Supporting Information

A carbon fiber based three-phase heterostructure composite CF/$Co_{0.2}Fe_{2.8}O_4$/PANI as an efficient electromagnetic wave absorber in K_u band

Jiyong Fang, Zheng Chen, Wei Wei, Yunxi Li, Tao Liu, Zhi Liu, Xigui Yue*, and Zhenhua Jiang

Alan G. MacDiarmid Institute, College of Chemistry, Jilin University, Changchun 130012, P.R. of China

Corresponding author: Xigui Yue

E-mail addresses: yuexigui@jlu.edu.cn

Tel/Fax: +86 431 85168868

Alan G. MacDiarmid Institute, College of Chemistry, Jilin University, 2699 Qianjin street, Changchun 130012, People's Republic of China

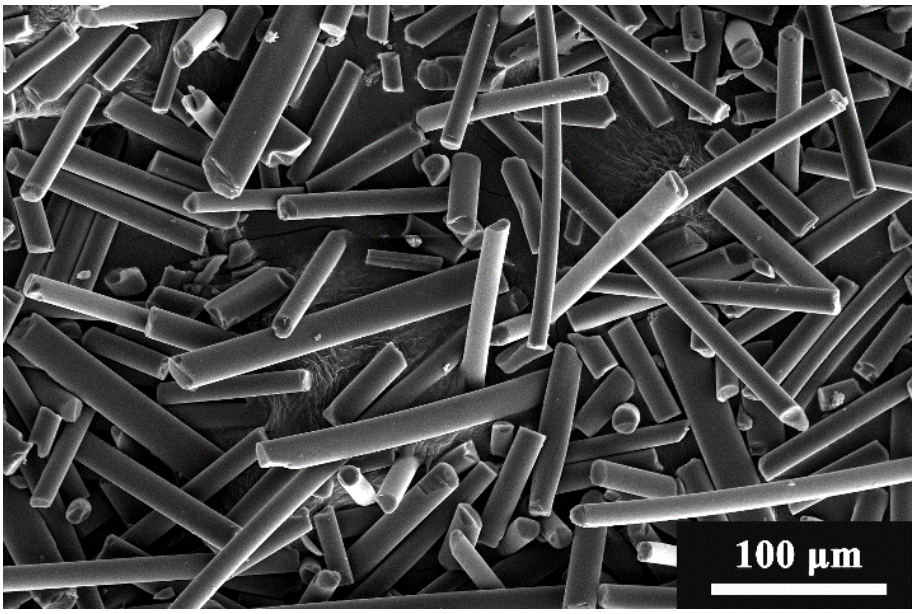

Fig. S1. The SEM image of the received chopped CF with average diameter 14.5 µm, average length 0.15 mm.

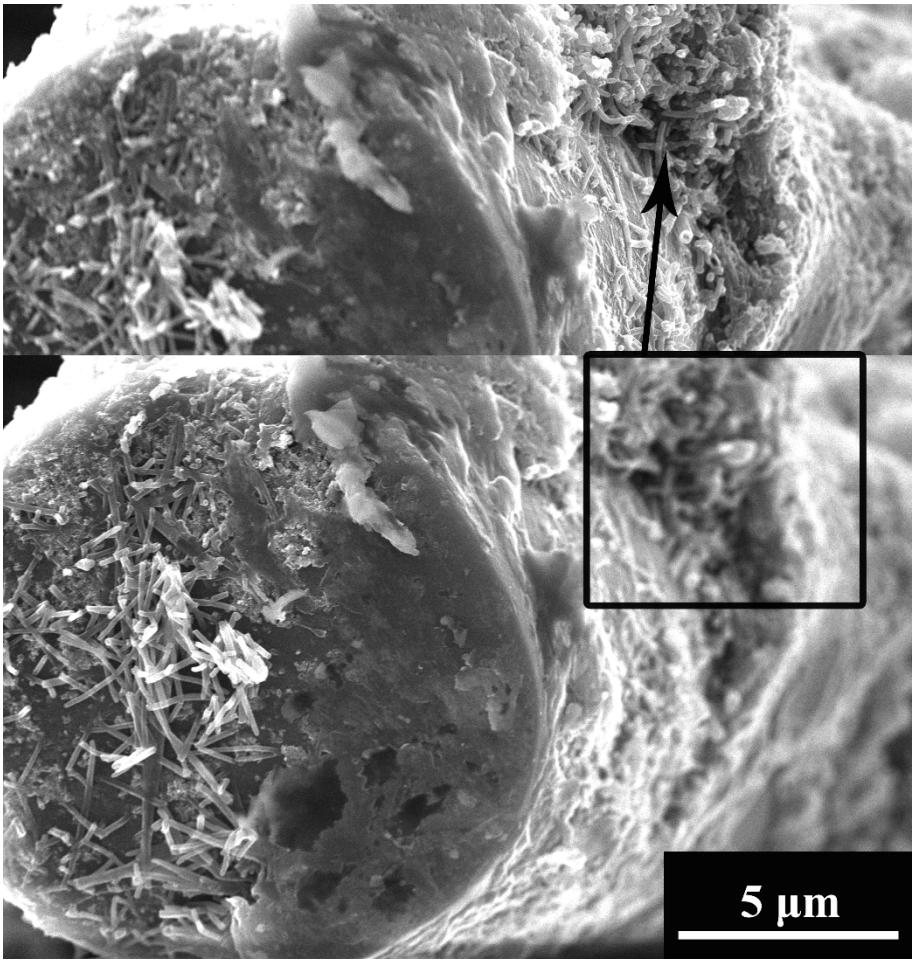

Fig. S2. SEM images of the cross section view for CF/$Co_{0.2}Fe_{2.8}O_4$/PANI.

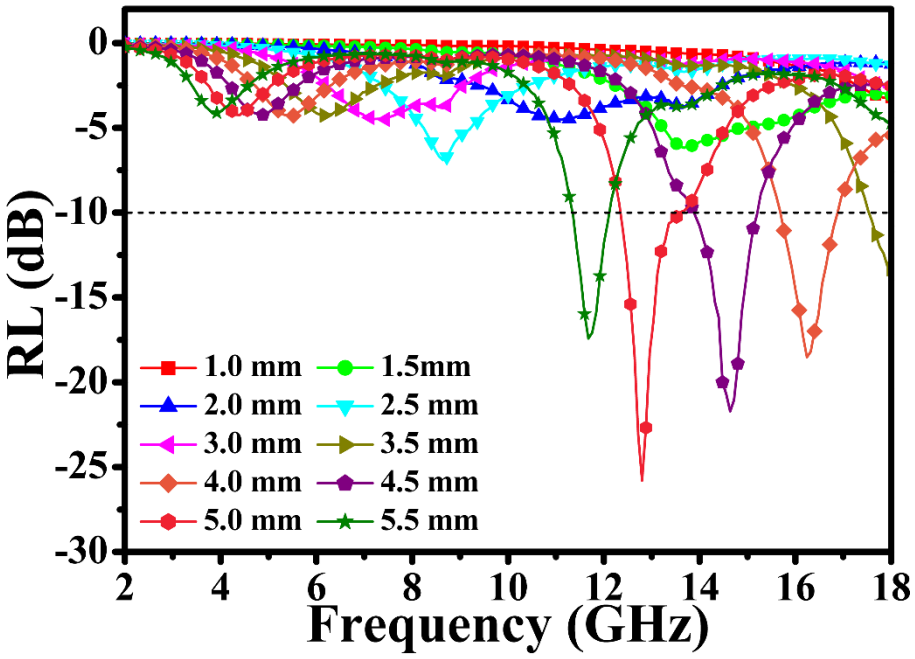

Fig. S3. The relationship between RL and the EM wave frequency for CF/$Co_{0.2}Fe_{2.8}O_4$ in 2-18 GHz range with the thickness from 1.0 to 5.5 mm.

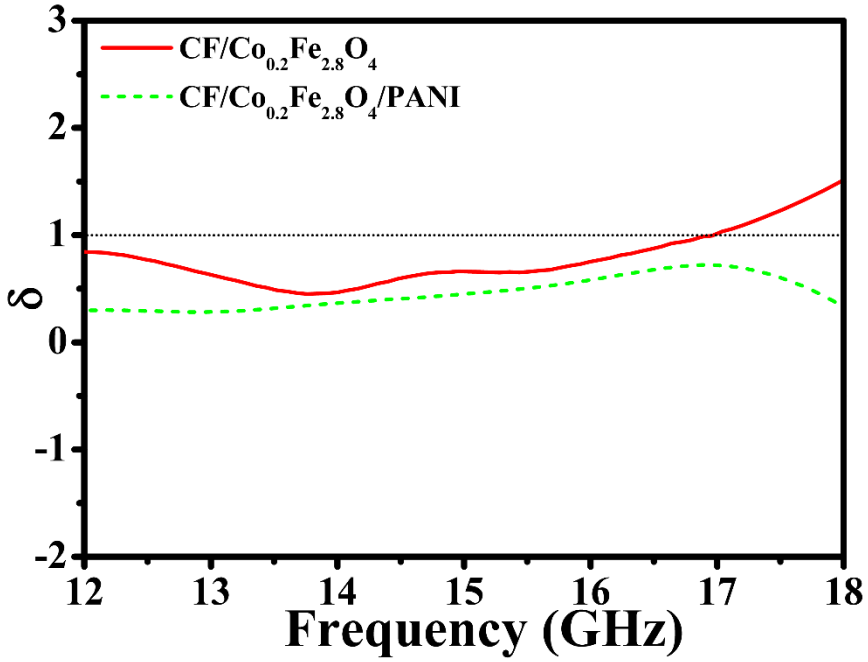

Fig. S4. Coefficient matching factor δ for CF/$Co_{0.2}Fe_{2.8}O_4$ and CF/$Co_{0.2}Fe_{2.8}O_4$/PANI in EM wave K_u band 12-18 GHz.

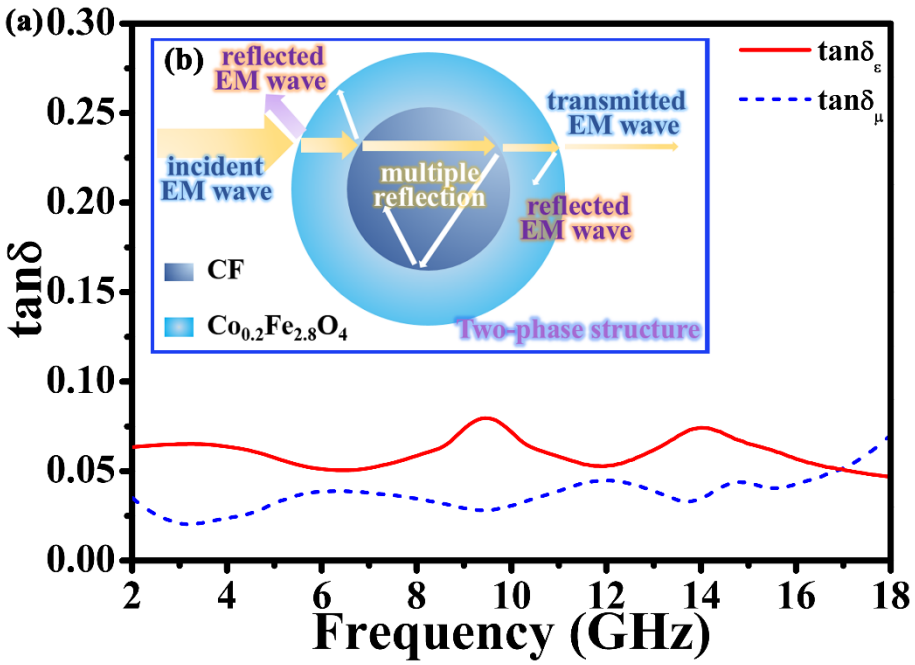

Fig. S5. (a)Frequency dependence of the loss tangent for CF/$Co_{0.2}Fe_{2.8}O_4$ in 2-18 GHz; (b) EM wave spread schemes of CF/$Co_{0.2}Fe_{2.8}O_4$.