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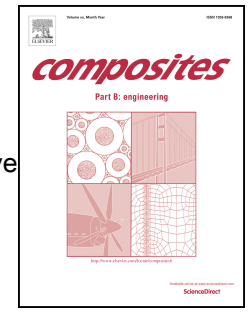

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Composites with Koch Fractal Activated Carbon Fiber Felt Screens for Strong Microwave Absorption

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Abstract: This work presents a strong microwave absorber with Koch fractal activated carbon fiber (ACF) felt screens. The effects of arrangements (spacing d) and structure parameters (iteration number n, initial side-length L) of Koch fractal units on the microwave absorption (MA) properties were investigated. It was observed that the optimal spacing d was obtained at 20 mm, and the reflection loss (RL) decreased in the low frequency-range from 6 to 9 GHz, but increased in the high-frequency range from 16 to 18 GHz apparently with increasing n and L. The strongest MA could reach – 62.8 dB. The relationship between ACF area ratio and RL was described.

Keywords: A. Carbon fiber; A. Layered structures; B. Electrical properties; E. Thermosetting resin; Koch fractal.