

Abstract of the Disclosure

An electrical-energy-storage unit (EESU) has as a basis material a high-permittivity composition-modified barium titanate ceramic powder. This powder is double coated with the first coating being aluminum oxide and the second coating calcium magnesium aluminosilicate glass. The components of the EESU are manufactured with the use of classical ceramic fabrication techniques which include screen printing alternating multilayers of nickel electrodes and high-permittivity composition-modified barium titanate powder, sintering to a closed-pore porous body, followed by hot-isostatic pressing to a void-free body.

The components are configured into a multilayer array with the use of a solder-bump technique as the enabling technology so as to provide a parallel configuration of components that has the capability to store electrical energy in the range of 52 kW•h. The total weight of an EESU with this range of electrical energy storage is about 336 pounds.