

ADVANCED DIELECTRIC ENERGY STORAGE DEVICE AND METHOD OF FABRICATION

ABSTRACT

5 A Dense Energy Ultra Cell (DEUC), a dielectric energy storage device and methods of
fabrication therefor are provided. A DEUC element is fabricated using print technologies that
deposit dielectric energy storage layers (406) and insulating layers (404) together being
interleaved between electrode layers (403). The dielectric energy storage layers are created from
a proprietary solution to enable printing of dielectric energy storage layers with high permittivity
10 and a high internal resistivity to retain charge. The insulating layers (404) can be applied within
the dielectric energy storage layers (406) bifurcating the dielectric energy storage layers for
increased resistivity. As part of the fabrication process, the material deposition printer can apply
multiple print heads each with different inks and materials (1301, 1302) to form composite
material (1303) in the printed layers.

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Fig. 4