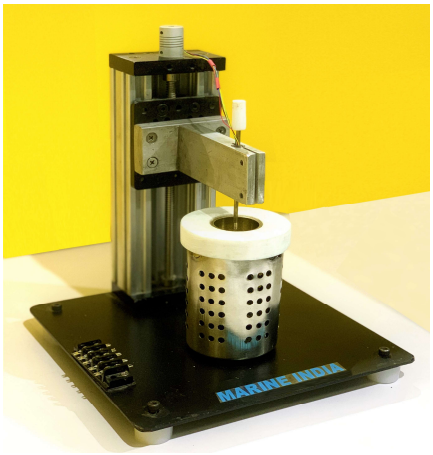
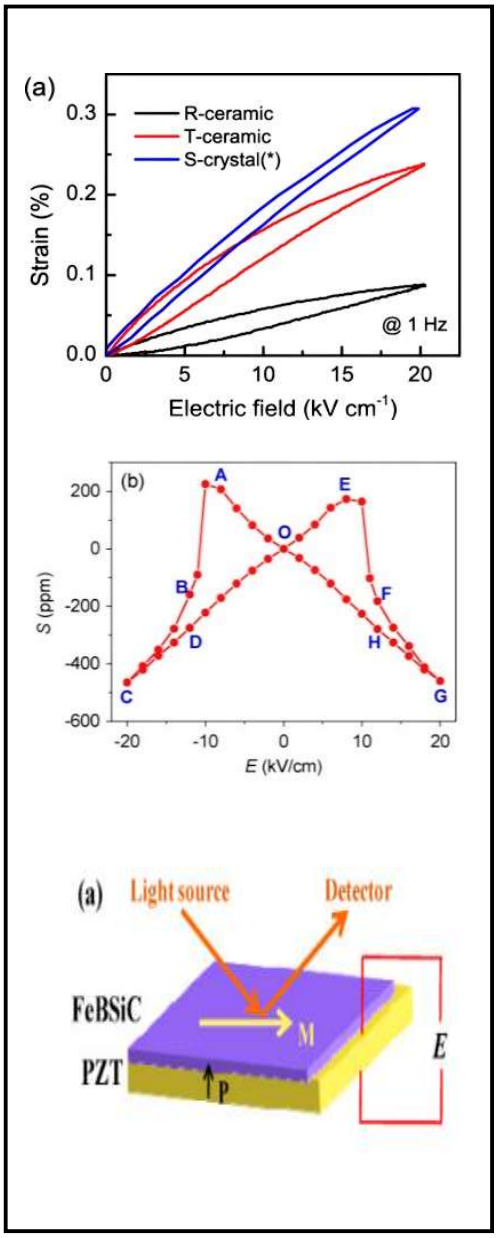
STRAIN MEASUREMENT SYSTEM





ABOUT THE SYSTEM

The effective use of piezoelectric or electro strictive actuators in smart structure systems. it is necessary to accurately measure the actuator strain vs. field characteristics. These characteristics generally display non-linearities, especially in the case of electro strictive materials, and also exhibit hysteresis, temperature and frequency variation and aging effects. Accurate characterization is needed both for quality control in actuator manufacturing and for design and optimization of the actuator control system. The Strain measurement system uses a LVDT with movable nickel-iron core that is suspended in a non-contacting manner in the LVDT main body. The core is mounted on a non-magnetic threaded rod that is attached, on the top side, to a miniature linear bearing slide to ensure vertical-only motion and, on the bottom side, to a probe that rests on the DUT. The Strain measurement system is designed by our company and is most advanced in its specifications and can undertake various tests needed by researchers. The accuracy and the resolution of the system is precise as low as 0.1 Micro metre.

MODEL: 0.1 SM 100HZ 18

Various tests performed by this model:

- Electric field vs Strain
- Current vs Strain

Test options available in other models:

- Electric field vs Polarization

STRAIN MEASUREMENT SYSTEM

TECHNICAL SPECIFICATION

Strain Measurement Unit	**0.1 SM 100HZ 18**
Field	Option 1 ± 2.4KV/ (24KV/cm) peak to peak Option 2 ± 4KV/ (40KV/cm) peak to peak
Frequency	0.1 Hz to 100 Hz
Sensor	LVDT
Resolution	18 Bit (0.1µm)
Minimum Sensitivity	0.1 µm for LVDT
Minimum Enhanced Resolution	0.01µm
Maximum Displacement	± 1.25 mm
Excitation Frequency	250 KHz
Maximum Test Frequency	100 Hz
Minimum Test Frequency	0.1 Hz
Minimum Leakage Current	0.01uA
Input Capacitance	1 p F
Wave Form Generator	18 Bit
ADC Resolution	20 Bit
Data	ASCI
Software Control	LabVIEW Based application
Interface	USB/RS232
Temperature Option	**Model**
Temperature Stage	RT- 250 (RT – 500K)
Resolution	0.1°K
Accuracy	1°K
Sample Stage	**Specifications**
Minimum Sample Area	1 sq. mm
Maximum Sample Diameter	10 – 15 mm
Maximum Sample Thickness	3 mm
Sample Stage Control	XY Microprobe Stage
Construction	Brass
Electrode Material	Silver/ Gold
Size	Rack Mountable Unit 19 Inches 4U
Power Supply	**Specifications**
Input	110/220V 50/60Hz
Power	800 Watt

MARINE INDIA

Regd Off – A-3/25B Green Apartment Paschim Vihar New Delhi – 110063, INDIA

Off Works – 7/23 Kirti Nagar Industrial Area New Delhi – 110015, INDIA

Ph/Fax: +91 – 11- 41428187, +91 – 9810289961

Email: sales@marineindia.com, info@marineindia.com

www.marineindia.com