Supplementary Information

**Efficient in-situ Generation of H₂O₂ by Novel Magnesium-Carbon Nanotubes Composites**

Zhao Yang a, Xiao-bo Gong* a, b, Bingqing Wang a, Dan Yang a, Tao Fu a, Yong Liu* a, b

a College of Chemistry and Material Science, Sichuan Normal University, Chengdu, Sichuan 610066, China

b Key Laboratory of Treatment for Special Wastewater Treatment of Sichuan Province Higher Education System, Chengdu, Sichuan 610066, China

*Corresponding authors:

Jingan Road 5#, Jinjiang District, Chengdu, Sichuan, 610066, China.

Tel: +86-028-84760802

E-mail: gxb@sicnu.edu.cn (X.-b. Gong); 1031248534@qq.com (Y. Liu)
**Fig. S1** EDS spectrum of Mg-CNTs prepared with PVDF.

**Fig. S2** The effect of Mg-CNTs composite on H$_2$O$_2$ decomposition at different temperature.
Fig. S3 (a) Nitrogen adsorption/desorption isotherms and (b) pore distribution of Mg-CNTs after in-situ generation of H$_2$O$_2$. 