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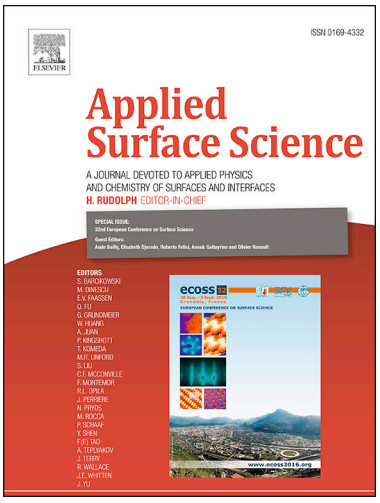

Full Length Article

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Porous coin-like Fe@MoS_2 composite with optimized impedance matching for efficient microwave absorption

Junjie Pan[a], Xin Sun[b], Tao Wang[a], Zetao Zhu[a], Yuping He[a], Wei Xia[a] and Jianping He[a]*

[a] *College of Materials Science and Technology, Jiangsu Key Laboratory of Materials and Technology for Energy Conversion, Nanjing University of Aeronautics and Astronautics, 210016 Nanjing, PR China.*

[b] *Science and Technology on Electromagnetic Scattering Laboratory, 100854 Beijing, P.R. China.*

**Corresponding author. Tel: +86 25 52112906; Fax: +86 25 52112626.*

E-mail address: jianph@nuaa.edu.cn

Abstract Magnetic metallic materials compounded with dielectric loss materials are promising for efficient microwave absorption as a result of the synergistic effect between dielectric loss and magnetic loss, as well as the optimized impedance matching. In this paper, porous coin-like structured Fe@MoS_2 composite has been fabricated via solvothermal method accompanied by subsequent heat treatment under H_2/Ar atmosphere. The structure and morphology of as-prepared Fe@MoS_2 composite indicates that MoS_2 nanosheets with the two-dimensional (2D) structure are well dispersed on the porous coin-like Fe micro-sheets to form a core-shell structure. Particularly, the addition of MoS_2 regulates the permittivity as well as improves the impedance matching of the Fe@MoS_2 composite. The as-prepared composite shows efficient microwave absorption properties with the maximum effective absorption