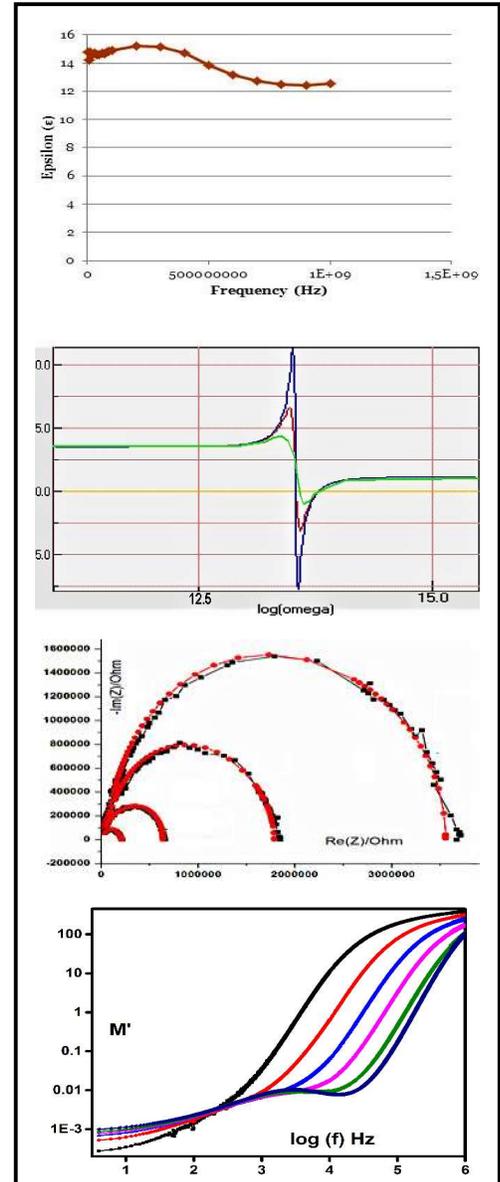


# DIELECTRIC MEASUREMENT TEST FIXTURE



## 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: DMSRT

### Various Tests Performed by this Model

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

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## TECHNICAL SPECIFICATIONS

The Highly advance dielectric measurement test fixture 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.
- 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.

MODEL	DMSRT
Parameters	Z  ,   Y  , C, L, X, B, R, G, D, Q, $\theta$ , DCR
Accuracy	0.05%
Frequency	0.1mHz to 120MHz (User to select LCR/ Impedance Analyser)
Sample Type	Pellet/ film/ Polymers
Gauge Resolution	0.01mm
Maximum Movement	20mm
Flatness	3 triangle finish
Capacitance short	0.1pf
Resistance short	1m $\Omega$
Sample Holder	Between Two Electrodes (In between flat surface)
Construction	Brass/Aluminium
Sample dimension Bulk	Dia 2-10mm, Thick 1-2mm
Sample dimension Thick	Dia 2-10mm, Thick 0.1mm-0.2mm
Sample Shape	Rectangular / Circular
Pressure	Option for strain gauge
Pressure measurement	Strain gauge display
Electrode Material	Brass
Connections	4 BNC Test Leads
Temperature	Optional RT – 200
Temperature Resolution	0.1 $^{\circ}$ C
Temperature Accuracy	1 $^{\circ}$ C

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