

Broadband Radio Frequency [Radar] Absorbing Polymer Composites



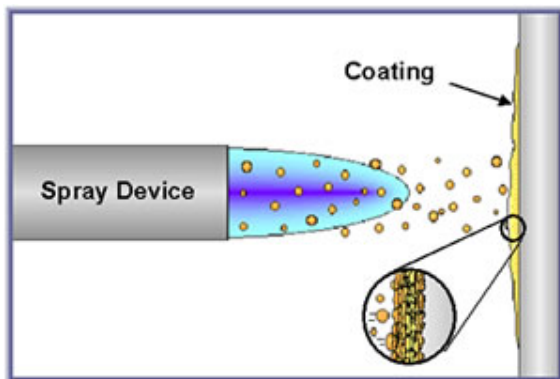
Overview

An opportunity has been identified to meet the needs of the US military with regard to a simple field-applicable, durable and effective RF absorbing material. A concept has been established and demonstrated in the laboratory in which conventional resonance absorbing ferrite materials are dispersed through novel processing in an immiscible polymer blend. The blend is flame sprayable onto a diversity of substrates either in the field or during component manufacture.

Progress

The major obstacle to preparing effective RF absorbing polymer composites is the tendency for the functional RF absorbing particles to degrade the matrix. Relatively coarse particles provide stress concentration centers and finer micron-scale or finer particles tend to interfere with the molecular bonding of the polymer. Our approach focuses on dispersing a broad spectrum of commercially available ferrite particles into a single polymer phase, and then combining that phase with a structural phase through the use of proprietary thermal processing. The result is a flame sprayable composite in which one phase is functional and the other phase is structural.

Tables and Figures



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