

Electrical Properties measurements (Dielectric Spectroscopy)

- ❖ Impedance analysis and dielectric spectroscopy are valuable characterization tools for ceramics, polymers, liquid crystals, semiconductors, batteries, corrosion analysis, biomedical and biological systems.
- ❖ Many key aspects of material properties such as molecular relaxations, conductivity, phase separation, phase transitions, activation energy, glass temperature, rate of blending, purity, ageing, curing and many others can be determined.
- ❖ Permittivity $\epsilon^*(\omega)$, conductivity $\sigma^*(\omega)$ spectra are fundamental material parameters.

Instruments Description:

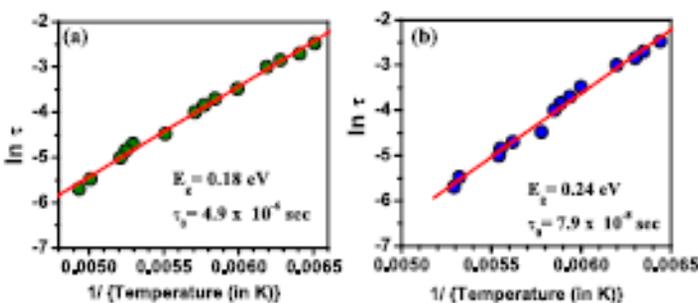
Make: Novo control (AT)

Frequency range: 3 μ Hz to 40 MHz

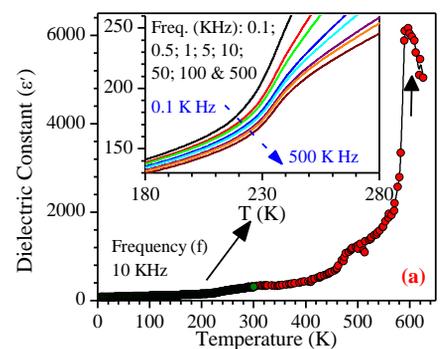
Temperature range: 5 – 1000 K



Selected Examples



Appl. Phys. Lett. 110 102901 (2017)



Phys. Rev Mat. 1 074411 (2017)

Ferroelectric Loop Tracer

The system will be used for polarization property measurements like ferroelectric hysteresis, leakage current, fatigue measurements, retention, and imprint measurements on the samples.

Instruments Description:

Model: aixACCT system GmbH

Hysteresis Frequency: 10mHZ – 250kHz

High voltage amplifier (up to 10 kV)

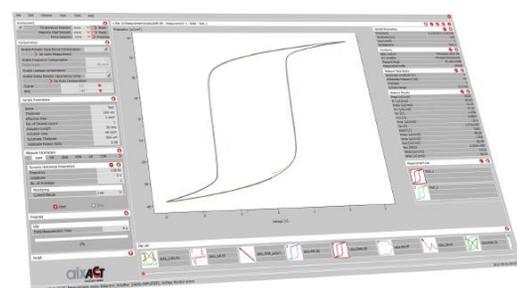
Sample holder for

Bulk ceramic/Thin and thick film

Pyroelectric characterization

Determination of Pyroelectric coefficient

Temperature Range : 300- 500 K



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