Effect of the Metallization and Electrode Size on the Electrical Admittance of Piezoelectric Ceramic Parallelepipeds (2013)

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Abstract

This work deals with the determination of the effect of the sizes of electrodes in the electrical admittance spectra of parallelepiped piezoceramics. Recently we have developed a method of characterization using the modeling of the electrical admittance of electroded ceramic cubes. These electrodes covered completely the two faces perpendicular to the polarization axis. In this work the first electrode is unchanged but the size of the second electrode is varied. The size effect of the electrode on the electrical admittance curve of the sample is investigated. The chosen sizes are 1/25, 4/25, 9/25, 16/25 and 25/25 compared with the face of the sample, respectively. Depending on the size and location of the electrode, several modes can be generated or annihilated. In order to represent the frequency evolution of the admittance of piezoelectric ceramics, elastic loss and dielectric loss tensors are introduced.

Access the full study here:
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