Electronic Supplementary Information

A bi-functional metal-free catalyst composed of dual-doped graphene and mesoporous carbon for rechargeable lithium-oxygen batteries

Jae-Hong Kim, a,# Aravindaraj G. Kannan, a,# Hyun-Sik Woo, a Dae-Gun Jin, b Wonkeun Kim, b Kyounghan Ryu, b and Dong-Won Kim* a

a Department of Chemical Engineering, Hanyang University, Seoul 133-791, Republic of Korea

b Automotive Research and Development Division, Hyundai Motor Group, Gyeonggi-do 437-815, Republic of Korea

*E-mail: dongwonkim@hanyang.ac.kr

[ ][ ] J.-H. Kim and A.G. Kannan contributed equally to this work.
Fig. S1. SEM images of GC showing a similar morphology to that of NSGC. Hence, the effect of morphology on electrocatalytic performance could be eliminated.
Fig. S2. (a) Nitrogen adsorption/desorption isotherm, and (b) pore size distribution of GC. GC sample shows BET surface area of 1658 m$^2$ g$^{-1}$, which is similar to the NSGC sample and thus the effect of porous architecture on their electrochemical performance could be eliminated.