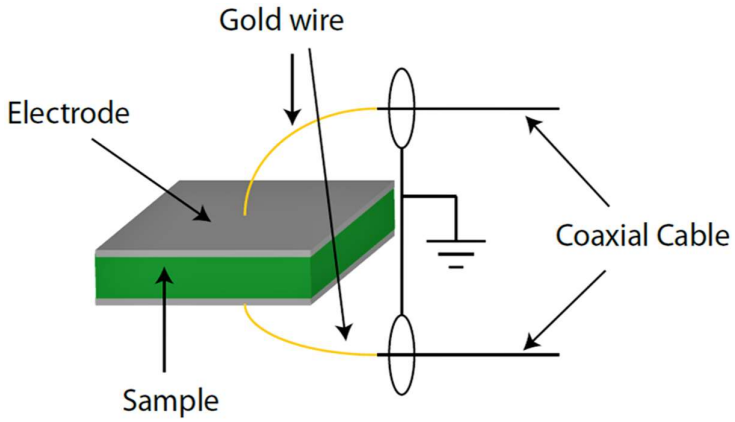
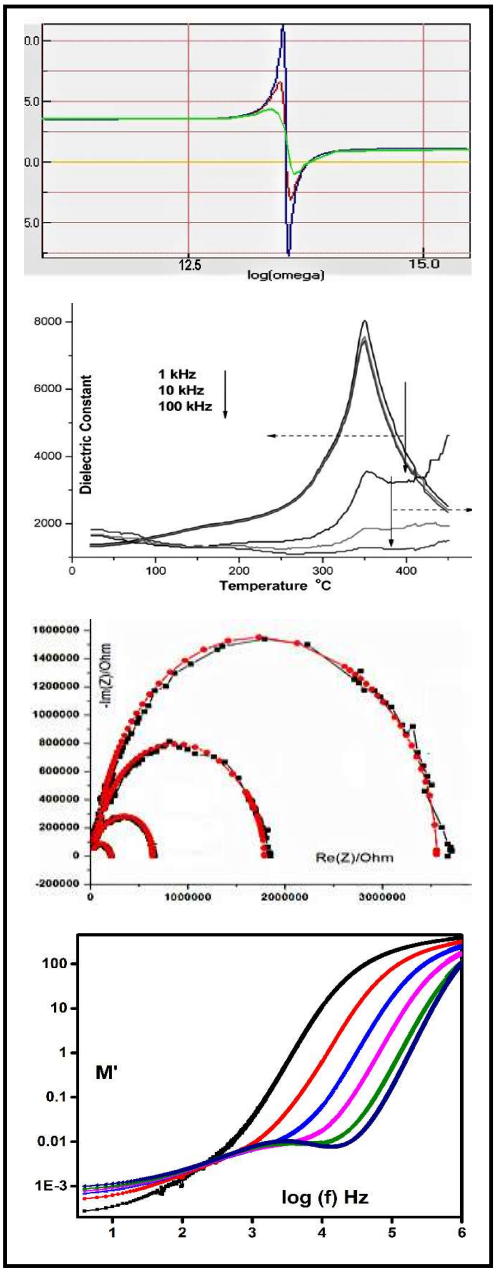
DIELECTRIC MEASUREMENT SYSTEM





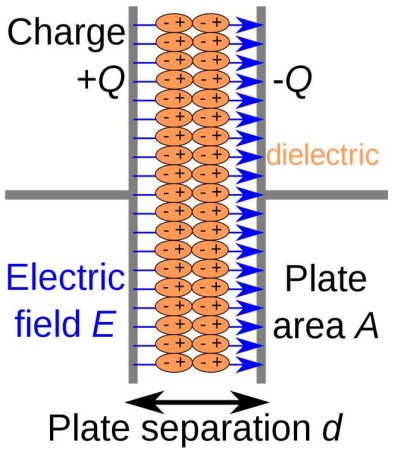
ABOUT THE SYSTEM

A dielectric is an electrical insulator that can be polarized by an applied electric field. When a dielectric is placed in an electric field, electric charges do not flow through the material as they do in an electrical conductor but only slightly shift from their average equilibrium positions causing dielectric polarization. Because of dielectric polarization, positive charges are displaced in the direction of the field and negative charges shift in the opposite direction. This creates an internal electric field that reduces the overall field within the dielectric itself. If a dielectric is composed of weakly bonded molecules, those molecules not only become polarized, but also reorient so that their symmetry axes align to the field. The study of dielectric properties concerns storage and dissipation of electric and magnetic energy in materials. Dielectric are important for explain various phenomena in electronics, optics, solid-state physics, and cell biophysics. The system designed by us study various dielectric properties above using Highly advance dielectric measurement test system and software. The complete system comprises of measurement unit and related temperature accessories for bulk and thick test specimen. The techniques are well defined by our team of experts which makes the system versatile.

MODEL: DMSRT1258

Various Tests Performed by this Model

- **Parameter** over a frequency range at **fixed temperature.**
- **Parameter** over a temperature range at **fixed frequency.**
- **Dielectric constant** over a frequency range at **fixed temperature.**
- **Dielectric constant** over a temperature range at **fixed frequency.**
- **Modulus** over a frequency range at **fixed temperature.**
- **Modulus** over a temperature range at **fixed frequency.**
- **Z Plot** over a frequency range at **fixed temperature.**
- **Z Plot** over a temperature range at **fixed frequency.**
- **Epsilon prime vs epsilon double prime** over a **frequency range.**



DIELECTRIC MEASUREMENT SYSTEM

TECHNICAL SPECIFICATIONS

The Highly advance dielectric measurement test system and software takes care of important functions of the measurement automatically without any human interventions. Following are highlights of important functions:

- Simultaneous measurement and graphical representation of measured and calculated various dielectric parameters.
- Maintain temperature using programable PID functions and number of temperature points
- Representation of data and graphs in automatic scale
- Online math work for different calculations using sample dimensions
- Data in standard ASCII Format exportable to standard software's like excel origin etc.
- Online export of data from graph
- All standard graph functions like zoom in, zoom out, marking, colour changing etc.

Measurement Option 1	**Keysight Impedance Analyzer E4990A**
Frequency range	20 Hz – 10,20,30,50,80,120 MHz
Measurement Option 2	**Newtons4th Impedance Analyzer PSM1735**
Frequency range	10 μHz to 35MHz
Measurement Option 3	**Newtons4th Impedance Analyzer PSM3750**
Frequency range	10 μHz to 50MHz
Measurement Option 4	**HIOKI LCR Meter 3536**
Frequency range	4Hz – 8MHz
Measurement Option 5	**HIOKI Impedance Analyzer 3570**
Frequency range	4Hz – 5MHz
Temperature Options	**Model**
Cryogenic Temperature Stage	100RT (96K – 273K)
Microprobe Temperature Stage	RT250 (RT – 500K)
High Temperature Stage I	RT500 (RT – 773K)
High Temperature Stage II	RT800 (RT – 1073K)
Resolution/ Accuracy	0.1°K / 1°K
Test Specimen	**Bulk/Film**
Sample Dimension	8X8 mm
Thickness (Bulk)	0.1mm to 1mm
Thickness (Film)	10μm to 100μm
***For detailed specification, please refer to respective brochures. Also, the microprobe station is for thin film measurement**	

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