and Engineering, State Key Lab of New Ceramics
and Fine Processing, Tsinghua University, Beijing, China, 100084

² Beijing Institute of Aeronautic Materials, Beijing, China, 100095

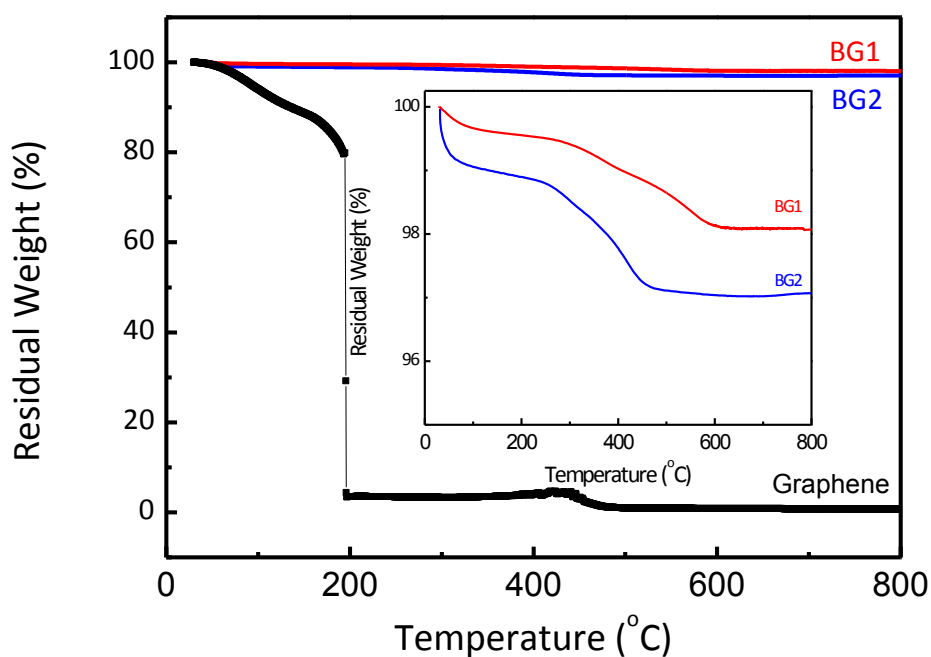


Figure. 1S Thermal Gravimetric Analysis (TGA) diagrams for graphene, BG1 and BG2. The weight loss of BG1 and BG2 is better distinguished in the inset.

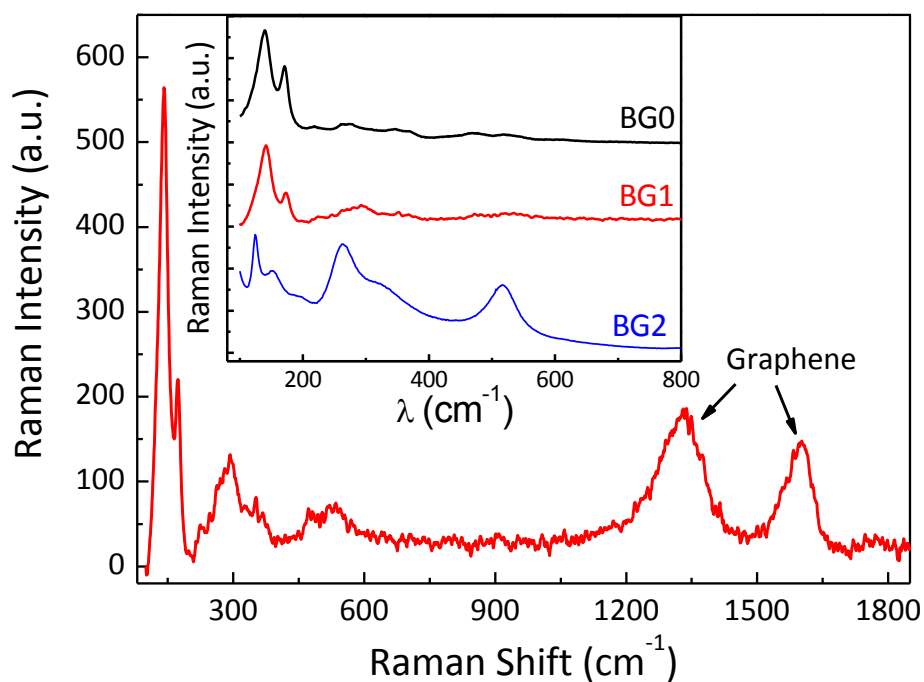


Figure 2S Raman spectra of BiFeO₃-graphene nanohybrids. The bands from graphene are indicated by arrows. Superimposed in the inset are the comparisons between three samples for the Raman peaks of perovskite BiFeO₃ phase.

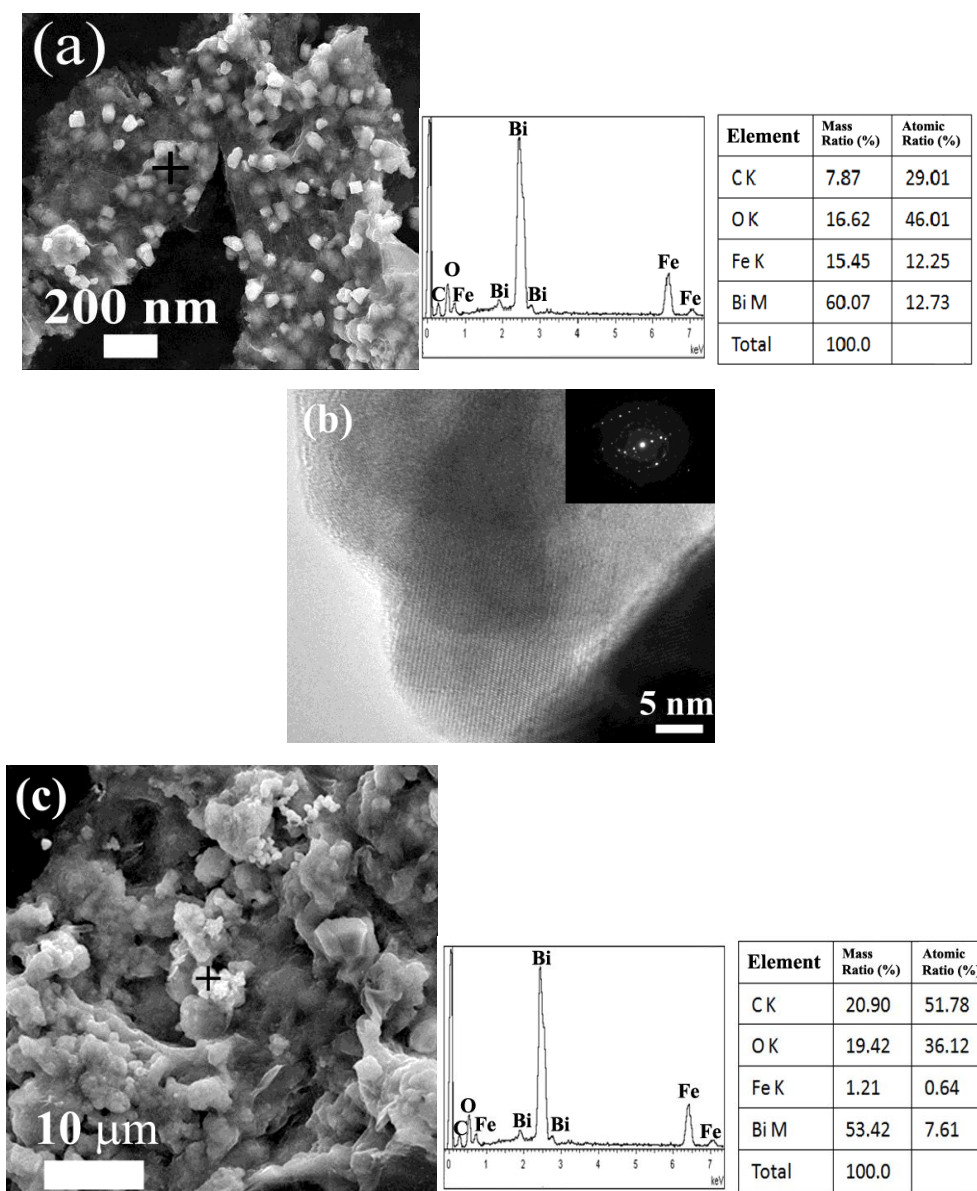


Figure 3S SEM images and results of EDAX analysis for (a) BiFeO₃-graphene nanohybrids and (c) BG2. The sampling spots are indicated by cross in black. (b)HRTEM images and SAED patterns for BiFeO₃ nanocrystallines shown in (a).

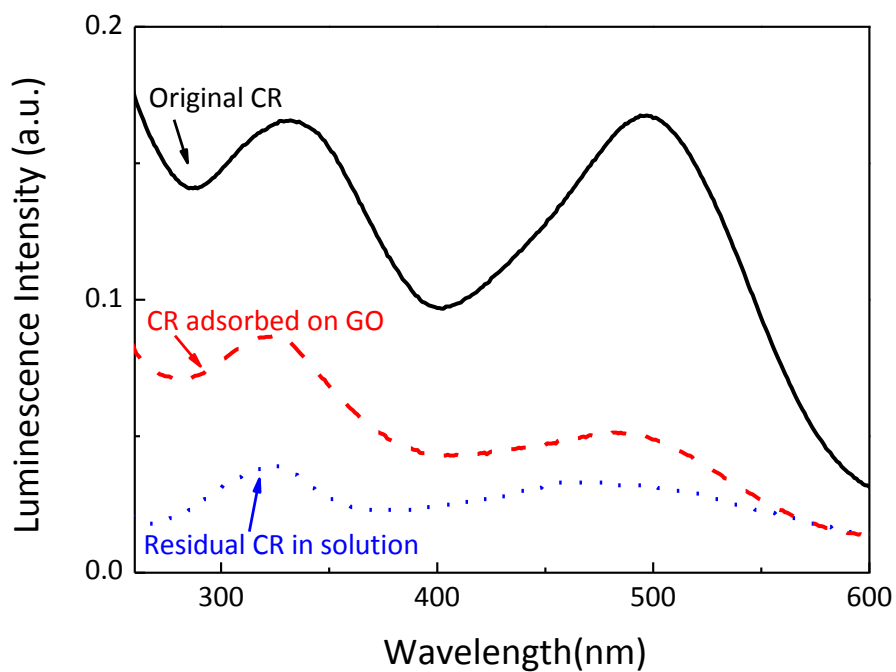


Figure 4S Photoluminescence spectra for CR in the original solution prior to the photocatalytic experiments (solid line in black), for the residual CR in the solution after being photocatalyzed for 120 mins (dot line in blue), and for CR adsorbed on the BiFeO₃-graphene nanohybrids recovered after the photocatalytic experiments (dash line in red).