Electronic Supplementary Material (ESI) for RSC Advances. This journal is © The Royal Society of Chemistry 2018

**Supplementary information for:** 

Preparation of reduced graphene oxide coated flaky carbonyl iron

composites and their excellent microwave absorption properties

Lihua He<sup>a,b</sup>, Yan Zhao<sup>a,\*</sup>, Liying Xing<sup>b</sup>, Pinggui Liu<sup>b</sup>, Zhiyong Wang<sup>b</sup>, Youwei Zhang<sup>b</sup>, Ying Wang<sup>c</sup>, Yunchen Du<sup>c</sup>

<sup>a</sup> School of Materials Science and Engineering, Beihang University, Beijing 100191, China.

<sup>b</sup> Beijing Institute of Aeronautical Materials, Beijing 100095, China.

<sup>c</sup> MIIT Key Laboratory of Critical Materials Technology for New Energy Conversion and Storage,

School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001,

China

Corresponding author: Yan Zhao. Tel/Fax:+86-010-82317127.

E-mail address: Helihua-xjt@163.com; jennyzhaoyan@buaa.edu.cn

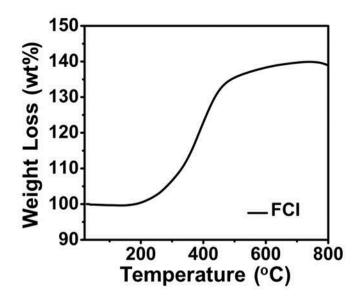


Fig. S1. TG curves of FCI.

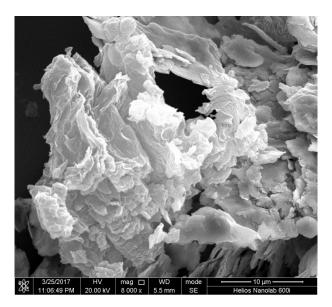
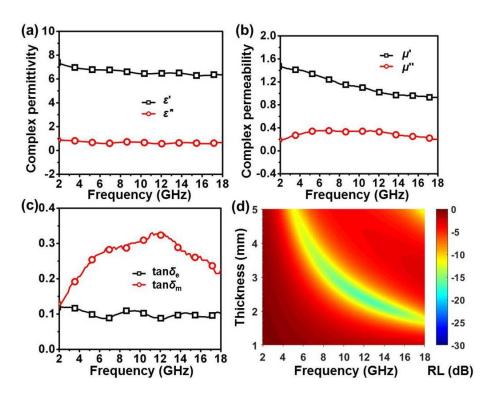
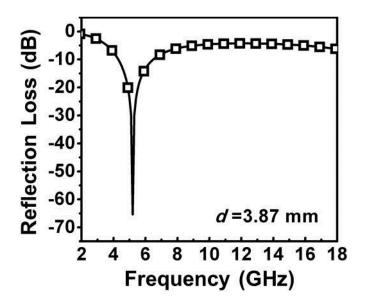


Fig. S2. SEM image of control composite of rGO/FCI.



**Fig. S3.** Complex permittivity (a), complex permeability (b), dielectric loss tangent and magnetic loss tangent (c) and reflection loss of rGO/FCI composite in the frequency range of 2.0-18.0 GHz.



**Fig. S4.** Reflection loss of rGO-coated FCI composite in the frequency range of 2.0-18.0 GHz with an absorber thickness of 3.87 mm.