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Department of Mechanical Engineering
The Thomas J. Watson School of Engineering and Applied Science
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RESEARCH INTERESTS

Electronics Packaging Reliability, Computational Mechanics, Vibration Analysis/Testing

ACADEMIC EXPERIENCE

2013-present Assistant Provost and Executive Director, Center for Learning and Teaching
2011-2013 SUNY Distinguished Teaching Professor and Chairman
2002-2011 Professor and Chairman
1994-2001 Associate Professor
1988-1993 Assistant Professor

Department of Mechanical Engineering
Thomas J. Watson School of Engineering and Applied Science
State University of New York at Binghamton

Major Thesis/Dissertation Advisor, State University of Civil Engineering

New York at Buffalo

EDUCATION

Ph.D.-Structural Mechanics (Civil Engineering), September 1986, State University of New York at Buffalo
Dissertation: Temporal Finite Elements in Structural Mechanics

M.S.- Structural Mechanics (Civil Engineering), May 1983, State University of New York at Buffalo
Thesis: Computer Modeling of a Twisted Composite Girder

H. Ouakad, F. A. S., M. I. Younis, T. Levo, and J. Pitarresi, "Response of an Electrostatically Actuated Microbeam to Drop-Table Test," IEEE Thermal, Mechanical & Multiphysics Simulation and Experiments in Micro/Nano-Electronics and Microsystems Conference, Eurosime 2010, Bordeaux, France, April, 26-29, 2010

Younis, M. I., Miles, R. , and Pitarresi, J., "The Effect of PCB Motion and Electrostatic Forces on the Response of MEMS Devices under Shock," Proceeding of the 2009 NSF CMMI Engineering Research and Innovation Conference, Honolulu, Hawaii, June, 2009.

Al-Yafawi, A., Yu, D., Park, S.B., Pitarresi, J., Chung, S., "Reliability Assessment of Electronic Components under Random Vibration Loading," ECTC Conference, San Diego, CA May 27, 2009.

Argawal, A., Levo, T., Pitarresi, J., Roggeman, B., "Board Level Energy Comparison and Interconnect Reliability Modeling under Drop Test," ECTC Conference, San Diego, CA May 27, 2009, pp. 1694-1702.

Guruprasad, P., and Pitarresi, J., "Comparison of Joint Level Impact Fatigue Resistance and Board Level Drop Test," ECTC Conference, San Diego, CA, May 27, 2009, pp. 1708-1713.

S. B. Park, Chirag Shah, Jae B. Kwak, Changs

Pitarresi, J.M., Chaparlla, S, Sammakia, B., Nguyen, P., Patwardhan, V., Zhang, and Kelkar, N., "A Parametric Predictive Solder Joint Reliability Model for Wafer Level-Chip Scale Package," ECTC San Diego, CA, May 2002.

Pitarresi, J.M., Geng, P, Beltman, W., and Ling, "Dynamic Modeling and Measurement of Personal

Holub, I.R., Pitarresi, J.M., and Singler, T.J., "Effect of Solder Joint Geometry on the Predicted Fatigue Life of BGA Joints," 1996 InterSociety Conference on Thermal Phenomena (ITHERM-96), Orlando, FL, May 29-June 1, 1996, pp.187-194.

Singler, T.J., Pitarresi, J.M., Holub, I.R., and Yin, H., "Toward an Optimization Algorithm for Solder Joint Reliability," ASME 2nd International Electronic Packaging Conference, Vol. 2, pp. 1155-1166, 1995.

Iannuzzelli, R., Pitarresi, J.M., and Prakash, V., "Application of the Integrated Matrix Creep Method to Solder Joint Reliability Prediction," 1995 ASME Annual Meeting, Atlanta, GA, Nov. 1995

Pitarresi, J.M. and Akanda, A., "Random Vibration Response of a Surface Mounted Lead/Solder Joint," ASME International Electronic Packaging Conference, Vol. 1, Binghamton, NY, Sept. 1993, pp. 207-217.
Macek, T. and Pitarresi, J.M., "Optimization of an Electrical Spring Connector," Proc. 43rd Electronic Components and Technology Conference, Orlando, FL, June 1-4, 1993, pp. 1083-1090.

Pitarresi, J.M. and Di Edwardo, A. V., "A Design Approach for the Systematic Improvement of Support Locations for Vibrating Circuit Cards," ASME Journal of Electronics Packaging, Vol. 115, March 1993, pp.118-123.

Pitarresi, J.M. and Primavera, A., "Comparison of Vibration Modeling Techniques for Printed Circuit Cards," ASME Journal of Electronics Packaging, Vol. 114, December 1992, pp. 378-383.

Prakash, V., Engel, P.A., Pitarresi, J.M., Albert, T. and Westby, G., "Stress Analysis of Component Attachments to Printed Circuit Boards," Soldering and Surface Mount Technology, Vol. 1, (1993).

Pitarresi, J.M. and Kunz, R., "A Rapid Technique for the Estimation of the Optimal Support Locations of Vibrating Plates," ASME Journal of Vibration and Acoustics, Vol. 114, No. 1, January 1992, pp. 112-118.

Pitarresi, J.M., Celetka, D., Coldwell, R. and Smith, D., "The Smearred Properties Approach to FE Vibration Modeling of Printed Circuit Cards," ASME Journal of Electronics Packaging, Vol. 113, September 1991, pp. 250-257.

Pitarresi, J.M. and Manolis, G.D., "The Temporal Life Element Method for Structural Dynamics," International Journal of Computers and Structures, Vol. 41, No. 3, 1991, pp. 647-656.

Pitarresi, J.M. and Di Edwardo, A., "Optimal Support Locations for Circuit Cards Populated with Modules," ASME Winter Conference, Atlanta, Ga., December 1-6, paper no. 91-WA-EEP-2, 1991.

Pitarresi, J.M. and Primavera, A., "Comparison of Vibration Modeling Techniques for Printed Circuit Cards," ASME Winter Conference, Atlanta, Ga., December 1-6, paper no. 91-WA-EEP-34, 1991.

Pitarresi, J.M., "Modeling of Printed Circuit Cards Subject to Vibration", IEEE Proceedings of the Circuits and Systems Conference, New Orleans, LA, May 3-5, 1990, pp. 2104-2107.

Prakash, V., Engel, P.A., Pitarresi, J.M., Albert, T. and Westby, G., "Stress Analysis of Component Attachments to Printed Circuit Boards," Proc. Int'l Electronic Packaging Soc. Conf., San Diego, CA, Vol 2, pp. 794-804, Sept, 1991.

Vehemeir, M. and Pitarresi, J.M., "Control and Structural Synthesis - a New Approach," Mathematical and Ce(J8(r)5.T97 TD 0 Tc]TJ /T5868 1-6(199)R)4. s00051(.)-. [(McS43.8(le)6.r)-1.1(d)4.2(5(T4 1 Tf 16.2335 8.(Ma90

Gellin, S. and Pitarresi, J.M., "Nonlinear Analysis Using Temporal Finite Elements," Journal of Engineering Analysis, Vol. 5, No. 3, 1988, pp. 126-132.

Cha, J.Z., Pitarresi, J.M. and Soong, T.T., "Optimal Design Procedures for Active Structures," ASCE J. of Structural Engineering, Vol. 114, No. 2, Dec. 1988, pp. 2710-2723.

Pitarresi, J.M. and Soong, T.T., "Optimal Design of Active Structures," Computer Applications in Structural Engineering, D. R. Jenkins, Ed., 1987 pp. 591-597.

Gellin, S. and Pitarresi, J.M., "Temporal Finite Elements for Nonlinear Truss Analysis," IV International Symposium on Numerical Methods in Engineering Atlanta, Georgia, pp. 547-552, March 1986.

BOOKS AND CHAPTERS

Shames, I.H., and Pitarresi, J.M., Introduction to Solid Mechanics, 3rd Prentice-Hall, 2000.

Pitarresi, J.M. Modeling of Circuit Cards Subject to Vibration, Chapter in Recent Advances in Electronics Packaging, Vol. 2, J. E. Morris, Ed., Van Nostrand Reinhold, New York, 1991, pp. 103-137.

EXTERNALLY-SPONSORED RESEARCH

Vibration Reliability Measurement and Modeling, Universal Instruments Corp., 9/2012 – 8/2013, \$153,000 (Co-PI)

Research on electronics Reliability, Universal Instruments Corp., 1/9/2012 – 5/18/12, \$182,740 (Co-PI)

Engineering 2020 eSTEM Program, NSF, 5/10 – 5/15, \$600,000 (Co-PI).

Microbeams under Mechanical Shock and Electrostatic Actuation Accounting for the Effects of Circuit Board and Package Motion, NSF, 9/07-8/10, \$318,992 (Co-PI).

MEMS micro-switch shock reliability, Office of Naval Research, Surface Warfare Division, 5/1/05 – 12/31/06, \$158,150 (Co-PI).

Die Stress measurement and modeling, Analog Devices, Inc., 2/05 – 1/06, \$48,481 (Co-PI).

Nano-mechanical prognostics of microelectronic structures, US Army–CERDEC, 11/03 – 10/04, \$9,500. (PI)

Reliability Assessment of Wafer Level Chip-Scale Packages, National Semiconductor Corporation, 1/1/2001 – 12/31/2001, \$59,871 (PI)

Vibration Analysis of Personal Computer Systems, Intel Corporation, 1/00 – 12/02, \$168,252 (PI)

Constitutive Modeling and Characterization of Lead Solder Alloys, Semiconductor Research Corporation, 9/01 – 8/03, \$210,000 (Co-PI)

Assembly and Operational Assessment of Tiled Chip Flat Panel Displays, 11/00 – 10/02, Rainbow Displays Corporation/NIST, \$145,951 (Co-PI)

Stress Discontinuity Modeling for Flat Panel Displays, NSF, 1/1/99-12/31/01, \$200,000, (Co-PI).

Modeling and Measurement of Di

Mechanical Performance of a Motion Simulator Platform, Doron Corp. 1/20/00-12/31/00, \$42,100 (PI).

Electronic Packaging: Characterization and Modeling, Universal Inst. Corp., 1/00-12/00, \$168,989. (PI)

Modeling and Measurement of Warpage in Electronic Packages, NSF/NYS/IEEC, 6/99-5/01, \$108,629.

Resistance Spectroscopy Applied to Solder Joint Fatigue Measurement, NSF/NYS/IEEC, 6/99-5/01, \$112,445. (PI)

Reliability Modeling of Chip-Scale Packaging Assemblies, Universal Instruments Corp., 5/1/97-12/31/99, \$252,869, (PI).

Development of a Micro-Mechanical Solder Constitutive Law, NSF/NYS/IEEC 9/97-6/98 \$22,690. (PI)

Moiré Measurement and Vibration Modeling of Electronic Packages, NASA/JPL, \$2,500, 6/97-7/97. (PI)

Verification of Computational Modeling Techniques Using Experimental Modal Analysis, IBM Corporation, 6/89-3/90, \$24,998. (PI)