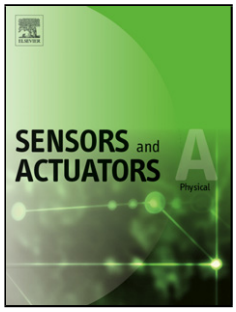

Title: Fabrication of electron beam physical vapor deposited polysilicon piezoresistive MEMS pressure sensor

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Biography of authors

Kulwant Singh is working in the area of MEMS design and fabrication since July 2007. He began his research work as M.Tech trainee in the area of design and fabrication of MEMS pressure sensor at CSIR-CEERI, Pilani, India. After completing his M.Tech. (Electronics design and technology) from Tezpur University, Assam, in 2008, he joined as an assistant professor in the Dept. of ECE, SRM University, India. In 2010, he joined as a Ph.D. Scholar at Nanomaterial and device research laboratory, SNST, NIT Calicut and worked with the CSIR-CEERI collaboration. At present he is working as an Assistant professor in the Dept. of ECE, BKBIET, Pilani Rajasthan, India. His current field of interest are device design and fabrication and MEMS/NEMS Sensors.

Robin Joyce graduated from Karunya Institute of Technology and Sciences in 2006 with a B.Tech in ECE and M.Tech in nanotechnology from Vellore Institute of Technology (VIT University) in 2008. He is presently a research scholar in School of Nano Science and Technology from National Institute of Technology-Calicut (NIT). His interests and skills are in thin film and silicon wafer fabrication process with special interest in wafer bonding.

Dr. Soney Varghese received M.Tech. (Polymer Technology) in 1999 from department of polymer Science & rubber technology, Cochin University of Science & Technology, Cochin, India and Ph.D. (Liquid Crystal Display) from Polymer Technology Group, Department of Chemical Engineering &Chemistry, Eindhoven University of Technology, The Netherlands in 2005. At present, he is working as an Assistant professor at at Nanomaterial and device research laboratory, SNST, NIT Calicut, India. His current field of interest are Nanomaterials and Devices, Nanofabrication, Microscopy for Nanotechnology, Liquid crystal display, Polymer Technology, Ferro & Piezoelectric devices, Nanocomposites and MEMS/NEMS Sensors.

Dr. Jamil Akhtar was born in Ghaziabad, India, in 1959. He received B.Sc (Hons) and M.Sc degrees in Physics with specialization in Physics and Electronics in 1977 and 1980 respectively. After a brief stay at Bharat Electronics Ltd. (BEL) Ghaziabad as Planner-B, he received Junior Research Fellowship and Senior Research Fellowship of CSIR, India for the period of 1980 to 1983, for his Ph.D. thesis work on "Study of Two-Dimensional Breakdown Phenomena in Semiconductor Devices", at CSIR-CEERI, Pilani, India.

Since March, 1983, he has been associated with CSIR-CEERI, Pilani, as Scientist for R&D in Semiconductor Devices and Technology. At present he holds the grade of Scientist-G (Chief Scientist) and heads the Sensors and Nano-Technology Group. He visited Technical University of Munich, Germany, during 1991-92, under DAAD fellowship program to work on W-band GaAs IMPATTs. From 1998 to 2001, he was at School of Physical Sciences at J.N.U., New Delhi as research fellow and worked on ion-solid interaction for device applications and established first experimental observation of MeV ion beam induced reordering phenomenon in discrete systems. The work has been used for the award of a Ph.D degree from JNU, New Delhi. He has been involved in a number of projects sponsored by DRDO, DAE, ISRO and CSIR and completed successfully with working prototypes. He has been instrumental in imparting Hands-on-Training in MEMS under NPMASS program to faculties from Engineering Institutions including IITs , NITs and central universities. His passion is to develop working prototypes.

His research interest includes; technology for silicon based IMPATTs and BARITTs for x-band and w-band applications, Numerical techniques for semiconductor device simulation, Design and fabrication of Microstrip detectors, piezoresistive micro-sensors based on MEMS technology and MeV ion assisted techniques for nanostructure formation in single crystalline silicon. Besides,

Silicon Carbide technology for Schottky diode detector for high energy particles has been established to be the first in the country. Ultrasonic Micromachining (USM) in MEMS, Ploysilicon by e-beam evaporation and Silicon nitride and oxides thin films by reactive co-sputtering are novel processes recently developed. Soft magnetic nano composites thin films and ferrite based devices for high frequency applications are additional activities. A silicon fab-line is also coordinated under 1000 class clean conditions. More recently diamond detectors development has been taken up for high energy and health care applications.