

Electronic Supplementary Information

Effect of alkaline electrolytes on the charge storage capacity and morphology of porous layered double cobalt hydroxide-coated graphene supercapacitor electrodes

Montakan Suksomboon,^a Patarachai Srimuk,^a Atiweena Krittayavathananon,^a Santamon Luanwuthi,^a and Montree Sawangphruk^{*ab}

^aNational Center of Excellence for Petroleum, Petrochemicals and Advance Materials, Department of Chemical Engineering, Faculty of Engineering, Kasetsart University, Bangkok 10900, Thailand

^bCenter for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University, Bangkok 10900, Thailand

Corresponding author. Tel: 66(0)2-942-8555. Fax: 66(0)2-561-4621. E-mail address: fengmrs@ku.ac.th (M. Sawangphruk).

1. Results

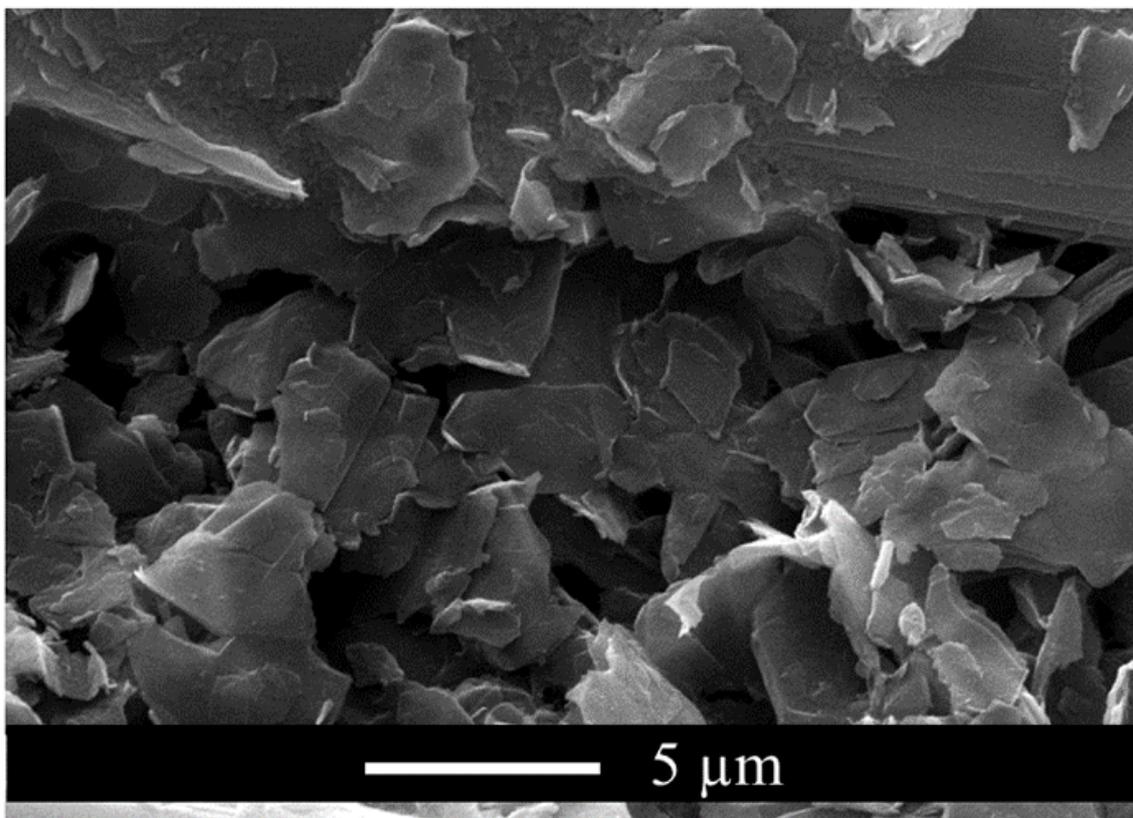


Fig. S1. A SEM image of rGO sheets coated on carbon fiber paper.

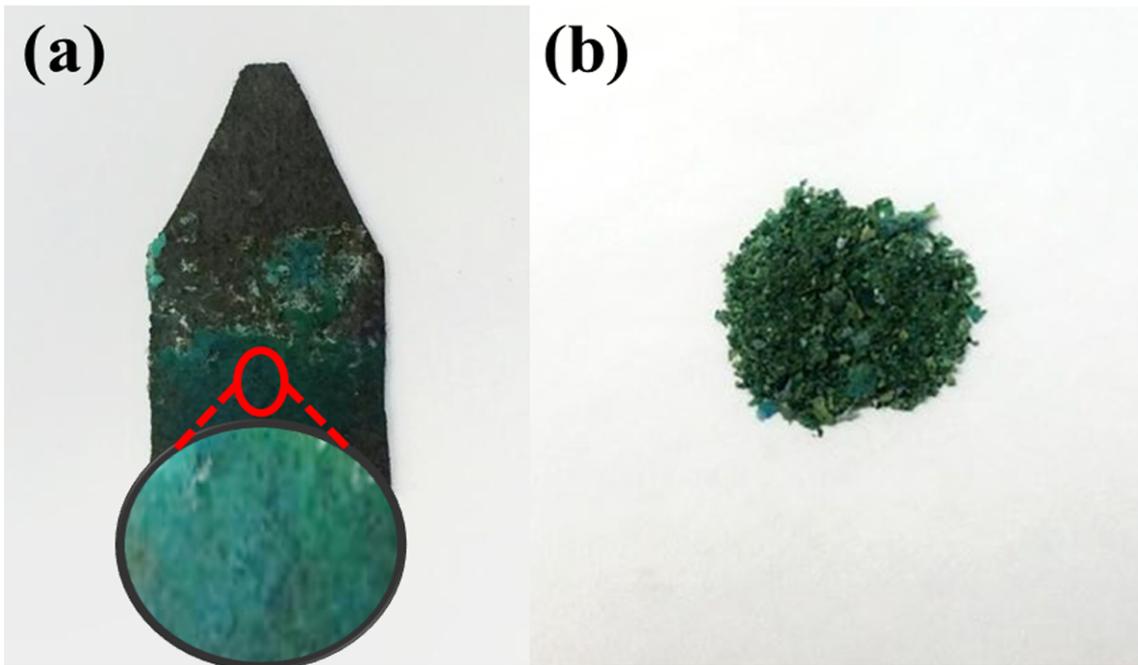


Fig. S2. Photographs of (a) as-electrodeposited and (b) as-scraped α -Co(OH)₂.

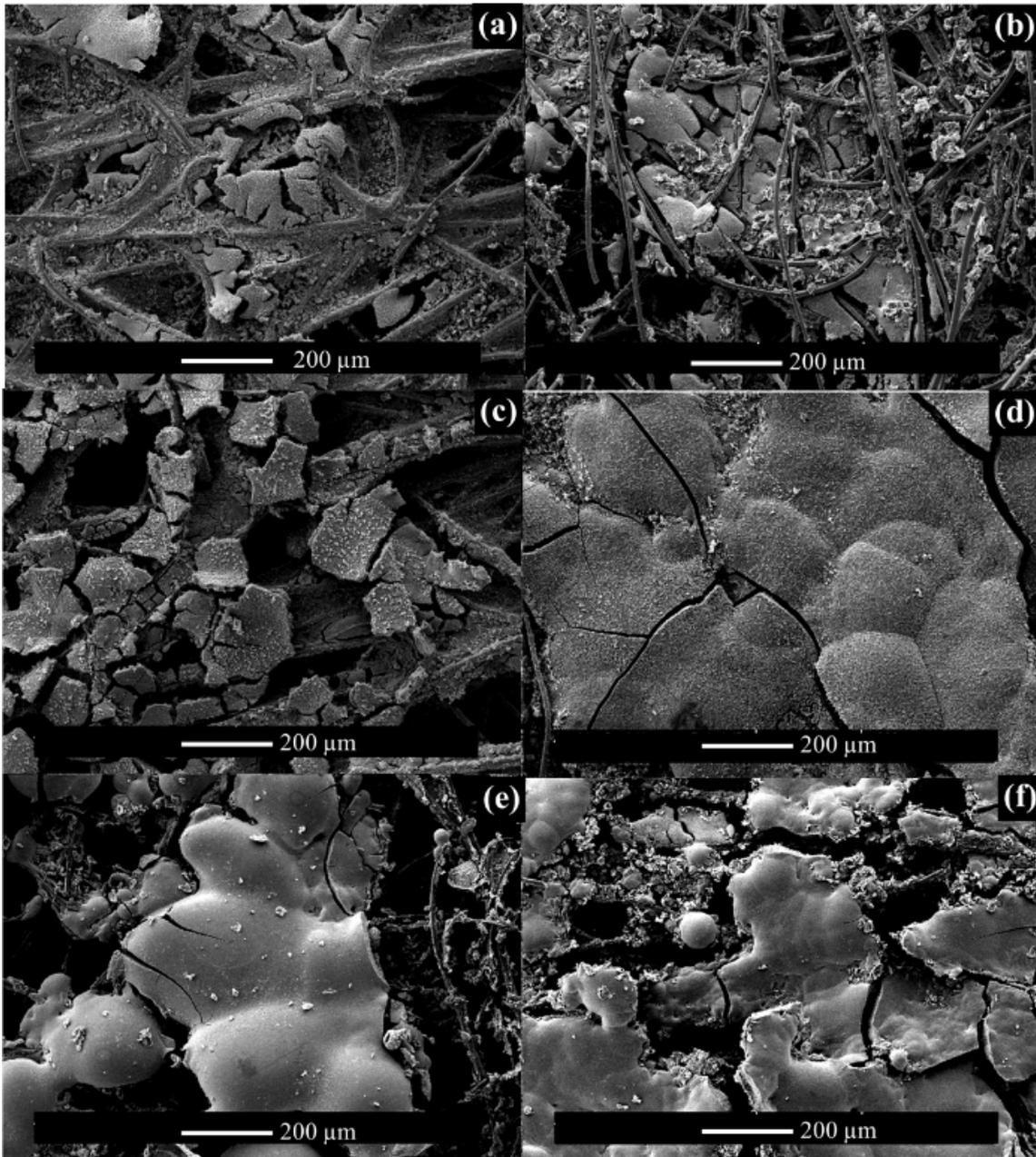


Fig. S3. Low-magnification SEM images of as-electrodeposited α -Co(OH)₂ on rGO/CFP electrodes using a chronoamperometry at -0.5 V vs. Ag/AgCl for (a) 1 min, (b) 2 min, (c) 5 min, (d) 10 min, (e) 20 min, and (f) 40 min.

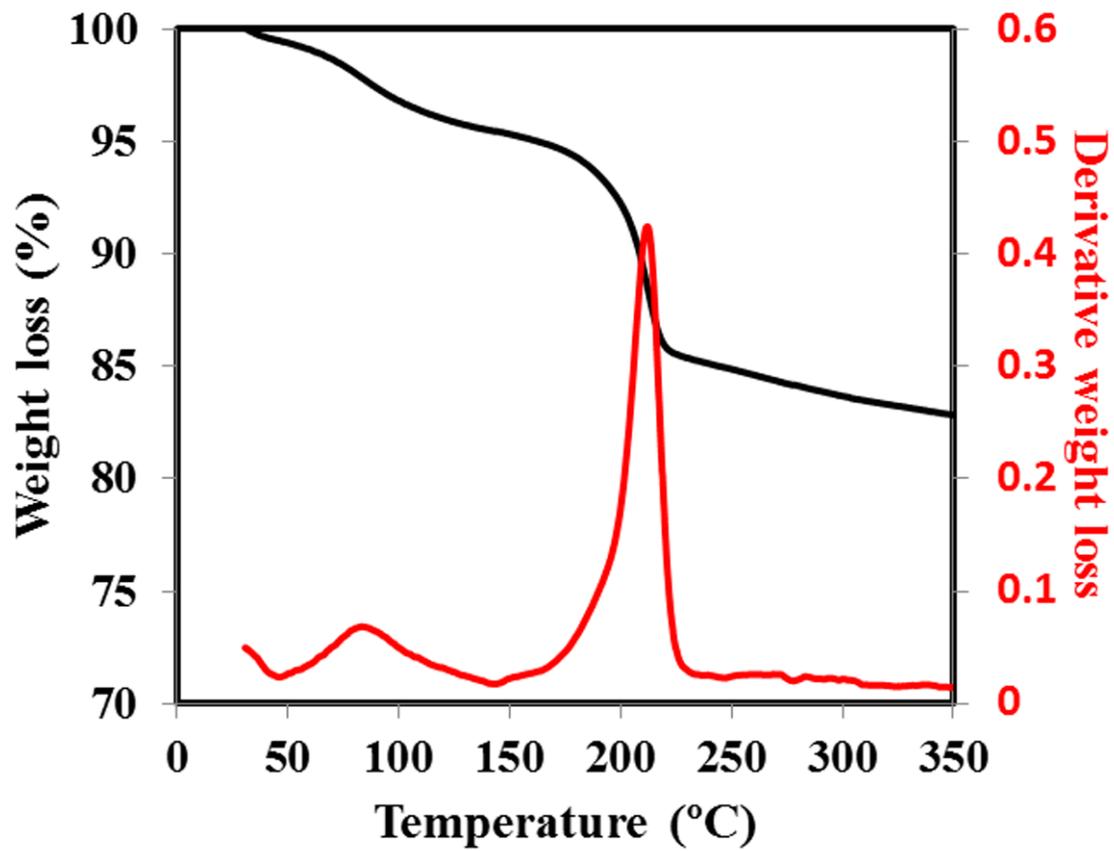


Fig. S4. TGA and its derivative pattern of the as-scraped α -Co(OH)₂ carried out in the temperature range 30-350 °C in O₂ gas

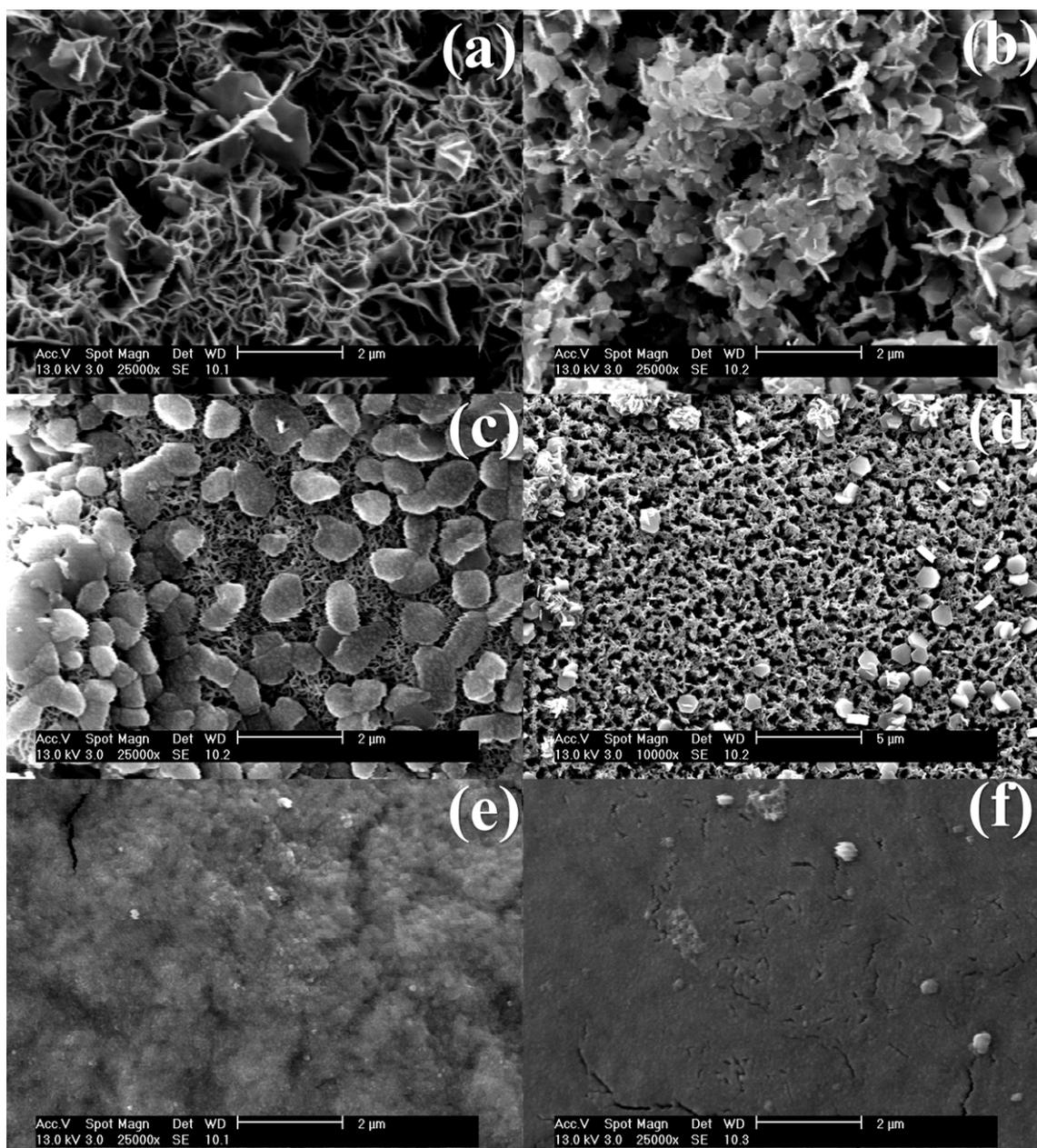


Fig. S5. SEM images of α -Co(OH)₂/rGO/CFP electrodes produced for 10 min after tested in (a) 1 M, (b) 2 M, (c) 3 M, (d) 4 M, (e) 5 M, and (f) 6 M NaOH.

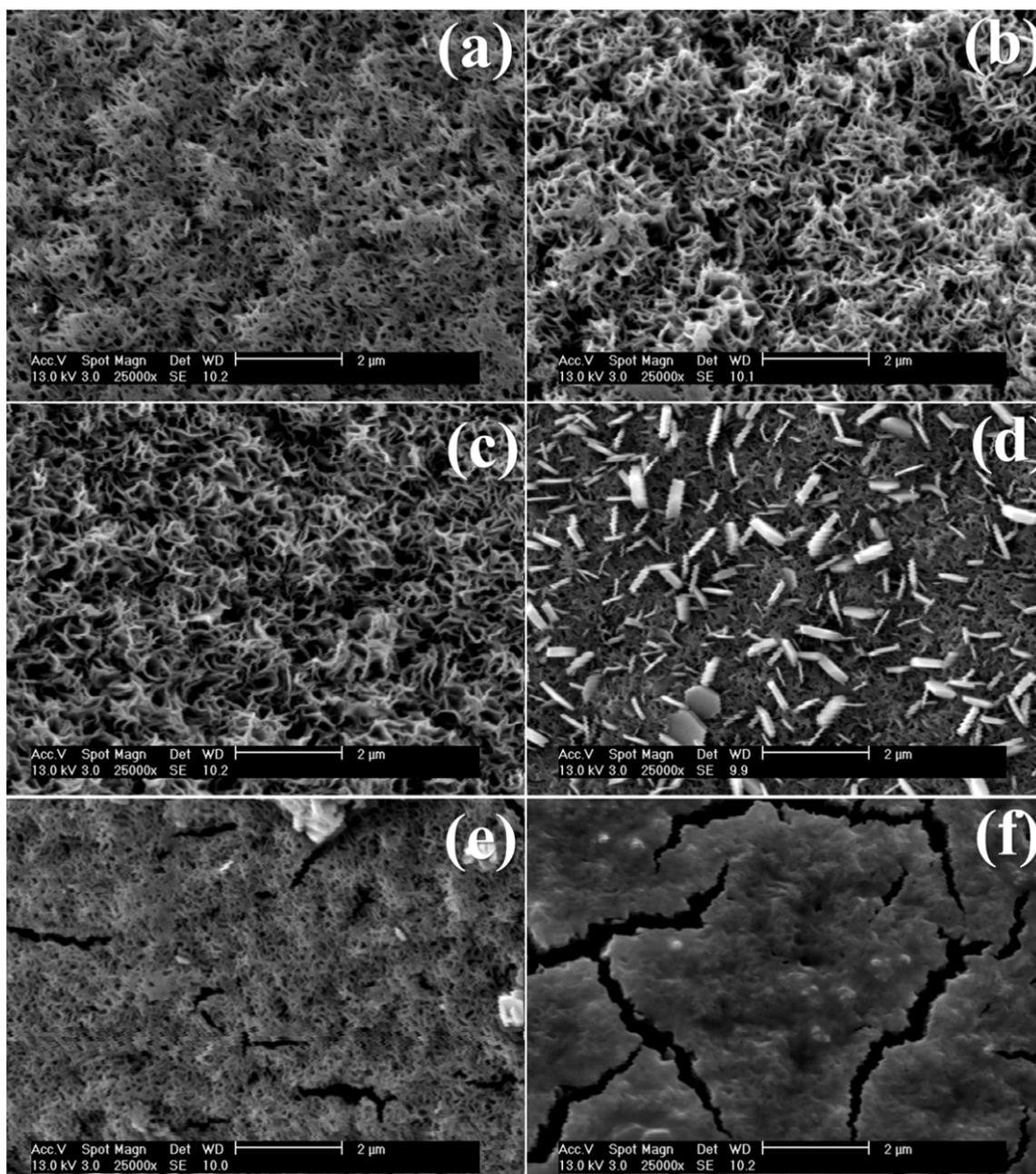


Fig. S6. SEM images of α -Co(OH)₂/rGO/CFP electrodes produced for 10 min after tested in (a) 1 M, (b) 2 M, (c) 3 M, (d) 4 M, (e) 5 M, and (f) 6 M KOH.

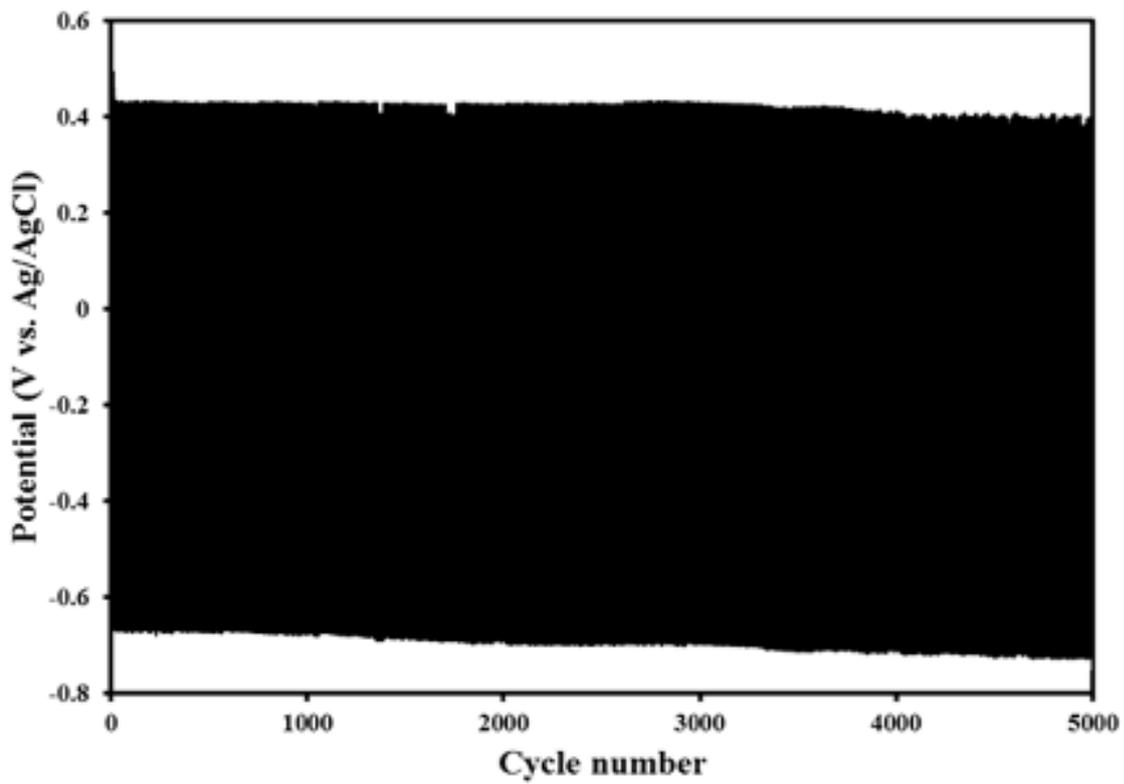


Fig. S7. Galvanostatic charge-discharge curves of 10-min α -Co(OH)₂/rGO/CFP electrode in 1 M NaOH at 1.8 A/g over 5000 cycles.