Clean Technology

System And Method For Nuclear Reactor Fuel Having Freeze-Cast Matrix Impregnated With Nucleotide-Rich Material

View U.S. Patent No. 10,315,246 in PDF format.

WARF: P150103US01

Inventors: Todd Allen, Ulrike Wegst, Philipp Hunger

The Invention

A multiphase composite, formed by freeze-casting, lyophilization, and sintering, has sintered particles forming a scaffold having at least one region of aligned porosity; and a second phase formed in pores of the scaffold. In a particular embodiment, the second phase is a nuclear fuel, in another, the first phase is a nuclear fuel, and in others, both phases are nuclear fuels. In some embodiments, the first phase is a ceramic, and in other embodiments a metal such as stainless steel. In other embodiments, the second phase is a metal, and in other embodiments a ceramic. In some embodiments the second phase is positioned in a subset of pores of the scaffold, at least some additional pores being filled with a third phase. In embodiments, the second phase is also sintered.

Tech Fields

- Clean Technology : Energy storage, delivery & resource efficiencies

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