

Electronic Supplementary Information for

**Facile One-step Preparation of Hierarchical α -Fe₂O₃
Nanostructures with Enhanced Performance in Energy and
Environmentally Related Applications**

Shuting Xie^a, Fei Lu^a, Nan Sun^a, Shaojie Liu^{c*}, Han Jia^{d*} and Liqiang Zheng^{ab*}

*^aKey laboratory of Colloid and Interface Chemistry, Shandong University, Ministry of
Education, Jinan, 250100, China*

*^bNational Engineer Technology Research Center for Colloidal Materials, Shandong
University, Jinan, 250100, China*

*^cCollege of Petroleum Engineering, China University of Petroleum (Huadong),
Qingdao, 266580, China*

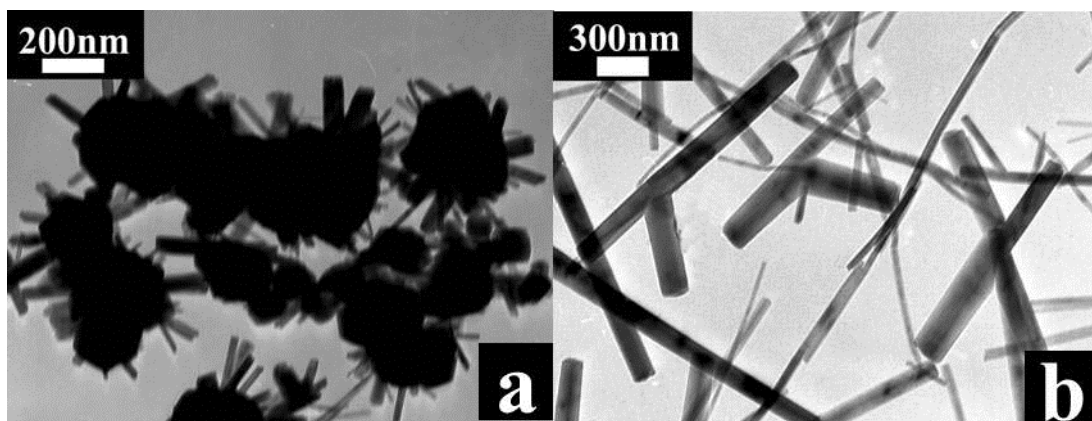


Fig. S1 TEM images of $\alpha\text{-Fe}_2\text{O}_3$ nanostructures obtained in (a) the absence of $\text{C}_{12}\text{mimBr}$, when the concentration of SDS is 12.5 mM, (b) mixed surfactants.

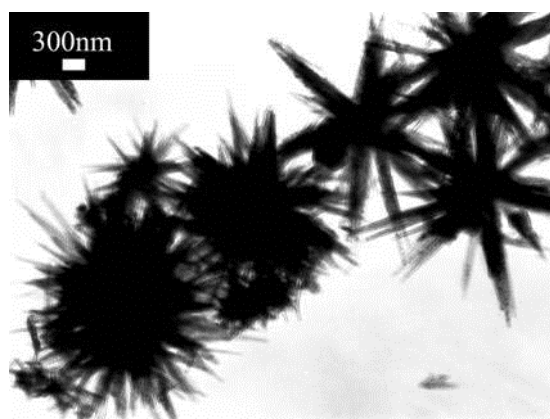


Fig. S2 TEM images of $\alpha\text{-Fe}_2\text{O}_3$ nanostructures obtained in mixed SDS/ $\text{C}_{12}\text{mimBr}$ solution when the molar ratio of SDS to $\text{C}_{12}\text{mimBr}$ is $r = 0.25$.