5th International Symposium on Tin Whiskers – Presenter Biographies

Eric Chason (Brown University) is a professor in the division of engineering at Brown University. His major research interests are in the evolution of morphology and stress in thin films. He received his PhD in physics from Harvard in 1985. He was a staff member at Sandia National Labs in Albuquerque before joining the Brown faculty in 1998.

Gordon Davy retired from Northrop Grumman in Baltimore in 2007 as an Advisory Engineer in the field of materials and processes. He specialized in soldering, solderability, and solder defect inspection, and spent a lot of time trying to make sense of RoHS. He attended the first CALCE Tin Whiskers Symposium in 2002, where he met me, Henning Leidecker, Jay Brusse and others who had already discovered the wonders of tin whiskers. He has since been a regular participant in the Wednesday morning tin whiskers telephone conference calls started nearly ten years ago by Bill Rollins of Raytheon in Tucson.

Two days after last year's Whisker Symposium, Gordon and Bob Landman, with the help of Denny Fritz by telephone, reduced to practice an idea they had been discussing for preventing tin whisker growth by applying a metal cap *over* the tin. That's what he'll be presenting today.

Sungwon Han (CALCE) is a graduate research assistant at the Center for Advanced Life Cycle Engineering(CALCE) in the University of Maryland, College Park. He received his Master degree in Mechanical Engineering from Chung-Ang University in Korea. His research areas include reliability of electronic products, tin whisker failure analysis, and tin whisker mitigation.

Brooke Hatfield is a chemist who works in the Materials Process & Producibility Department at Raytheon Missile Systems in Tucson, Arizona. Brooke's background is diverse, ranging from geochemistry and geophysics to optical and mechanical engineering physics. Over the last 5 years Brooke has participated in the effort to make computational methods a standard tool for materials engineering at Raytheon.

David D. Hillman is a Metallurgical Engineer in the Advanced Operations Engineering Department of Rockwell Collins Inc. in Cedar Rapids, Iowa. Mr. Hillman graduated from Iowa State University with a B.S. (1984) and M.S. (2001) in Material Science & Engineering. In his present assignment he serves as a consultant to manufacturing on material and processing problems. He served as a Subject Matter Expert (SME) for the Lead-free Manhattan Project in 2009. He has published numerous technical papers with the 2008 SMTA International Conference on Soldering & Reliability being selected as "Best of Conference". In 2008 he was the recipient of the SMTA "Member of Technical Distinction" Award. Mr. Hillman was awarded the Da Vinci medal as a Rockwell Engineer of the Year for 1994. He serves as the Chairman of the IPC JSTD-002 Solderability committee. Mr. Hillman served as a Metallurgical Engineer at the Convair Division of General Dynamics with responsibility in material testing and failure analysis prior to joining Rockwell. He serves as a member of the SMTA Journal and Soldering & Surface Mount Technology Journal Technical Paper Review committees. He is a member of the American Society for Metals (ASM), the Minerals, Metals & Materials

Society (TMS), and Surface Mount Technology Association (SMTA) and the Institute for Interconnecting and Packaging of Electronic Circuits (IPC).

Elizabeth Hoffman, (Savannah River National Laboratory) is a Senior Engineer at Savannah River National Laboratory, Aiken, SC. She graduated from Drexel University with a PhD in materials science and engineering. Her research in metallic whiskers started by happenstance while in grad school when several carbide samples containing indium grew In whiskers while in storage.

Nitin Jadhav received a Ph.D degree in Materials Science from Brown University in 2011. His Ph.D thesis was "Understanding the Mechanisms of Whisker Formation in Sn-based Coatings" supervised by Prof Eric Chason. He is currently working as a post-doc with Prof Pradeep Guduru in Mechanical Engineering department at Brown University where he is studying Sn and Sn-Cu IMC as anode material for Li ion batteries.

Henning Leidecker (NASA Goddard) is a chief parts engineer working at NASA Goddard. He received his Ph.D. from The Catholic University of America in 1968. Dr. Leidecker has led a distinguished career as a Professor of Physics at American University, a Member of Technical Staff at Bell Laboratories, and NASA. He is considered an expert on tin whiskers, and has been awarded a "Silver Snoopy" by our astronauts. Dr. Leidecker recently consulted with the NASA team for the NHTSA NASA Study of Unintended Acceleration in Toyota Vehicles.

Stephan Meschter (BAE Systems) has 25 years of experience in advanced electronic packaging, electronics assembly mechanical failure analysis, and reliability testing of electronic assemblies at BAE Systems Electronic Systems in Johnson City, NY and its heritage companies (General Electric, Martin Marietta and Lockheed Martin). He has designed and tested electronic assemblies for power control, flight control and high vibration engine control electronic systems used in space, aircraft and ground vehicles. Dr. Meschter was a member of the Lead-free Manhattan Project team tasked with assessing the risk associated with the use of lead-free electronics in high reliability, harsh environment electronics in DoD applications. Currently Dr. Meschter is the Aerospace Industries Association Pb-free electronics risk management (AIA-PERM) Consortium Industry Vice Chairman.

Tsuyoshi Nakagawa joined Nippon Avionics Co.,Ltd. in 1992, and have taken charge of the surface mount technologies of our electronic product. In 2004,I contracted to Japan Aerospace eXploration Agency (JAXA), and have involved in safety and mission assurance for aerospace. I have been to study about tin whisker in Nippon Avionics now.

Michael Osterman (Ph.D. Mechanical Engineering, University of Maryland, College Park) is a Senior Research Scientist and the director of the CALCE Electronic Products and System Consortium at the University of Maryland. He heads the development of simulation assisted reliability assessment software for CALCE and simulation approaches

for estimating time to failure of electronic hardware under test and field conditions. Dr. Osterman is one of the principle researchers in the CALCE effort to develop simulation models for failure of Pb-free solders. In addition, he has lead CALCE in the study of tin whiskers since 2002 and has authored several articles related to the tin whisker phenomenon. Further, he has written various book chapters and numerous articles in the area of electronic packaging. He is a member of ASME, IEEE and SMTA.

Jamin Pillars received his undergraduate degree in chemical engineering from the University of New Mexico in the spring of 2011. He is currently a doctoral student in the Nanoscience and Microsystems department at the University of New Mexico and is working as an intern at Sandia National Laboratories. At the national labs, he performs electrochemistry research under the guidance of Graham Yelton in organization 1725, the photonic microsystem technologies department.

Polina Snugovsky is a Global Metallurgical Consultant - Celestica, Toronto. She is currently focused on Whisker growth and Pb-free joint formation and failure analysis. Dr. Snugovsky graduated from the State Metallurgical Academy of Ukraine and received her Ph.D. in metallurgy, and than in 1985 she received a much higher level Doctoral degree in metallurgy and material Science. Before she joined Celestica in mid-1996 she worked as a full professor of the department of physical metallurgy of the State Metallurgical Academy of Ukraine. She is a specialist in eutectic type of materials and phase transformation. She has published over 140 papers and patented new materials and processes.

Jendrik Stein was born on the 7th of September 1983. He studied Materials Science at the University of Stuttgart, Germany until November 2009. Afterwards he started his Ph.D. work, which is a collaboration of the Robert Bosch Company in Schwieberdingen (Germany) and the Max Planck Institute of Intelligent Systems (formerly Max Planck Institute of Metals Research) in Stuttgart (Germany) in the department phase transformations of Prof. Mittemeijer.

Yong Sun received his Bachelor's degree from Shanghai Jiao Tong University, China, in 2010. He is currently pursuing his PhD degree in the Mechanical Engineering Department of the University of Maryland. He has been working on tin whisker mitigation with conformal coating in the LOMSS (Laboratory for Optomechanics and Micro/nano Semiconductor/Photonics Systems) of CALCE (Center for Advanced Life Cycle Engineering) since January 2011. His broad research interest includes reliability assessment of semiconductor packaging materials and subassemblies using experimental and numerical approaches.

Don Susan has been with Sandia National Laboratories for the past ten years, performing research in the areas of soldering, brazing, glass/metal joining, and failure analysis. Prior to Sandia, Don received his Ph.D. from Lehigh University. For the past one and half

years, Don has been involved in tin whisker characterization and research to support high reliability microelectronics.

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Anduin Touw is an Associate Technical Fellow for Boeing Space and Intelligence Systems and received her PhD in Reliability Engineering at University of Maryland. She is an industry recognized expert in the field of electronic component reliability estimation with a specialty in application of statistical and cost analysis methods to anomaly investigations and general reliability engineering problems for space and military applications. She is also an industry leader in tin whisker risk mitigation and management, associated with the transition to Pb-free solders in the commercial world.

She graduated from Haverford College in Mathematics in 1994 and received a Masters Degree in Statistics from University of California-Los Angeles in 1995. She also received a Masters Degree in Reliability Engineering from University of Maryland in 2005. She was a National Physical Science Consortium Fellow at the National Security Agency from 1995 to 1996 and a statistician for Hughes Space and Communications from 1996 to 1999. From 1999 to 2001, she was a statistical cost analyst for Institute for Defense Analysis from 1999 to 2001, during which time she was awarded the Koopman prize for outstanding research by the Institute for Operations Research and Management Sciences, an international industry association.

Mikihiko Urano joined High-Reliability Engineering & Components Corporation (HIREC) in 1991, and engaged in the maintenance support of JAXA qualified products. He has been studying tin whiskers and lead free parts for space applications since 2008.

Maureen Williams is a mechanical engineer in the Metallurgy Division of the Material Measurement Laboratory (MML) at National Institute of Standards and Technology (NIST) in Gaithersburg, MD. She graduated from the University of Maryland with a bachelor's degree in mechanical engineering in 1991 and a master's degree in materials science in 1999. Her research is focused on Sn whiskers. Since 1999 she has been involved in the International Electronics Manufacturing Initiative (iNEMI) Sn whisker projects and from 2001 until 2007 was co-chair of the iNEMI Sn Whisker Modeling Group. In 2009 and 2010 she participated in the Pb-Free Electronics Risk Reduction Program. She is currently the project leader of the NIST Sn Whisker Project. This project is working on the fundamental growth mechanism of Sn whiskers. Her areas of interest include scanning electron microscopy (SEM), Focused Ion Beam (FIB), and x-ray diffraction.