Antiferroelectric Capacitor Ceramic

The (Pb 0.875 La 0.05 Sr 0.05)(Zr 0.695 Ti 0.005 Sn 0.3)O 3 (PLSZTS) antiferroelectric ceramic and corresponding multilayer ceramic capacitor (MLCC) are fabricated. A low hysteresis is obtained via composition optimization. Moreover, multilayer ceramic constructing improves significantly breakdown strength (BDS) due to decreased ...

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Antiferroelectric ceramics, thanks to their remarkable energy storage density W, superior energy storage efficiency ?, and lightning-fast discharging speed, emerge as the quintessential choice for pulse capacitors [[6], [7], [8]].

Antiferroelectric ceramics, via the electric-field-induced antiferroelectric (AFE)-ferroelectric (FE) phase transitions, show great promise for high-energy-density capacitors. Yet, currently, only 70-80% energy release is found during a charge-discharge cycle.

Charge-discharge properties of an La-modified Pb(Zr,Sn,Ti)O3 (PLZST) antiferroelectric (AFE) ceramics capacitor were investigated by directly measuring its hysteresis loops and pulse discharge current-time curves under different electric fields. Large increments in polarization and discharge current were observed when the electric field increases from 3 to ...

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