



Cold Spray Chromium Coating For Nuclear Fuel Rods

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The Invention

A method is provided for coating the substrate of a component, such as a zirconium alloy cladding tube, for use in a water cooled nuclear reactor under normal operating conditions and under high temperature oxidation conditions. The method includes heating a pressurized carrier gas to a temperature between 200° C. and 1200° C., adding chromium or chromium-based alloy particles having an average diameter of 20 microns or less to the heated carrier gas, and spraying the carrier gas and particles onto the substrate at a velocity, preferably from 800 to 4000 ft./sec. (about 243.84 to 1219.20 meters/sec.), to form a chromium and/or chromium-based alloy coating on the substrate to a desired thickness.

Additional Information

For More Information About the Inventors

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Tech Fields

- [Materials & Chemicals : Composites](#)

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842