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NASA TECH BRIEF

Ames Research Center

Metallized Polymeric Foam Material

It has been found that open-celled polyurethane foams can be coated uniformly with a thin film of metal by the same techniques which are used for coating solid polymeric materials, that is, either by vapor deposition of aluminum or by sensitization of the foam followed by electroless deposition of nickel or copper.

The metallized foam shows improved thermal and electrical conductivity and may be used as a substitute for screens or other open-mesh materials; moreover, it is markedly more flexible and lighter in weight than all-metal materials. The metallized foam can be further processed to increase the thickness of the metal overcoat to impart rigidity or to provide an inert surface with only a modest increase in weight.

The lightweight, flexible, metallized polymeric foam may be used for radiofrequency shields, conductive matrices through which coolant fluids could flow readily, and ventilation and electrostatic filters. For decorative purposes, the metallized surface may be overcoated with a polyurethane to provide durability or resistance to tarnish.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
Reference: TSP 74-10218

Patent status:

NASA has decided not to apply for a patent.

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Category 04