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TOPIC:

Surface Micro-Machined RF MEMS and Test Structures for Induced Stress Characterization

ABSTRACT:

Multilayer metallic MEMS based sensors and actuators fabricated using surface micromachining techniques are well known to have in-built stress related deformation which undermines the reliability and functionality of devices. The presentation highlights the development of innovative RF MEMS switches and stress characterization 'test structures' in the surface and bulk micro-machined RFMEMS switches. Test structures developed for measurements of process induced tensile and compressing stress are elaborated. A few case studies e.g. RF MEMS switch and digital micro-mirrors are also presented.

PROFILE:

K J Rangra received his Master of Engineering from BITS Pilani, followed by Ph.D. from University of Trento, Italy. At present he is associated with Sensors and Nanotechnology Group, CSIR- CEERI Pilani, as Chief Scientist and Professor AcSIR. His responsibilities include projects from ISRO, DRDO & CSIR and management of Semiconductor Fabrication Facility.

His past short term assignments are: Visiting researcher in University of Edinburgh UK, University of Bologna, Italy and Consultant at Italian Institute for Research in Science and Technology, Bruno Kessler Foundation, Italy.

His research interests include the high frequency MEMS devices and systems, Vacuum Microelectronics, Analytical Techniques for device and materials characterization and MEMS technology development.