

PROCEEDINGS OF SPIE

***Reliability, Packaging, Testing,  
and Characterization of  
MEMS/MOEMS VII***

**Allyson L. Hartzell  
Rajeshuni Ramesham**  
*Editors*

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## Introduction

The reliability, packaging, testing, and characterization of MEMS/MOEMS are of paramount importance to the commercialization of these advanced and useful emerging technologies. This was the International Reliability Conference and the contributors at this conference were from Switzerland, India, United Kingdom, Israel, Canada, Germany, Taiwan, Singapore, Italy, South Korea, and the United States. The main objective of this one and only premier reliability conference was to provide a technical forum for in-depth investigations and interdisciplinary discussions involving reliability, packaging, testing, and characterization of MEMS/MOEMS. The response to the call for papers was awesome and technically rewarding to the MEMS/MOEMS and other communities.

This seventh conference on Reliability, Packaging, Testing, and Characterization of MEMS/MOEMS was sponsored by SPIE as a part of the Photonics West 2008 meeting. The conference was a part of the MOEMS-MEMS 2008 Micro-Nano Fabrication symposium and education program on MOEMS-MEMS, and was held 20–25 January 2008 at the San Jose Convention Center, San Jose, California, USA. SPIE is the premier international forum for presentation of the latest developments associated with MEMS and MOEMS including reliability, testing, packaging, materials, surfaces, and characterization.

In preparing for the conference, 28 high-quality papers were received from various countries. Seven long sessions covered MOEMS-MEMS plenary presentations, MEMS reliability, MEMS/MNT analytical applications, MEMS in homeland security and space applications, MEMS assembly, MEMS packaging, and MEMS characterization and simulation. We put together a technical program that had three plenary speakers and four invited/keynote speakers from various reputed laboratories around the country and globe, and a plenary speaker from Texas Instruments on DMD reliability. We also arranged, for the second consecutive year, a popular panel discussion on MEMS reliability that takes place during the conference.

We would like to personally thank Dr. Jason Clevenger, Dr. Danelle Tanner, Mr. Richard Kullberg, Dr. Herbert Shea, as well as Dr. Al Henning and Dr. Thomas Suleski (symposium chair and cochair) for their unstinted timely support and encouragement. Finally, we would like to thank all the session chairs and cochairs and program committee members for their support in successfully organizing this conference. We thank all the participants and everyone who attended this conference.

**Allyson L. Hartzell**  
**Rajeshuni Ramesham**





### **A Tribute to Peter Basque (1960-2007)**

Peter Basque died suddenly on Saturday, November 3, 2007 at the age of 47. Peter was an active committee member of the SPIE Reliability, Packaging, Testing, and Characterization conference at Photonics West, and was a Reliability Discussion Panelist in 2007. He worked for Analog Devices as the North American Reliability Manager from 2006–2007, and as the Reliability Manager of Analog's MEMS Micromachined Products Division from 1999–2006. He was the Reliability Manager at Intel's Hudson, MA semiconductor plant from 1994–1998, worked in reliability physics for Digital Equipment Corporation from 1988–1994, and was a Components Engineer at United Technologies Norden Systems (1984–1988). Peter was a member of several professional organizations including IEEE, AEC (Associate Technical Committee Member) and was the former Chairman of JEDEC. He graduated from the University of Massachusetts, Lowell in 1984 and received a Bachelor of Science in Electrical Engineering.

Peter published with the MEMS Industry Group (MIG) on reliability testing of Analog Devices MEMS products in critical applications, in 2003. His expertise included MEMS reliability, MEMS packaging, CMOS circuitry, and device physics. Peter's contributions in the MEMS reliability field were extensive, as he was responsible for the introduction of many new products in the Analog Devices inertial product line (including the gyroscope and tri-axis accelerometer). He worked methodically on MEMS structure capping which allowed plastic packaging of ADI MEMS sensors.

Peter lived by the motto "work hard, play harder." He was born September 5, 1960, in Leominster, Massachusetts, son of the late Norman and Phyllis (Plette) Basque. Norman Basque was the founder of Basque Plastics Corporation in Leominster MA, and one of the co-founders of the National Plastics Center and

Museum in that same town. Peter lived his entire life in Leominster, Massachusetts. He enjoyed spending time with his family, fishing, skiing, and cooking. He leaves his three sons, Justin, Devin, and Brandon Basque, his loving companion, Janet Brack, three granddaughters, Colleen, Taylor, and Zoe Basque; four brothers, Clifford Basque and his wife Jane, Richard Basque and his wife Patricia, Gregory Basque and his wife Donna, Rene Basque and his wife Karen; one sister, Irene Bibby and her husband Keith; his Aunt Gloria and late Uncle Norman Preville, and his Uncle Leo and Aunt Pauline Plette; and, he was the beloved uncle of nineteen nieces and nephews.

Peter will be sorely missed by his friends and colleagues in industry, his large family, and many friends. His contributions to MEMS Reliability will continue to be a foundation for future advancements in this important field.