

## Electronic Supplementary Information

### **Effects of sulfur and nitrogen dual-doped Fe-N-S electrocatalyst for oxygen reduction in alkaline media**

Hsin-Chih Huang,<sup>a</sup> Yu-Chuan Lin, <sup>a</sup> Sun-Tang Chang,<sup>b</sup> Chia-Chi Liu,<sup>a</sup> Kai-Chin

Wang,<sup>a</sup> Huan-Ping Jhong,<sup>a</sup> Jyh-Fu Lee,<sup>b</sup> and Chen-Hao Wang<sup>\*a</sup>

*<sup>a</sup>. Department of Materials Science and Engineering, National Taiwan University of  
Science and Technology, Taipei 10607, Taiwan.*

*<sup>b</sup>. National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan*

*\*Corresponding author, E-mail: [chhwang@mail.ntust.edu.tw](mailto:chhwang@mail.ntust.edu.tw)*

*Tel: +886-2-2730-3715; Fax: +886-2-2737-6544*

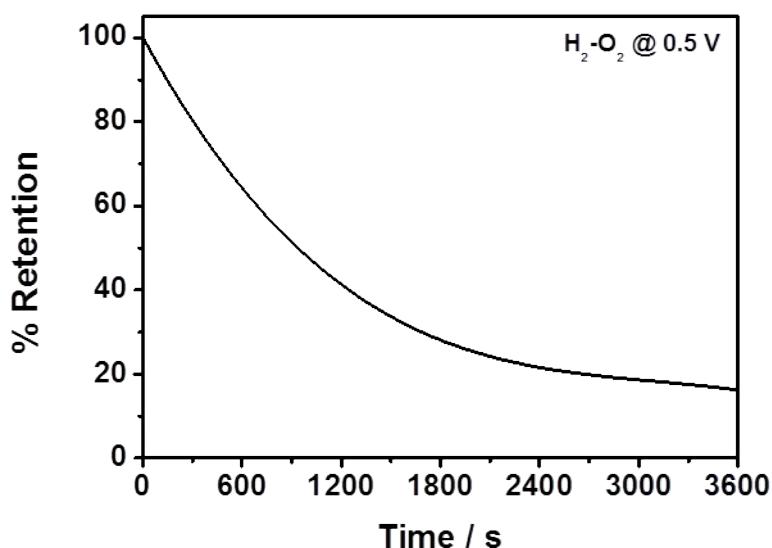


Fig. S1 The retention of Fe-M-LA/C-700 kept by constant potential of 0.5 V in H<sub>2</sub>-O<sub>2</sub> AEMFC durability test.

**Table S1** The elemental content for Fe-M-LA/C-700 from XPS fitting results.

Catalyst	Fe 2p atomic%	N 1s atomic%	S 2p atomic%	C 1s atomic%
<b>Fe-M-LA/C-700</b>	0.87	6.01	3.46	89.66

**Table S2** The BET surface area and average pore size of Fe-M-LA/C-700, Fe-M/C-700, and Fe-LA/C-700.

Catalyst	BET surface area / m <sup>2</sup> g <sup>-1</sup>	Average pore size / nm
<b>Fe-M-LA/C-700</b>	199.7	7.4
<b>Fe-M/C-700</b>	155.2	7.5
<b>Fe-LA/C-700</b>	113.7	9.4

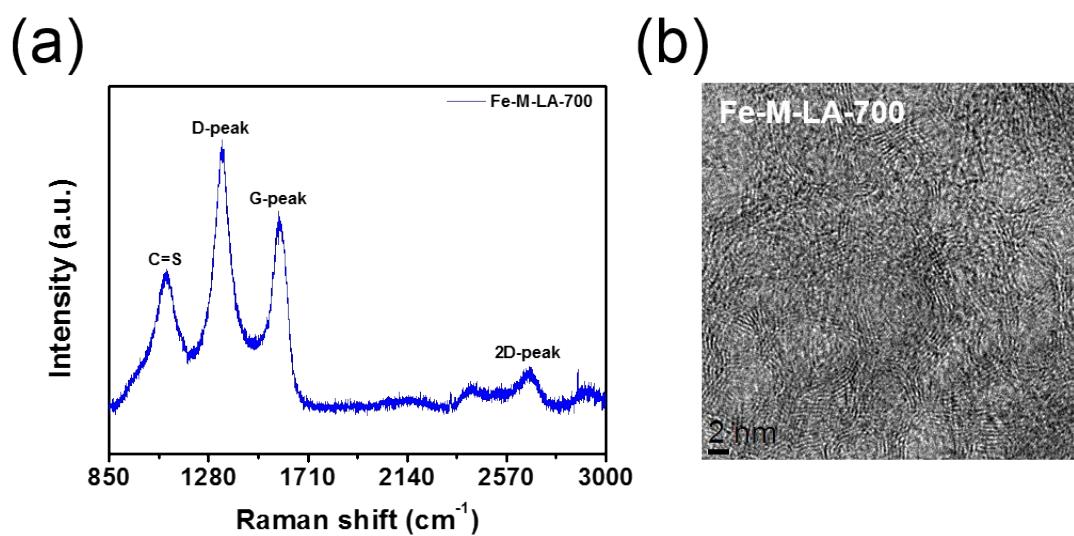


Fig. S2 (a) Raman spectrum and (b) TEM image of Fe-M-LA-700.