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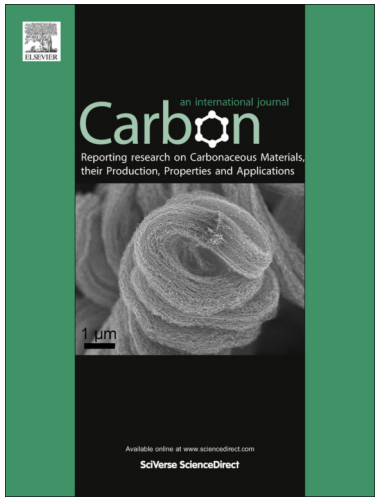

Broadband electromagnetic characterization of carbon foam to metal contact

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Broadband electromagnetic characterization of carbon foam to metal contact

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Abstract

We investigated how the electrical contact of carbon foam with metallic surface can reduce its shielding properties. The bubble structure of the foam does not ensure a good electrical contact with the metal, and it leads to a significant reduction of the shielding effectiveness. A finite element numerical simulation was carried out by adopting a bubble/pore model of the internal microstructure of the foam, recovered by means of scanning electron microscope images. Experimental tests were carried out by inserting carbon foam samples into a coaxial transmission line. Numerical results agree well with experimental result showing significant performance reduction with respect to an ideal electrical contact.

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