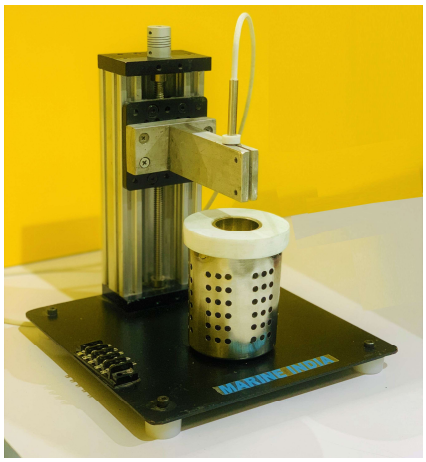
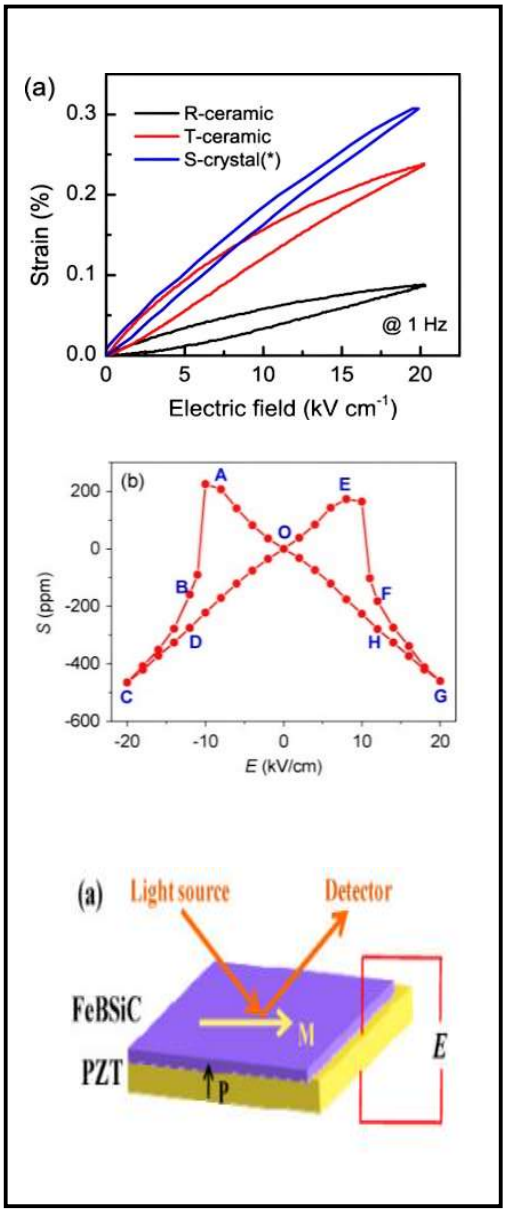
STRAIN MEASUREMENT SYSTEM





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 fiber optics and non-movable nickel-iron core that is suspended in a non-contacting manner. The sensor is mounted on a non-magnetic holder that is attached, on the top side, to a miniature linear bearing slide to ensure vertical measurement. 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 nano metre range

MODEL: 0.1 SM 100HZ 20

Various Tests Performed by this Model

- Electric field vs Strain
- Current vs Strain

Test performed by other models.

- Electric field vs Polarization

STRAIN MEASUREMENT SYSTEM

TECHNICAL SPECIFICATION

Strain Measurement Unit	0.1 SM 100HZ 20
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	Laser interferometer
Resolution	20 Bit (1nm)
Minimum Sensitivity	1 nm
Minimum Enhanced Resolution	1nm
Maximum Displacement	± 1.25 mm
Frequency	DC – 1 MHz
Maximum Test Frequency	100 Hz
Minimum Test Frequency	0.1 Hz
Minimum Leakage Current	0.01uA
Input Capacitance	1 p F
Wave Form Generator	20 Bit
ADC Resolution	22 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	Laser Trim Calibration
Construction	Teflon
Electrode Material	Silver/ Gold
Size	Rack Mountable Unit 19 Inches 4U
Power Supply	**Specifications**
Input	110/220V 50/60Hz
Power	800 Watt

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