Supporting Information

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Characterization

The samples were characterized by field-emission scanning electron micro-scope (FESEM, JEOL, JSM-6701F) and transmission electron microscope (TEM, JEOL, JEM-2100F)

SEM analysis

Fig. S1 is the scanning electron micrograph (SEM) of nano SiO_2. It shows nano SiO_2 are consisted of nanoparticles and the particle size is varied from 20 to 40 nm.

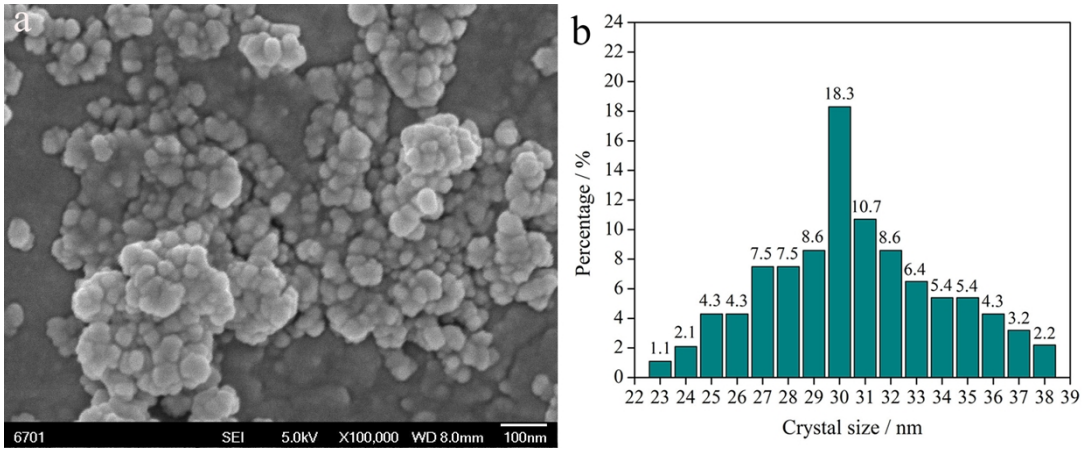

Fig. S1 (a) SEM image of the nano SiO_2, scale bar: 100 nm. (b) Particle size distribution of nano SiO_2 analysed from SEM image.

EDS analysis

As shown in Fig. S2, The energy-dispersive spectroscopy (EDS) measurement confirms that the co-existence of Fe, Si, C and O elements in Fayalite@C nanocomposite and the Fe:Si atomic ratio is 2:1.

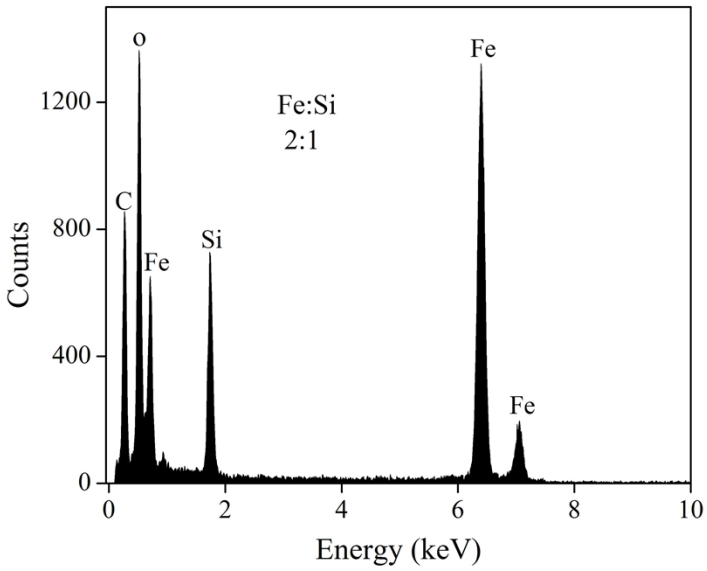

Fig. S2 EDX spectrum of Fayalite@C nanocomposites, in which the Cu signal originated from the Cu grid support for TEM observation.