

# Microwave-Assisted Synthesis of rGO-ZnO/CuO Nanocomposites for Photocatalytic Degradation of Organic Pollutants

Aklilu Guale Bekru <sup>1</sup>, Lemma Teshome Tufa <sup>1,2</sup>, Osman Ahmed Zelekew <sup>3,\*</sup>, Juyong Gwak <sup>4</sup>, Jaebeom Lee <sup>2,4</sup> and Fedlu Kedir Sabir <sup>1,\*</sup>

<sup>1</sup> Department of Applied Chemistry, Adama Science and Technology University, Adama P.O. Box 1888, Ethiopia; a.guale@yahoo.com (A.G.B.); lemmat2003@yahoo.com (L.T.T.)

<sup>2</sup> Research Institute of Materials Chemistry, Chungnam National University, Daejeon 34134, Republic of Korea; nanoleelab@cnu.ac.kr

<sup>3</sup> Department of Materials Science and Engineering, Adama Science and Technology University, Adama P.O. Box 1888, Ethiopia

<sup>4</sup> Department of Chemistry, Chemistry Engineering and Applied Chemistry, Chungnam National University, Daejeon 34134, Republic of Korea; wndyd1111@naver.com

\* Correspondence: osman.ahmed@astu.edu.et (O.A.Z.); fedluked130@gmail.com (F.K.S.)

The FTIR spectra of GO and rGO samples were given in Figure S1A. The spectrum of GO displayed characteristic peaks at about 3400, 1732, and 1622  $\text{cm}^{-1}$  corresponding to the stretching vibrations of O-H, C=O, and C=C functional groups, respectively [1]. The broad band that appeared around 3400  $\text{cm}^{-1}$  is attributed to the overlapping bands from the O-H stretching vibration of alcohol, carboxylic acid, and adsorbed water molecules [2]. In addition, the band at 1048  $\text{cm}^{-1}$  can be assigned to the bending vibrations of the hydroxyl functional groups. In the case of rGO, distinctive vibration modes were observed at 3429, 2922, 2852, and 1636  $\text{cm}^{-1}$  belonging to vibrations of O-H stretching mode arising from the adsorbed water molecules or alcohol functional groups, CH<sub>2</sub> asymmetric stretching modes, symmetric CH<sub>2</sub> stretching modes, and aromatic C-C stretching, respectively [1,3,4]. The results of both GO and rGO obtained are consistent with the literature reports [3]. Hence, the lower intensity of C=O bands and the stronger stretching peaks of C-H in the rGO spectrum confirm the reduction of the oxygen-containing functional groups of GO [1].

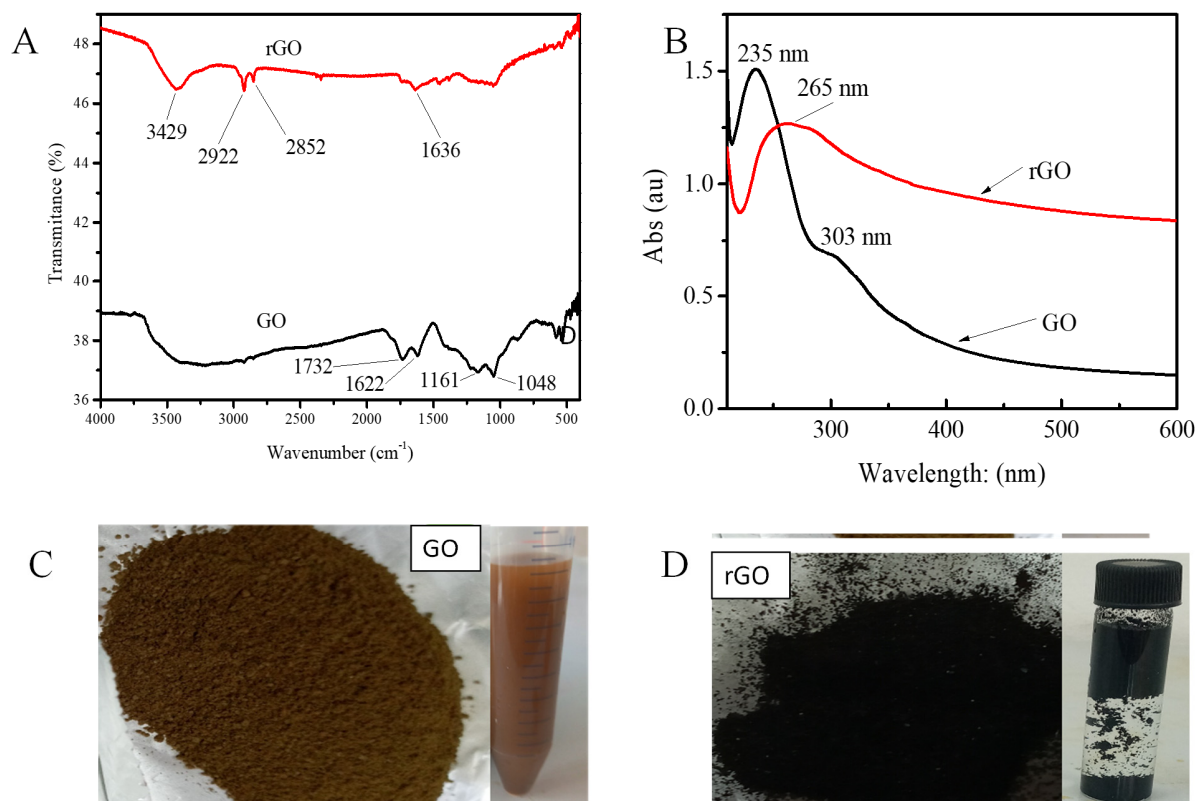


Figure S1. FTIR spectra of GO and rGO samples (A), UV-Visible absorbance spectrum of GO and rGO suspensions in ethanol (B); and Photographs of powder and aqueous suspension (before drying) of GO (C) and rGO (D);

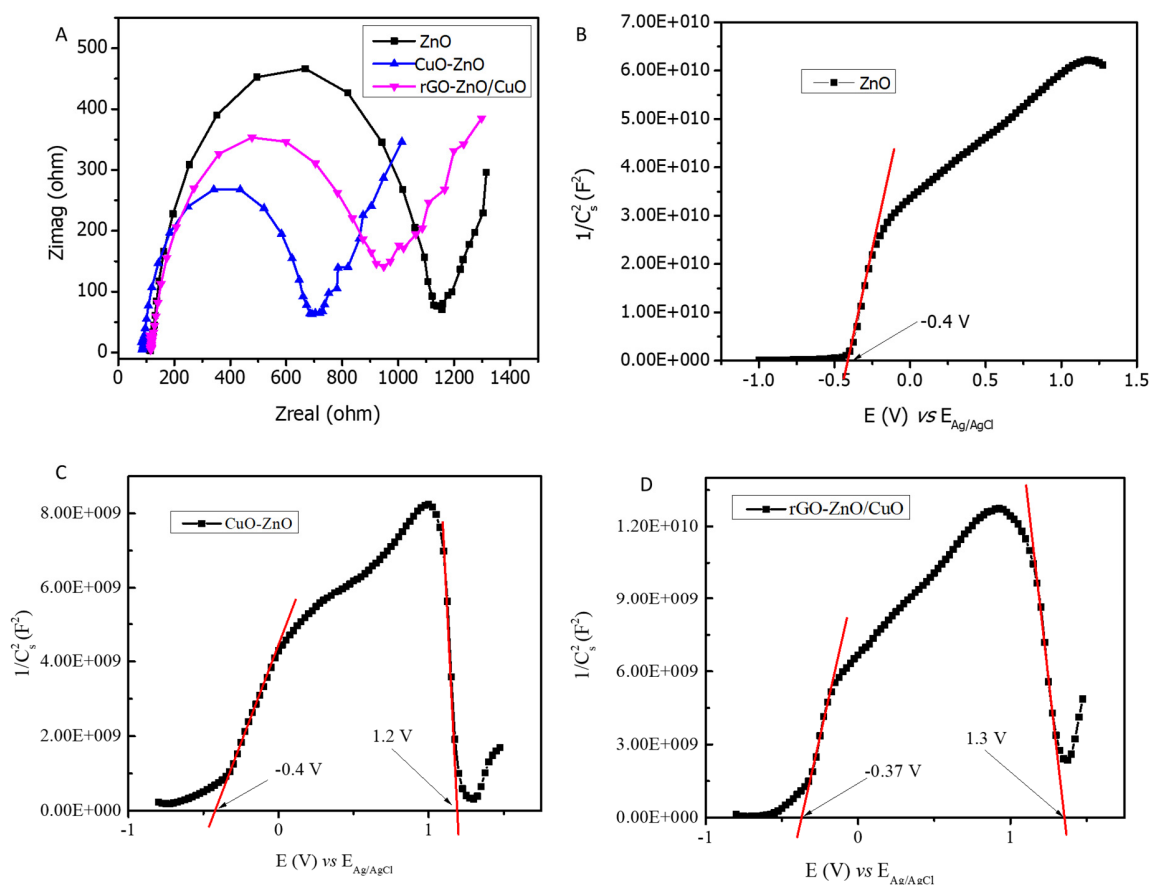


Figure S2. (A) EIS Nyquist plots of rGO-ZnO/CuO NCs, CuO-ZnO NCs, and ZnO NPs; Mott-Schottky plots of (B) ZnO NRs and (C) CuO-ZnO NCs and (D) rGO-ZnO/CuO NCs vs Ag/AgCl.

## References

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