

# Supporting Information

## Sustainable Electrochemical NO Capture and Storage System Based on the Reversible Fe<sup>2+</sup>/Fe<sup>3+</sup>-EDTA Redox Reaction

Heesung Eum <sup>1,2</sup>, Seokhyeon Cheong <sup>1</sup>, Jiyun Kim <sup>1</sup>, Seo-Jung Han <sup>3,4</sup>, Minserk Cheong <sup>4</sup>,  
Hyunjoo Lee <sup>1,5</sup>, Hae-Seok Lee <sup>2</sup> and Dong Ki Lee <sup>1,2,5,\*</sup>

<sup>1</sup> Clean Energy Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea; 120302@kist.re.kr (H.E.); hindungiga@kist.re.kr (S.C.); kimjiyun@kist.re.kr (J.K.); hjlee@kist.re.kr (H.L.)

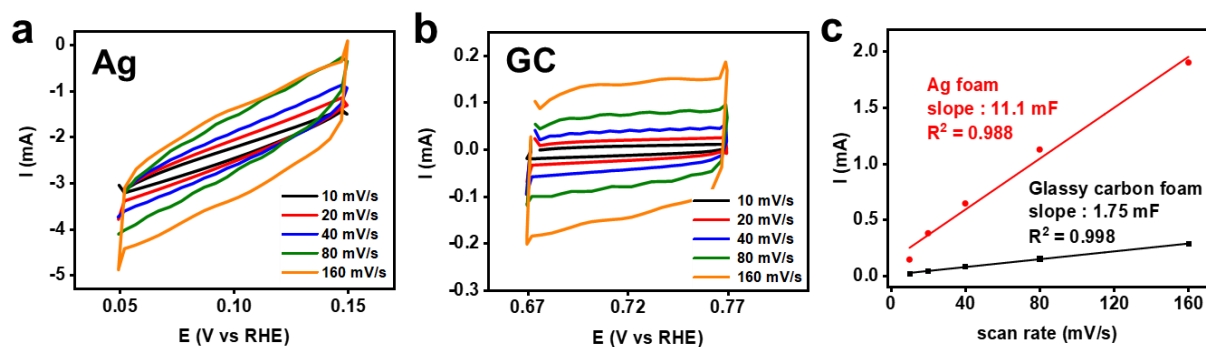
<sup>2</sup> Graduate School of Energy and Environment, Korea University, Seoul 02841, Korea; lhseok@korea.ac.kr.

<sup>3</sup> Chemical Kinomics Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea; sjhan@kist.re.kr.

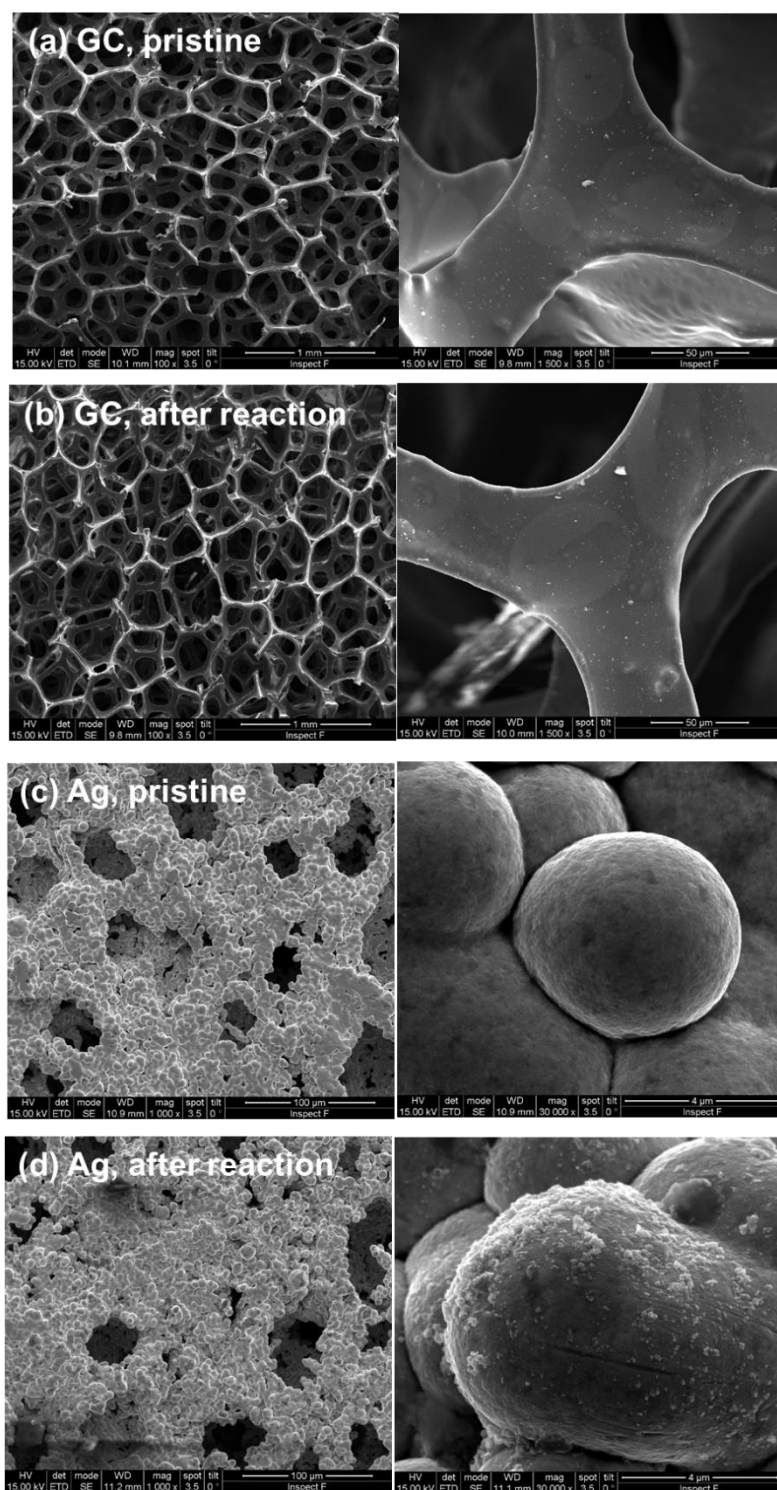
<sup>4</sup> Division of Bio-Medical Science & Technology, KIST School, University of Science and Technology, Seoul, 02792, Korea; mcheong@khu.ac.kr.

<sup>5</sup> Division of Energy and Environmental Technology, KIST School, Korea University of Science and Technology, Seoul 02792, Korea

\* Correspondence: dnklee@kist.re.kr



**Figure S1.** Electrochemical active surface area (ECSA) analysis foam electrodes. Cyclic voltammetry curves of (a) Ag and (b) GC foam electrodes at varied scan rate from 10 to 160  $\text{mV s}^{-1}$  in a 0.1 M  $\text{Na}_2\text{SO}_4$  solution (pH 2.7). The geometric surface area of Ag and GC foam was  $18 \text{ cm}^2_{\text{geo}}$ . The ECSA was determined by dividing (c) double layer capacitance by intrinsic areal capacitance of Ag ( $33 \text{ uF/cm}^2$ ) and GC ( $30 \text{ uF/cm}^2$ ). The ECSA of Ag and GC foam was  $370 \text{ cm}^2$  and  $53 \text{ cm}^2$ , respectively



**Figure S2.** SEM images of (a, b) GC and (c, d) Ag foam electrodes before and after reaction of full-cell system (Figure 4).

**Table S1.** Elemental analysis of GC and AG foam electrode before and after reaction of full-cell (Figure 4)

	<b>C (at%)</b>	<b>Ag (at%)</b>	<b>Fe (at%)</b>	<b>O (at%)</b>	<b>N (at%)</b>
<b>GC, pristine</b>	89.0	0.0	0.0	4.4	6.7
<b>GC, after reaction</b>	88.8	0.0	0.0	4.6	6.6
<b>Ag, pristine</b>	21.2	52.7	0.0	11.8	14.3
<b>Ag, after reaction</b>	20.1	50.2	0.0	17.1	12.6

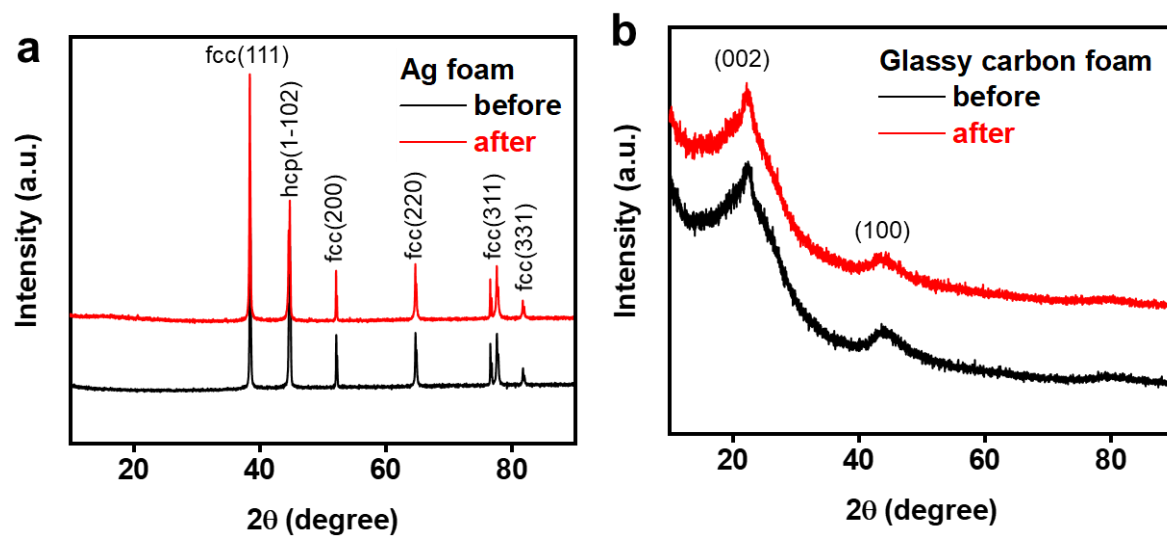


Figure S3. XRD patterns of (a) Ag and (b) GC foam electrodes before and after reaction of full-cell (Figure 4).