

†Electronic Supplementary Information

Effect of H₂SO₄/H₂O₂ Pre-treatment on Electrochemical Properties of Exfoliated Graphite Prepared by Electro-exfoliation

Oktaviardi Bityasmawan Abdillah,^a Octia Floweri,^b Tirta Rona Mayangsari,^c Sigit Puji Santosa,^d Takashi Ogi,^e and Ferry Iskandar^{a,b,d*}

^a Department of Physics, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung, Jl. Ganesha 10, Bandung 40132, Indonesia

^b Research Center for Nanosciences and Nanotechnology (RCNN), Institut Teknologi Bandung, Jl. Ganesha 10 Bandung 40132, Indonesia

^c Department of Chemistry, Universitas Pertamina, Jl. Teuku Nyak Arief, Simprug, Jakarta 12220, Indonesia

^d National Center for Sustainable Transportation Technology (NCSTT), Institut Teknologi Bandung, Jl. Ganesha 10 Bandung 40132, Indonesia

^e Chemical Engineering Program, Graduate School of Advanced Science and Engineering, Hiroshima University, 1-4-1 Kagamiyama, Hiroshima 739-8527, Japan

*email address: ferry@fi.itb.ac.id

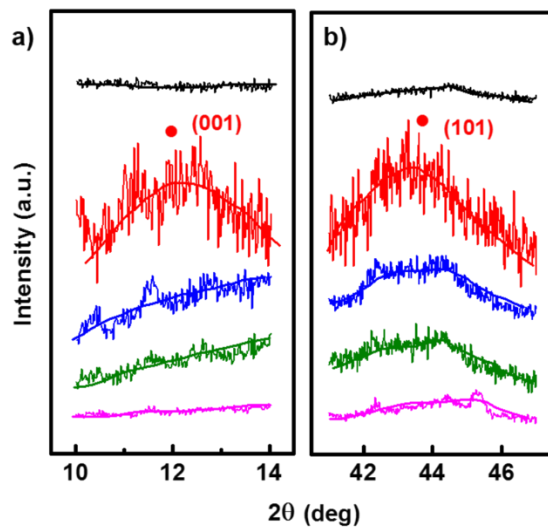


Fig. S1. Enlarged X-Ray Diffraction (XRD) pattern of graphite sheet precursor (p-GS) (black) and exfoliated graphite (EG) obtained after pre-treatment in $\text{H}_2\text{SO}_4/\text{H}_2\text{O}_2$ with various volume fractions (EG 100:0 (red), EG 95:5 (blue), EG 93:7 (green), and EG 91:9 (pink)) along 2θ of (a) $10\text{-}14^\circ$ and (b) $41\text{-}47^\circ$.

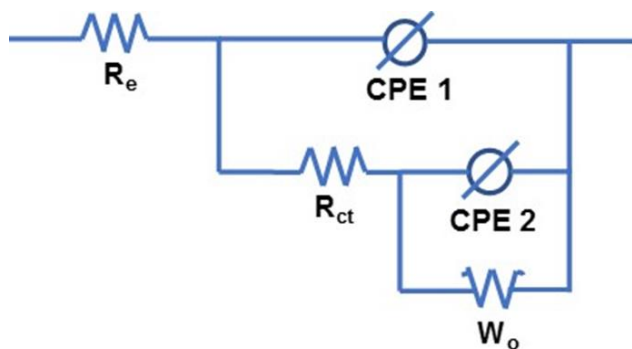


Fig. S2. Equivalent circuit used to fit the Nyquist plots from Electrochemical Impedance Spectroscopy (EIS) measurement.

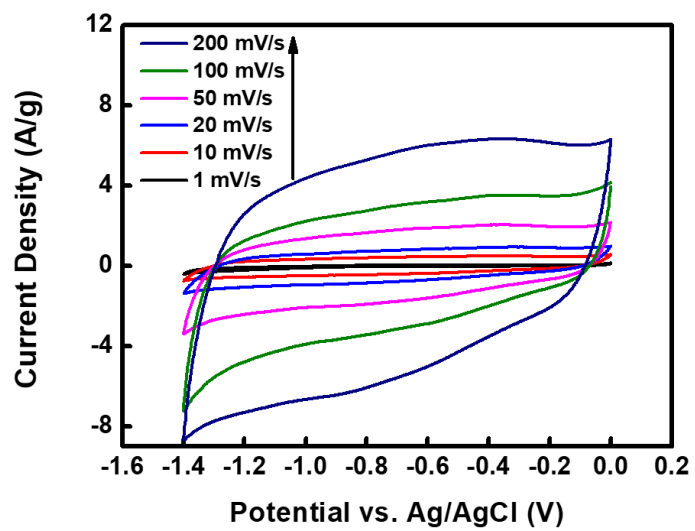


Fig. S3. Cyclic Voltammetry (CV) curves of EG 95:5 measured at various scan rate (1-200 mV/s) with potential window of 1.4 V.