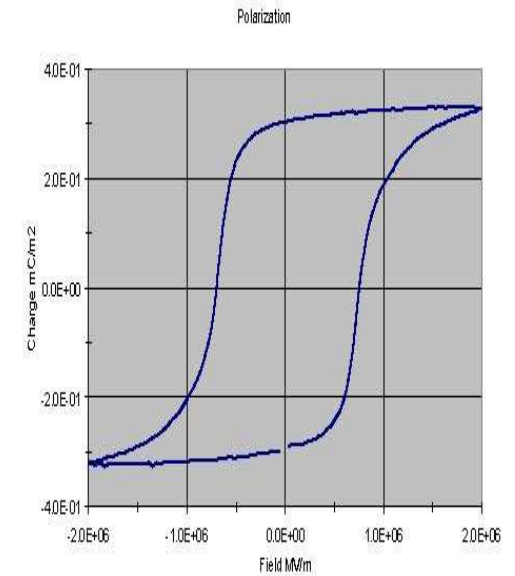




### About Us

Marine India is a Professional company, working in design development and production of material research systems for the welfare of Indian Scientific Natured Groups. The main thrust of our company is to produce highly advanced adaptable and low cost systems to suit both Indian and Foreign research facilities.



## Multiferroic Test System

### About the system

Multiferroic test system is designed and developed by our company and has recognition in the industry. The new system is digital and does not require and external computer or PC interface. Total operations are performed by a smart 7 inches touch panel and are fully automatic. The following tests can be performed with the system.

- PE loop at diff. frequencies
- PE fatigue measurement
- PE loop at diff. temperatures.
- Pyro-electric measurement
- Leakage Current Measurements
- Test under magnetic field

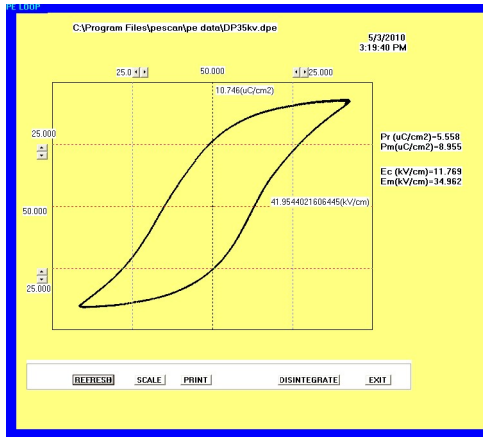
### Main Product Line

- PE loop tracer system
- BH loop tracer systems
- Multi Ferroic Test system
- Resistance measurement systems
- Electromagnets
- DC polling unit
- AC/DC power supplies
- Source Measure Unit
- LCR Meter/Impedance analyzers interfacing, software's
- 

## **MARINE INDIA**

A3/25B Green Apartment  
Near Jawla Heri Mrkt,  
Paschim Vihar  
New Delhi – 110063,  
INDIA  
Email: [sales@marineindia.com](mailto:sales@marineindia.com)  
[www.marineindia.com](http://www.marineindia.com)  
Ph +91 11 41428187

*Application Oriented Basic  
Science Group*



## General Specifications

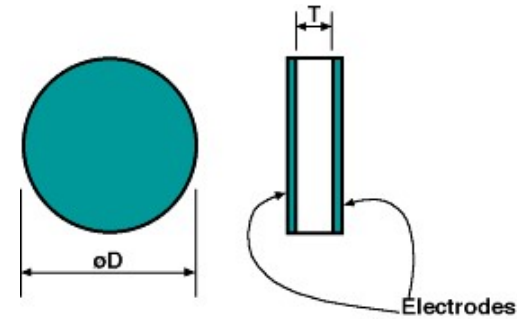
- Field 5 KV
- Frequency 1 Hz to 1 KHz
- Fatigue up to 20<sup>th</sup> order of cycles
- Resolution 18 bit
- Temperature RT- 500 degree with PID control
- Furnace and sample holder for bulk, thick and thin films
- Complete data transfer to standard software like Origin xls.
- Full touch screen operation using smart 7 Inches touch panel mounted on the unit
- Data transfer using USB stick
- LAN port for multiple connectivity and remote maintenance
- Absolutely no PCI/USB/ISA/RS232 interface required
- 19 inches rack mountable unit
- Silicon oil 500ml
- In built temperature interface for K type thermocouple

## Polarization Specifications

- Minimum Charge sensitivity 1.0 pico C
- Minimum PZT area 1  $\mu$  m
- Minimum Charge measurement
- Thin films 100  $\mu$  C
- Bulk and thick films HV 10  $\mu$  C
- 2 external sensor input 5 V bipolar

## System test specifications

- Output Range 0- 100 Volt bipolar for thin and thick films 0 – 5KV for bulk samples
- 16 Bit Wave form generator
- 100 points in 100 micro seconds
- 1000 points in 60 seconds
- Pulse width 10  $\mu$ S – 1 S
- 18 Bit AD convertor
- Capture rate 1  $\mu$ S with 0.2  $\mu$ S interlaced
- Test fixtures for bulk, thin and thick films.



## References

- Solid State Lab (SSPL) Delhi
- IIT Mandi
- Indian Institute of Science Bangalore
- CAT Indore
- IIT Delhi
- Rajkot Saurashtra University
- IIT Roorkee
- Shimla university
- Cat indore
- IIT Chennai
- Delhi University
- IASC Calcutta
- DMRL Hyderabad
- Osmania Univeristy

The full list is very exhaustive but above is only few major references.