CURRICULUM VITAE

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Education

Ph. D.	Metallurgy	Stanford University	Apr 1978
M.S.	Materials Sci & Engr	Stanford University	Jan 1976
B. Eng.	Mechanical Engineering	Tokyo Inst. of Tech.	Mar 1969

Summary of Professional History

Department of Chemical & Materials Engineering, San Jose State University, San Jose, CA 95192.
Associate Dean for Research (*Aug 2007 to Aug 2010*); Professor (*Aug 1993 to present*)
Biomedical Engineering Coordinator, *(Aug 2004 to present)*
Executive Director, Collaborative for Disaster Mitigation (*July 1999 to present*)
Associate Professor (*Aug 1989 to Aug 1993*); Lecturer (*Aug 1984 to Aug 1989*)

Senior Materials Engineer, ***Scientific Service, Inc.***, 35 Arch Street, Redwood City, CA 94062. (*Apr 1983 to Aug 1984*)

Consultant Scientist, ***European Institute for Transuranium Elements***, Karlsruhe, Germany. (*Aug 1980 to Feb 1983*)

Lecturer, ***Department of Materials Engineering***, San Jose State University, San Jose, CA 95192. (*Jan 1978 to Jun 1980*)

Ph.D. Candidate, ***Stanford University***, Stanford, CA. (*Sept 1974 to April 1978*)

Design Engineer/Plant Engineer, ***Nippon Sheet Glass***, Osaka, Japan. (*Sept 1969 to May 1974*)

Honors and Awards

Nov 2008	Outstanding Educator Award, International Microelectronics and Packaging Society
Apr 2004	President's Scholar Award, SJSU
Oct 1997	Gold Award, California Emergency Services Association
Apr 1997	Excellence in Scholarship Award, College of Engineering, SJSU
Jun 1989	Meritorious Performance and Professional Promise Award, SJSU
Jun 1987	Meritorious Performance and Professional Promise Award, SJSU
Aug 1977	Passed Ph. D. Thesis Defense with distinction
Sep 1976 - Jun 1977	Alice C. Steel Fellowship
Jul 1974 - Jun 1976	Fullbright-Hays Fellowship
Apr 1964 - Mar 1969	Japanese Government Scholarship

Languages: English, Japanese, German, Tamil, Malay.

Guna Seelan Selvaduray – Detailed Professional History

Department of Chemical and Materials Engineering, San Jose State University, San Jose, CA 95192.

Professor (*Aug 1993 to present*); Associate Professor (*Aug 1989 to Aug 1993*); Lecturer (*Aug 1984 to Aug 1989*)

***Current research interests*:**

- Materials compatibility issues in biomedical environments, including biomaterials and biomedical devices
- Assembly, encapsulation and interconnection of semiconductor and optoelectronic devices
- Utilization of Pb-free solders in micro- and opto-electronics and MEMS
- Fracture and failure analysis
- Corrosion phenomena
- Adhesion and bonding mechanisms
- Surface science and engineering
- Earthquake hazard mitigation - nonstructural hazard reduction, hazardous materials issues

Academic Activities

Courses taught: Introduction to Materials Engineering (*MatE 25*); Structure/Properties of Solids (*MatE 115*); Fracture Mechanics (*MatE 160*); Biomaterials (MatE 175)**; Ceramics* (*MatE 185A*); Thermodynamics of Materials (*MatE 151*); Design for the Environment** (*ENGR 196E*); Materials Selection and Processing** (*ENGR 221*); Production Processes (*IS&E 110*); Corrosion and Oxidation* (*MatE 220*); Experimental Methods in Materials Engineering** (*MatE 210*); Advanced Solid State Thermodynamics** (*MatE 251*); Microelectronic Packaging Materials Science** (*MatE 234*); Fracture Mechanics of Structures** (*MatE 236*); Regulatory, Clinical and Manufacturing Aspects of Medical Devices** (Engr 274); Thesis Preparation Seminar** (*MatE 281*).

* These two courses were "lecture-only" courses. Converted them to lecture-laboratory courses and developed the laboratory exercises necessary. In the case of Ceramics, developed an Engineering Ceramics Laboratory from the ground up, with a focus on powder processing and characterization.

** These eight courses did not exist previously. They were conceived of and developed, including where appropriate the necessary laboratory exercises. Three of these courses – MatE 210, MatE 251 and MatE 281 – are part of the MS Materials Engineering Core Curriculum. MatE 234 was part of the core curriculum for the Microelectronic Packaging specialization area within the Master of Science in Engineering (MSE) Program. MatE 175 and Engr 274 are part of the core curriculum for the Biomedical Devices concentration within the MSE Program.

Department Graduate Coordinator (*Aug 1989 to August 2005*). As graduate coordinator, revised the entire graduate program curriculum to keep it current with Silicon Valley technology. Incorporated higher quality standards, including oral and written communications skills development requirements. Developed the thesis process, including the Thesis Preparation Seminar (MatE 281) to ensure high quality and promote a research environment within the department. Recruited students into the program. Did all of the academic advising for the students in the program. Implemented procedures that streamlined the advising process without sacrificing the quality of advising.

Specialization Area Coordinator – ***Microelectronic Packaging*** (*January 1991 to August 2005*) Created this specialization area within the interdisciplinary Master of Science in Engineering Program. Was responsible for all aspects of the development, including: (a) establishing an Industry Advisory Group, (b) formulating the four interdisciplinary core courses, (c) syllabus development for each class within the core, (d) designing the overall program, (e) academic and thesis advising of students.

Concentration Area Coordinator – ***Biomedical Devices*** (*August 2004 to present*) Created this concentration area within the interdisciplinary Master of Science in Engineering Program. Was responsible for all aspects of the development, including: (a) convening an Industry Advisory Group, (b) coordinating with other departments within the College of Engineering, and Biology Department, to ensure interdisciplinary nature of the curriculum developed, (c) defining core courses and course contents, (d) marketing of the program and student recruiting. Developed and successfully submitted the Concentration Area proposal to make this specialization area into a CSU-approved concentration area.

Coordinator – ***B.S. Biomedical Engineering program*** *(November 2006 onwards)* Requested by the Dean of Engineering to lead a faculty task force for developing an ABET accredited B.S. Bioengineering program. Developed and submitted Bioengineering minor proposal which was approved in December 2007, and a B.S. Engineering with concentration in Bioengineering proposal which was approved in December 2008. Developed and submitted the proposal for creating a B.S. and M.S. Biomedical Engineering degree programs which were approved by all SJSU committees during Fall 2010 and Spring 2011, respectively. The CSU Chancellor's Office approved both proposals in October 2011.

B.S. Senior Project and M.S. Thesis Supervision: Primary Adviser for approximately 115 B.S. Senior Projects and M.S. theses and projects - primarily M.S. Theses. Thirteen students were nominated for, and won the SJSU Research Award. Three students have won the CSU system-wide Research Award. Approximately 70% of theses/projects supervised were sponsored by outside agencies and companies. Ten students have proceeded onto PhD granting institutions. Served on numerous other thesis committees as member of the Reading Committee.

Professional Development Courses

Developed and conducted the following short courses for practicing professionals: Earthquake Hazard Reduction, Acid Copper Electroplating for Printed Wiring Boards, Electroless Copper Plating for Printed Wiring Boards, Taguchi Methods for Process Development, Corrosion in Microelectronics, Phase Diagrams in Microelectronics, Materials Issues in Semiconductor Packaging.

During Summer 1997 and 1998 conducted the NSF sponsored Undergraduate Faculty Enhancement Courses on *Assembly and Packaging of Microelectronic Devices*. Each of these four short courses was attended by 20 faculty from other US universities, for a total of 80 attendees. Each course lasted one week and included lectures, laboratory exercises and field trips to local industries. Wrote and successfully submitted the proposal for NSF funding to conduct these workshops.

Initiated and conducted the *Microelectronics Packaging Summer Institute* during Summer 1994 and 1995. Each "institute" consisted of four Professional Development Courses.

Initiated and conducted the *Earthquake Hazard Reduction Workshop* series from 1987 through 1992. This series was attended by approximately 350 safety professionals.

Service to University Community

College of Engineering Committees: Student Affairs Committee, Curriculum Committee, Graduate Studies and Research Committee, Dean Search Committee, Retention Tenure and Promotion (RTP) Committee (Chaired committee for two years), Annual Research Review Organizing Committee (Chaired committee for four years).

University Committees: Provost Search Committee, Associate Director International Programs Search Committee, University Graduate Studies and Research Committee, AVP for Graduate Studies Search Committee, Vice-President for University Advancement Search Committee, AVP for Undergraduate Studies Search Committee (Chair).

Member of the Board, San Jose State University Foundation(2001 ~ 2006). Appointed to The Board in August 2001 as a representative of SJSU Faculty. This board oversees all activities of the Foundation, including policy and financial oversight. Member of the Finance and Investments Subcommittee that addresses the Foundation's financial issues and makes recommendations to The Board. Initiated the concept of Early Career Investigator Award to provide stimulus for early career faculty, and worked with the Board for its approval and implementation.

Executive Director, The Collaborative for Disaster Mitigation (CDM). (*July 1999 to present*). Originated the concept of The Collaborative, formulated its structure and brought together the necessary partners from state and local governments and Silicon Valley industries to form The Collaborative. Successfully obtained significant funding from The Federal Emergency Management Agency, through the California Governor's Office of Emergency Services. Developed MOUs that were signed by local jurisdictions. Recruited knowledgeable individuals, including elected officials, to serve on The CDM Executive Board and The CDM Users Group. The mission of CDM is to reduce damages that can be caused by natural and other disasters. Successfully managed and implemented several projects including the Laboratory Hazard Mitigation Project, two Translation Projects, and several others. One translation project involved translating a brochure on *Helping Children Cope after a Major Earthquake* into nine different languages – Spanish, Vietnamese, Chinese, Korean, Tagalog, Japanese, Turkish, Russian and Hindi. The other translation project was to translate The Seismic Safety Commission's *California Earthquake Loss Reduction Plan* into Japanese. Played a key role in facilitating Shizuoka Prefecture of Japan and California Governor's Office of Emergency Services signing an Agreement of Cooperation. Revised the California Seismic Safety Commission's *Homeowner's Guide to Earthquake Safety* to make it more suitable for use as a document to promote hazard mitigation. Supervised the translation of this document into Spanish so that a broader sector of California's population will be able to use it. This document has been adopted by the Silicon Valley Neighborhood Housing Services for use in training volunteers to assess the seismic safety of homes in the greater San Jose area.

Research and Professional Activities

Total external research funding secured since August 1989 is approximately $3.5 million. Research contracts and grants have been funded by the Federal government, NASA-Ames Research Center, California State government, local governments, and private industry.

A list of funded research projects is available separately.

Publications include more than 100 research papers, editing of 6 conference proceedings, and 12 technical reports. Total number of presentations is 120, primarily invited.

List of Publications and List of Presentations are available separately.

Conferences and Symposia

General Chair, *Bay Area Biomedical Device Conference Series* (2010 onwards)
This conference series is held every March on the SJSU Campus, and is attended by approximately 250 industry professionals, and university students and faculty.

Member, Organizing Committee, *Medical Electronics Symposium* (2010 onwards)

This conference is organized by the Microelectronics Test and Package Engineering Council, and is held every September on the Arizona State University campus.

Co-Chair, *Disaster Resistant California (DRC) Conference Series*

DRC03 was held in April 2003 at the Fairmont Hotel, San Jose, and was attended by approximately 330 professionals.
DRC04 was held in May 2004 at the Sheraton Grant Hotel, Sacramento, and was attended by approximately 450 professionals.
DRC05 was held in May 2005, at the Grand Hyatt Hotel, Sacramento, and was attended by approximately 575 professionals.

Organizer, Western Athletic Conference Academic Alliance *Symposium on Energy and Water Issues in Homeland Security*, San Jose State University, June, 2003.

Moderator of *Pb-Free Summit Symposium* series organized by The Microelectronic Packaging and Test Engineering Council (MEPTEC).

Initiated, together with two Japanese colleagues, the *International Conference on Corporate Earthquake Programs* series. These were held once every two years – alternating between Japan and San Jose, during the 1991 to 2004 period. Served as Chair of the US Organizing Committee since inception of this conference series.

Chair, Organizing Committee, of the *Fires, Floods & Faults Conference* series held in San Jose every April. (2000 ~ 2005)

Chair, Organizing Committee, of the *Business Continuity Planning Conference* series held in San Jose every November. (2000 ~ 2008)

Have chaired several conference sessions over the last 25 years.

Professional Affiliations

Member, ASM International (previously the American Society for Metals)
Member, International Microelectronics and Packaging Society
Member, Metallurgical Society of AIME
Member, Earthquake Engineering Research Institute
Member, Biomedical Engineering Society
Member, California Emergency Services Association

Other Professional Activities

Advisory Board Member, *Chip Scale Review*
Member, Organizing Committee, *Summit on Pb-Free Solder Implementation*, MEPTEC
Instructor, *Materials Issues in Semiconductor Packaging*, IEEE-CPMT

Technical Program Chair and Executive Committee Member, *Northern California Chapter of International Microelectronics and Packaging Society*
Reviewer of technical papers for several journals in materials science and engineering, biomedical engineering, and earthquake engineering.

Selected Consulting Activities: ZYCON Corporation (*Electroplating of printed wiring boards*); Peak Systems (*Materials selection for chlorine containing systems*); SYNTEX U.S.A., Inc. (*Earthquake hazard reduction*); Association of Bay Area Governments (*Special problems posed by hazardous materials during earthquakes*); Quantum Group (*Production development and process design*); California Office of Emergency Services (*Earthquake hazard reduction*); ICF Kaiser Engineers (*Corrosion of 316 stainless steels*); System Studies, Inc. (*Diffusion of moisture through telephone cables*); Seagate Technology (*Materials analysis and corrosion*); Lawrence Livermore National Laboratory (*Environmental and clean manufacturing technologies*); KLA Instruments (*Effect of deposition conditions on surface morphology of thin films*); Qtron (*Fracture mechanisms of ceramic capacitors*); Western Digital Corporation (*Corrosion of magnetic disk media, and Development of advanced magnetic disk substrates*); CTI Engineering, Tokyo (*Earthquake hazard reduction*); Urban Safety Research Institute, Tokyo (*Cost/benefit analysis of risk reduction techniques*), Alza Corporation (*Nonstructural hazard mitigation*); ChipPAC, Inc. (*Encapsulation and Interconnection of Microelectronic Devices*); The Pinson Institute (*Curriculum Development in Electronic Materials*); LSI Logic Corporation *(Failure Analysis of Electronic Components and Devices)*; Corporate Technology Center, United Defense *(Failure Analysis of Electronic Components and Devices)*; Seagate Technology *(Strength and Characterization of Glass Substrates)*; Adaptec *(Failure Analysis of Electronic Components and Devices)*; Alza Corporation (*Failure Analysis of Bioelectronic Components*); Uni-Kool Partners *(Corrosion Prevention of Ice-making Systems)*

Senior Materials Engineer, ***Scientific Service, Inc***., 35 Arch Street, Redwood City, CA 94062. (Apr 83 to Aug 84)

Management of R&D projects on:
1. Damage mechanisms under blast loading.
2. Materials analysis, fatigue, fracture and failure analysis, corrosion, materials selection.

Received National Science Foundation grant to study Japanese corporate earthquake hazard reduction practices.

Consultant to SRI International (*High temperature processes and materials*), The H.K. Ferguson Co. (*Materials selection for resistance to molten salt corrosion*).

Consultant Scientist, ***European Institute for Transuranium Elements***, Karlsruhe, West Germany. (Aug 1980 to Feb 1983)

Directed research project on pyrometallurgical Liquid Tin Process for reprocessing advanced breeder reactor fuels. Initiated the project. Accomplishments included laboratory design, experiment design and planning, scheduling, characterization and interpretation of results. Development of criteria for Light Water Reactor and Fast Breeder Reactor Plutonium reprocessing, quantification of decision analysis by use of computer codes.

Lecturer, ***Department of Materials Engineering***, San Jose State University, San Jose, CA 95192. (Jan 1978 to Jun 1980)

Taught graduate and undergraduate courses in Materials Engineering. Directed the following research projects:

1. Nuclear Waste Disposal in the Asia-Pacific Basin
2. Vitrified nuclear wastes/canister material/host geologic medium interaction kinetics at elevated temperatures and pressures (Funded by The Nuclear Regulatory Commission)
3. Analysis of the back end of the nuclear fuel cycle (Funded by The California Public Utilities Commission)
4. Carbothermic reduction of titaniferrous ores (Funded by Sohio Petroleum Corp.)
5. Computer calculations for plate profile of 4-high rolling mills (Funded by Nippon Mining)

Consultant to Massachusetts Institute of Technology (Diversion resistance of spent nuclear fuel reprocessing technologies), Garrett Associates (Pyrometallurgical recovery of aluminum from low-grade ores and smelter wastes), The Parlee-Anderson Corporation (Pyrometallurgical spent nuclear fuel reprocessing).

Ph. D. Candidate, ***Stanford University***, Stanford, CA 94305. (Sept 1974 to Apr 1978)

Ph. D. Thesis: Comparative Evaluation of Nuclear Fuel Reprocessing Techniques for Advanced Fuel Cycle Concepts. Passed Ph. D. Thesis defense with distinction.
Research on pyrometallurgical recycling of Zircaloy-2 nuclear fuel hulls.
Taught graduate course entitled: Metallurgical Reaction Engineering.
Graduate Student Assistant for the California Energy Commission.
Supervised electrical and mechanical safety procedures of metallurgical engineering laboratories.

Design Engineer/Plant Engineer, ***Nippon Sheet Glass***, Osaka, Japan. (Sept 1969 to May 1974)

Designed mechanical equipment, piping and control systems for sheet glass furnace, wrote technical manuals, and planned factory layout. Redesign of reversal valve resulted in substantial savings to company. (Sept 1969 to Feb 1972)

Supervised construction of sheet glass plant and sand processing plant, from ground breaking through machinery installation and commissioning. On completion of construction, was in charge of plant operations. Developed and implemented preventive maintenance schedules and procedures. Supervised a technical staff group of 45. (Feb 1972 to May 1974)

Guna Selvaduray – Publications/Papers

1. Aihara, H., ***G. S. Selvaduray***, A. Y. Craig, and J. Moskito, "*Surface Characteristics and Biocompatibility Study of Electropolished Wrought Co-Cr Alloy L605 for Biomedical Application*", Proceedings of 2008 International Medical Devices Conference, Oct 1-3, 2008, Minneapolis, Minnesota

2. Leung, D. and ***G. Selvaduray***, "*Effect of Design Factors on Microvia Reliability of Flip Chip Ball Grid Array Polymeric Substrates*," Journal of Microelectronics and Electronic Packaging, No. 5, p 104-115. (2008)

3. Aihara, H. and ***G. S. Selvaduray***, "*Surface Characterization and Biocompatibility of Co-Cr Alloy L605 Electropolished in 15 vol % Phosphoric Acid*", Proceedings of 2008 Translational Biomaterial Research Symposium, Society for Biomaterials, September 11-13, 2008, Atlanta, Georgia

4. Drexel, M., ***G.S. Selvaduray,*** and A. Pelton, "*The Effects of Cold Work and Heat Treatment on the Properties of Nitinol Wire"*, Proceedings of Materials and Processes for Medical Devices Conference, Palm Desert, California (September 23-25, 2007)

5. Chun B., H, Aihara, A.M.-C. Kuo, K.Jaladi, ***G. S. Selvaduray***, and A.Y. Craig, "*Effect of Microblasting on Surface Characteristics and Cytotoxicity of NiTi*", Proceedings of Materials and Processes for Medical Devices Conference, Palm Desert, California (September 23-25, 2007)

6. Cruz, M. M., R. T. Winslow, and ***G.Selvaduray***, "*Effect of BGA Reballing on the Formation of Intermetallic Compounds,"* Symposium for RoHS Impact on Rework/Repair/ Reprocessing, Maryland, USA (September 11, 2007).

7. Cruz, M. M., and ***G. Selvaduray***, "*Interfacial Reactions between Sn-3.0Ag-0.5Cu Solder and Printed Circuit Board Coatings*," in Proc. IPC International Conference on Lead-free Materials Surface Finishes, San Jose, California, USA (8-9 May 2007).

8. Cruz, M. M., R. T. Winslow, and ***G. Selvaduray***, "*Minimizing Thermal Gradients during Hot Solder Dip*," in Proc. Components for Military & Space Electronics Conference, Los Angeles, California, USA (12-15 March 2007), pp. 335-352.

9. Drexel, M., ***G. Selvaduray, G***., and A. Pelton, "*The Effects of Cold Work and Heat Treatment on the Properties of Nitinol Wire*", 2nd Frontiers in Biomedical Devices Conference, Irvine, California (June 7-8, 2007)

10. Vukazich, S., ***G. Selvaduray,*** and J. Tran, "*Santa Clara County Soft First Story Multi Unit Building Survey*", Earthquake Spectra, Earthquake Engineering Research Institute, (November 2006)

11. Winslow, R. T., R. G. Iyer***,*** M. M. Cruz and ***G. Selvaduray***, "*Hot Solder Dip and Minimizing Thermal Gradients*," in Proc. International Microelectronics and Packaging Society International Symposium, San Diego, California, USA (8-12 October 2006), pp. 513-520.

12. Drexel, M., ***G. Selvaduray***, and A. Pelton, "*The Effects of Cold Work and Heat Treatment on the Properties of Nitinol Wire*", International Conference on Shape Memory and Superelastic Technologies, Pacific Grove, California (May 7-11, 2006)

13. ***Selvaduray, G.*** and S. Trigwell, "*Effect of Surface Treatment on Surface Characteristics and Biocompatibility of AISI 316L Stainless Steel*," Proceedings of NanoBio2006 Frontiers in Biomedical Devices Conference, Irvine, California. (June 8-9, 2006)

14. Drexel, Masao J., ***G. Selvaduray*** and A. Pelton, "*The Effects of Cold Work and Heat Treatment on the Properties of Nitinol Wire*", Proc. 4th International Conference on Shape Memory and Superelastic Technologies, Asilomar, California. (April 2006).

15. Berkman, B., M. Drexel, A. Singh, and ***G. Selvaduray***, "*The Effect of Surface Tension on the Flow of Water Through Holes and Channels*", National Educator's Workshop, Gaithersburg, Maryland, (October 16-19, 2005)

16. ***Selvaduray, G***. and S. Trigwell, "*Effect of Surface Treatment on Surface Characteristics of 316L Stainless Steel*" Proceedings Materials and Processes for Medical Devices Conference, ASM International, Boston, Massachusetts. (November 14~16, 2005)

17. ***Selvaduray, G.***, "*Partnership Building for Disaster Mitigation: Collaboration among Government, Business and Academia*", Proceedings International Workshop on Emergency Response and Rescue, National Council on Science and Technology for Disaster Reduction, Taipei, Taiwan. (October 31-November 1, 2005)

18. Trigwell, S. and ***G. Selvaduray***, *"Effects of welding on the passive oxide film of electropolished 316L stainless steel,"* Journal of Materials Processing Technology, No. 166 p 30-43 (2005).

19. Chang, W., D.-S Jiang and ***G. Selvaduray***, "*CSP Drop Test Performance Comparison for Different Solder Ball Materials*", Proceedings IPC/JEDEC 8th International Conference on Lead Free Electronic Components and Assemblies, San Jose, California. (April 2005)

20. ***Selvaduray, G***., *"Protecting Laboratory Equipment by Implementing Nonstructural Hazard Mitigation,"* Seismic Design, Retrofit and Performance of Nonstructural Components in Critical Facilities, ATC-29-2, Applied Technology Council, Redwood City, California, (October, 2003)

21. ***Selvaduray, G***., and H. Bueno, *"The Critical Surface Tension of 316L Stainless Steel: Implications for Stent Thrombogenicity",* Proceedings ASM Materials and Processes for Medical Devices Conference, ASM International, Anaheim, California, September 8-10, 2003.

22. Fariabi, S., M. Rooein and ***G. Selvaduray***, *"Structure-Property-Processing Relationships of 316L Stainless Steel Hypotubing for Manufacturing of Intravascular Stents",* Proceedings Materials and Processes for Medical Devices Conference, ASM International, Anaheim, California, September 8-10, 2003.

23. ***Selvaduray, G***. and J. F. Becker*, "Development of Graduate Level Course on Packaging of Photonic and Optoelectronic Devices,"* Proc. 53rd Electronic Components and Technology Conference, IEEE-CPMT, New Orleans, May 25 - 27, 2003.

24. Vukazich, S., ***G. Selvaduray***, J. Tran and S. Arnold, *"Santa Clara County Soft First-Story Multi-Family Building Survey,"* Proc. Disaster Resistant California 2003 Conference, San Jose, California, April 21 – 23, 2003.

25. Chan, M., D. Lau, J. K. Ng and ***G. Selvaduray***, "Effects of Applied Plastic Film on Dispersion Characteristics of Glass Shards during In-Plane Racking," Proc. Disaster Resistant California 2003 Conference, San Jose, California, April 21 – 23, 2003.

26. Chan, H. A., ***G. Selvaduray***, and J.F. Becker, "*Requirements of Advanced Packaging Curriculum*," Proceedings of the 4th International Conference on Thermal & Mechanical Simulation and Experiments in Micro-electronics and Micro-systems, Aix-en-Provence, France, March 30 - April 2, 2003, pp. 155-160.

27. ***Selvaduray, G.***, *"Utilization of Pb-free solders in MEMS Packaging"*, in SPIE Proceedings on Reliability, Testing, and Characterization of MEMS/MOEMS, R. Ramesham and D. Tanner, Eds., 2003, Vol 4980, , pp. 268 – 274. (Invited)

28. Trigwell, S. and ***G. Selvaduray***, "*Effects of welding electropolished 316L stainless steel as used in ultra-pure fluid delivery systems for the semiconductor and pharmaceutical industries*," Journal of the Arkansas Academy of Science, Vol. 59, pp 198-207 (2002)

29. ***Selvaduray, G.***, "*Hazardous Materials: Earthquake Caused Incidents and Mitigation Approaches*," in Earthquake Engineering Handbook, W. F. Chen and C. Scawthorn, Eds., CRC Press, 2002, p 30-1 ~ 30-29.

30. Becker, J. and ***G. Selvaduray***, "*Optoelectronics Packaging Education at San Jose State University*," 2nd Annual IEEE Photonic Devices and Systems Packaging Symposium Proceedings, Stanford, California, July 2002. p 117-121.

31. ***Selvaduray, G***., K. McMullin, S. Arnold and R. Brindos, "*Nonstructural Hazard Mitigation Retrofit of an Engineering Laboratory at San Jose State University*," Proceedings of the Seventh National Conference on Earthquake Engineering, Boston, Massachusetts, July 2002.

32. ***Selvaduray, G***., W. Lee and S. Yee, "*Fluxless Soldering: A Review*," Microelectronic Packaging, 2001, Vol. 1, pp 289-304.

33. ***Selvaduray, G***., "*Every Problem Presents an Opportunity*," Guest Editorial, MEPTEC Report, pg. 34, (July/August 2000).

34. Turn, J. C., ***G. Selvaduray***, S. Vukazich and P. Amoukteh, "*Analysis of a PBGA Board Interconnect Failure*," Proceedings 3rd Semiconductor Packaging Symposium, San Jose, California, (July 2000).

35. Abtew, M. and ***G. Selvaduray***, "*Lead-Free Solders in Microelectronics*," Materials Science & Engineering Reports, Vol R27, Nos 5-6, June 1, 2000.

36. ***Selvaduray, G***, "*Recyclability of Microelectronic Systems*," Advances in Packaging Development and Research, Edited by J.A. Marcondes, (June 2000) pp 450 - 460.

37. ***Selvaduray, G***, "*Sintered Architectural Glass Tiles from Recycled Glass*," Advances in Packaging Development and Research,, Edited by J.A. Marcondes, (June 2000) pp 461 – 467.

38. Tojima, K. and ***G. Selvaduray***, "*Wetting Force of Lead-Free Solders on Bare Copper and Ni-Pd Coated Copper*," Proceedings International Conference on High Density Interconnect and Systems Packaging, Denver, Colorado, (April 2000) pp 585 – 591.

39. ***Selvaduray, G***., "*Lead-Free Manufacturing – An Expert Looks at the Issues*," Chip Scale Review,, March-April 2000. (New)

40. Lee, W., L.T. Nguyen and ***G. Selvaduray***, "*Solder Joint Fatigue Models – Review and Applicability to Chip Scale Packages*," Microelectronics Reliability, 40 (2000), pp 231-244.

41. Reitherman, R., ***G. Selvaduray***, M. Ino and S. Vukazich, "*Earthquake Protection for Businesses*," Proceedings 12th World Conference on Earthquake Engineering, Auckland, New Zeland, (Jan 2000)

42. Abtew, M. and ***G. Selvaduray***, "*Lead-Free Solders for Surface Mount Technology Applications*," ChipScale Review, Vol. 2, No. 4, September 1998, pp 29-38.

43. Nguyen, L.T., C.G. Quentin, N. Kelkar and ***G. Selvaduray***, "*Wafer Level Application of Reworkable Underfill*," Proceedings of iMAPS '99, Chicago, USA, October, 1999.

44. Dugbartey, N., D. Tovar and ***G. Selvaduray***, "*Temperature Dependence of Contact Angle of Silicone Encapsulant*," Proceedings of iMAPS '99, Chicago, USA, October, 1999.

45. Nguyen, L.T., J. Song, A. Prabhu, I. Singh and ***G. Selvaduray***, "*Wirebond Integrity for Ultra Fine Pitch Devices*," Proceedings of iMAPS '99, Chicago, USA, October, 1999.

46. Nguyen, L.T., W. Lee, N. Kelkar and ***G. Selvaduray***, "*Solder Joint Fatigue Model for the mSMD Wafer Level Chip Scale Package*," Proceedings of iMAPS '99, Chicago, USA, October, 1999.

47. ***Selvaduray, G***., "*Transforming the Mechanical Engineering Curriculum to meet the Challenges of the 21st Century*," Invited paper for the Journal of the Japan Society of Mechanical Engineering, November, 1998.

48. ***Selvaduray, G***., *"Effect of the Hanshin-Awaji Earthquake on Manufacturing Industries*," Proceedings of the Sixth National Conference on Earthquake Engineering, EERI, Oakland, California, May 1998.

49. ***Selvaduray, G***., "*Earthquake Caused Hazardous Materials Incidents at Educational Facilities*", Seismic Design, Retrofit and Performance of Nonstructural Components, Applied Technology Council, Redwood City, California, (January 1998)

50. Trigwell, S., R. Hayden, K. Nelson and ***G. Selvaduray***, *"Effects of Treatment on the Surface Chemistry of NiTi Shape Memory Alloys"*, Journal of Surface and Interface Analysis, June, 1997.

51. ***Selvaduray, G***., "*Occurrence of Hazardous Materials Incidents during the Northridge Earthquake of January 17, 1994*", Proceedings of the Northridge Earthquake Research Conference, CUREe, Los Angeles, California, August 21, 1997.

52. Brindos, R., and ***G. Selvaduray***, "*Effect of Temperature on Wetting Angle*", National Educators' Workshop: Update 96 - Standard Experiments in Engineering Materials Science and Technology, NASA Publication 3354, July 1997. pp 137-151.

53. Thomas, S., E. Hasenkamp and ***G. Selvaduray***, "*Determination of Oxygen Diffusion in Ionic Solids*", The Journal of Materials Education, Vol 19, No. 3, pp 213-215.

54. Hilden, J., K. Lewis, A. Meamaripour and ***G. Selvaduray***, "*Measurement of Springback Angle in Sheet Bending*", The Journal of Materials Education, Vol. 19, No. 3, pp 185-198.

55. Chao, J., S. Curotto, C. Anderson and ***G. Selvaduray***, "*The Effect of Surface Finish on Tensile Strength*", The Journal of Materials Education, Vol. 19, No. 3, pp 199-212.

56. ***Selvaduray, G***. and F. Barez, "*Microelectronic Packaging Curriculum Development at San Jose State University*", Proceedings of the 47th IEEE Electronic Components and Technology Conference, San Jose, California, (May 18-21, 1997)

57. ***Selvaduray, G***., W. Lee and S. Yee, "*Effect of Surface Treatment on the Wetting Force of Eutectic Pb-Sn Solder on Copper Substrates*", Design and Reliability of Solder Joints and Interconnects, R. K. Mahidhara, et al. Ed., TMS, Pennsylvania, (1997), pp 259-266.

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59. ***Selvaduray, G***., "*The Significance of Corporate Earthquake Programs - Similarities and Differences between Japan and the U.S.A.*", Journal of The Japan Society of Mechanical Engineers, Vol. 99, No. 935, (October 1996), pp 863-866. (Invited paper, in Japanese)

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62. ***Selvaduray, G***., "*Environmental Integration and Technologies"*, Advanced Manufacturing: Technology and International Competitiveness, UCRL-ID-120595, Feb 1995.

63. ***Selvaduray, G***., "*Undergraduate Engineering Ceramics Laboratory Development*", International Journal of Engineering Education, Vol. 11, No. 4-5, (1995) pp 374-379.

64. Eslamy, M. and ***G. Selvaduray***, "*Polymers in Microelectronics Packaging: Challenges and Trends*", Proceedings International Seminar of Polymer Science and Technology, Shiraz, Iran, May 2-4, 1994.

65. ***Selvaduray, G***. and A. Singh, "*Modeling of Flip-Chip-Bonded and Wire-Bonded MCM Interconnects for Electrical Performance Comparison*", Intl. J. of Microcircuits and Electronic Packaging, Vol. 17, No. 1, First Quarter 1994. pp 14-21.

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67. Aggarwal, I. and ***G. Selvaduray***, "*Role of CuxSny Intermetallics in the Reliability of Controlled Collapsed Chip Connection (C4)*", Proc. 8th International Electronic Materials & Processes Conference, ASM International, San Jose, California, August 1993. pp 75-82.

68. ***Selvaduray, G***. and L. Sheet, "*Aluminum Nitride: A Review of Synthesis Methods*", Materials Science and Technology, June 1993, Vol. 9, pp 463-473.

69. ***Selvaduray, G***. and C. Lomax, "*Fusible Heat Sink Materials: An Evaluation of Alternatives*", Proc. 22nd International Conference on Environmental Systems, SAE International, Seattle, WA July 13-16, 1992.

70. ***Selvaduray, G***. "*Laboratory Developments in Engineering Ceramics*", 1992 ASEE Annual Conf. Proc., June 21-25, 1992. Toledo, OH. pp 469-474.

71. ***Selvaduray, G***., C. Zhang, et al, "*Effect of CO2 on the Processing of Y-Ba-Cu-O Superconductors*", Journal of Materials Research, Vol. 7, No. 2, Feb 1992, pp. 283-291.

72. ***Selvaduray, G.***, E. Wyatt and J. Perkins, "*Analysis of Hazardous Materials Releases during the Loma Prieta Earthquake*", Proc. 3rd US-Japan Workshop on Urban Earthquake Hazards, EERI, Honolulu, Hawaii, November 13-15, 1991.

73. Perkins, J., W. Wyatt and ***G. Selvaduray***, Toxic Gas Releases in Earthquakes: Existing Programs, Sources and Mitigation Strategies, Association of Bay Area Governments, Nov 1991.

74. ***Selvaduray, G***., "*Corporate Earthquake Programs - Differences and Similarities between the U.S.A. and Japan*", Proc. First US-Japan Conf. on Corporate Earthquake Programs, Sept 24-26, 1991, San Jose, California.

75. ***Selvaduray, G***., "*Materials Selection Parameters for Ceramic Substrates: Property-Processing Relationships*", Materials Developments in Microelectronic Packaging: Performance and Reliability, P. Singh, Ed., ASM International, (1991) pp 29-35.

76. ***Selvaduray, G***. and C. Lomax, "*Fusible Heat Sink Materials: An Identification of Alternatives*", Proc. 21st International Conference on Environmental Systems, SAE International, San Francisco, California. July 15-18, 1991.

77. Balachandran, U., D. H. Xu, ***G. Selvaduray***, et al, "*Characterization of YBCO Superconductors Sintered in CO2-Containing Atmospheres*", Ceramic Transactions, Vol. 18, 1991. pp 341-355.

78. ***Selvaduray, G***., D. Richard, D. Quinn, and D. Rowland, "*Relationship Between Microstructure and Physical Properties of Al2O3 and SiC Reinforced Aluminum Alloys*", Interfaces in Metal Ceramics Composites, R.Y. Lin, et al, Eds., TMS, (1990) pp 271 - 289.

79. ***Selvaduray, G***. and L. Martinez, "*Thin Alumina Coatings on Borosilicate Glass: Interfacial Interactions During Heat Treatment*", Interfaces in Metal Ceramics Composites, R.Y. Lin, et al, Eds., TMS, (1990) pp 137 - 150.

80. Balachandran, U., D. H. Xu, ***G. Selvaduray*** et al, "*Degradation of Properties of YBa2Cu3Ox Superconductors Sintered in CO2-Containing Atmosphere*", Proc. Fourth Ann. Conf. on Superconductivity and Applications, Buffalo, NY, September 18-20, 1990.

81. ***Selvaduray, G***. "*Reducing Earthquake Caused Damage at Industrial Facilities*", Proc. 1st National Conference of DRP 2000, American Defense Preparedness Association, April 10-11, 1990, Los Angeles, CA. pp 56 - 67.

82. ***Selvaduray, G***., "*Earthquake Hazard Reduction in the Laboratory*", Proc. HAZMACON 89, Santa Clara, California, April 18 - 20, 1989.

83. ***Selvaduray, G***., M. B. Lange and D. Sullivan, "*Chemical Characterization of Ceramic Substrates for Microelectronic Packaging*", Proc. Symp. on Adv. Characterization Techniques for Ceramics, Electronics Division of The American Ceramic Society, San Francisco, (Oct. 1988).

84. ***Selvaduray G***. and R. Reitherman, "*Private Sector Earthquake Programs in Japan and the United States*", Proc. 9th World Conf. on Earthquake Engr., Tokyo, Japan. (Aug 1988).

85. ***Selvaduray, G***., "*Hazardous Materials Issues in Earthquake Emergency Response*", Proc. Second U.S.-Japan Workshop on Urban Earthquake Hazards, Shimizu, Japan. (Jul 1988).

86. ***Selvaduray G***. and M. B. Lange, "*Ceramic Microchip Packages: Materials Selection Parameters*", Proc. Ceramic Substrates and Packages, An International Symposium, Electronics Division of The American Ceramic Society, Inc. Denver, (Oct 1987).

87. ***Selvaduray, G***., "*Die Bond Materials and Bonding Mechanisms in Microelectronic Packaging*", Thin Solid Films, 153, (1987).

88. ***Selvaduray, G***., "*Earthquake Hazard Reduction at Japanese Petroleum Production Facilities*", Proc. Third U.S. Conf. on Earthquake Engineering, Charleston, S.C., (Aug 1986).

89. ***Selvaduray, G***., "*Development of Earthquake Hazard Reduction Equipment in Japan*", Proc. Third U.S. Conf. on Earthquake Engineering, Charleston, S.C., (Aug 1986),

90. ***Selvaduray, G***., "*Industrial Uses for Liquid Tin*", Tin International, (May 1985).

91. ***Selvaduray, G***., "*Industrial Earthquake Preparedness in Shizuoka and the Role of the Prefectural Government*", Earthquake Spectra, Vol. 1, No. 2, pp 307-318, EERI, Berkeley, Calif. (Feb 1985).

92. ***Selvaduray, G***., "*Liquid Tin as a Solvent Metal and Reaction Medium*", Tin and Its Uses, No. 141, pp. 12-13. (1984).

93. ***Selvaduray, G***., "*Earthquake Emergency Preparedness in Japan*", People and National Land Policy, Vol. 10, No. 3, pp. 24-29. (Sept 1984) (Japanese).

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95. ***Selvaduray, G***., "*Decontamination Requirements for FBR- and LWR- Derived Pu*", Trans. Am. Nuclear Soc. 1983 Winter Meeting, San Francisco. (Nov 1983).

96. ***Selvaduray, G***., "*The Liquid Tin Process: An Experimental Investigation of a Potential Pyrometallurgical Process for Reprocessing Irradiated Carbide Fuels for Fast Breeder Reactors*", European Appl. Res. Rept. - Nucl. Sci. Tech., Vol. 4, No. 6, pp. 1451-1514. (1983).

97. Ohto, T. and ***G. Selvaduray***, "*Effect of Backup Roll Length and Roll Neck Length on Profile for 4-h Mills*", Iron and Steel Engineer, Vol. 58, No. 3, pp. 60-65. (Mar 1981).

98. ***Selvaduray, G***., "*Interim Report on Dissolution of Uranium Carbide in Liquid Tin*", Commission of the European Communities, Joint Research Center, Karlsruhe Establishment, Technical Report K 0280042. (Dec 1980).

99. Anderson, R. N. and ***G. Selvaduray***, "*Thermodynamics of Ti-Sn Alloys*", Proc. 4th Intl. Titanium Conf., Kyoto, Japan. (May 1980).

100. ***Selvaduray, G***., M. Goldstein and R. N. Anderson, "*Review of Reprocessing Technologies*", Conservation and Recycling, Vol. 3, pp. 93-134. (Dec 1979).

101. ***Selvaduray, G***. and M. Goldstein, "*Internationally Safeguarded Atomic Fuel Exchange Center for the Asia Pacific Basin*", Proc. 2nd Miami Intl. Conf. on Alternate Energy Sources, Miami, Florida. (Dec. 1979).

102. Anderson, R. N., ***G. Selvaduray*** and M. Goldstein, "*Nuclear Reactors Capable of In-Situ Reprocessing*", Proc. 2nd. Miami Intl. Conf. on Alternate Energy Sources, Miami, Florida. (Dec. 1979).

103. ***Selvaduray, G***., and L. Heising, "*Proliferation Resistant Reprocessing Methods*", Nuclear Engineering International, Vol. 24, No. 292. (Nov 1979).

104. ***Selvaduray, G***., M. Goldstein and R. N. Anderson, "*Finding a Site to Store Spent Fuel in the Pacific Basin*", Nuclear Engineering International, Vol. 24, No. 290, pp. 44-47. (Sept 1979).

105. Anderson, R. N. and ***G. Selvaduray***, "*The Effect of Pressure Interface Interactions between Solids*", Proc. Conf. on High-Level Radioactive Waste Forms, Denver, Colorado. NUREG/CP-005, pp. 317-338. (Dec 1978).

106. ***Selvaduray, G***., R. N. Anderson and M. Goldstein, "*Separation Technologies Reviewed*", Nuclear Engineering International, Vol. 23, No. 275, pp. 35-40. (Aug 1978).

107. ***Selvaduray, G***., "*Comparative Evaluation of Nuclear Fuel Reprocessing Technologies for Advanced Fuel Cycle Concepts*", Ph. D. Thesis, Department of Applied Earth Sciences, Stanford University, California. (Mar 1978)

108. ***Selvaduray, G***., M. Goldstein and R. N. Anderson, "*Methodology for Comparative Evaluation of Nuclear Fuel Reprocessing Techniques for Advanced Low Proliferation Risk Fuel Cycles*", Proc. Intl. Conf. on Alternative Energy Sources, Miami, Florida. (Dec 1977).

109. Goldstein, M., ***G. Selvaduray*** and R. N. Anderson, "*Reprocessing Technologies for Alternate Fuel Cycles*", Proc. Intl. Sci. Forum on an Acceptable Nuclear Energy Future of the World, Miami, Florida. (Nov 1977).

110. Goldstein, M., ***G. Selvaduray*** and R. N. Anderson, "*Methodology for the Evaluation of Alternate Technologies Applied to Nuclear Fuel Reprocessing*", Brookhaven National Laboratory Report No. BNL-50700.

111. Goldstein, M., ***G. Selvaduray*** and R. N. Anderson, "*Waste Management and Proliferation: An Assessment of Technologies and Policies Relevant to Nuclear Power*", Brookhaven National Laboratory Report No. BNL-50694. (Mar 1977).

112. Goldstein, M., ***G. Selvaduray*** and R. N. Anderson, "*Survey of Reprocessing Technologies*", Brookhaven National Laboratory Report No. BNL-23083R.

Guna Selvaduray – Presentations

1. *"Medical Devices: Engineering's Contributions to the Quality of Life", Silicon Valley Professionals Lecture Series, Studies in American Languages Program at SJSU. (August 31, 2007) (Invited)*

2. *"Cost-Effective Methods for Reducing Earthquake Vulnerability", Business Continuity Planning Conference VII, San Jose, California (June 6, 2007) (Invited)*

3. *Minerva M. Cruz and Guna S. Selvaduray, "Interfacial Reactions between Sn-3.0Ag-0.5Cu Solder and Printed Circuit Board Coatings", International Conference on Lead-free Materials Surface Finishes, San Jose, California, USA (8-9 May 2007).*

4. *"Moving Beyond Borders", Cabrillo College Engineering Seminar Series, Aptos, California (March 20, 2007) (Invited)*

5. *"Surface Treatment, Surface Characteristics & Biocompatibility of AISI 316L Stainless Steel", Frontiers in Biomedical Devices Conference, ASME, Irvine, CA (June 8-9, 2006)*

6. *"When Engineering Generates Life: An Overview of Medical Devices Packaging", International Microelectronics and Packaging Society, Northern California Chapter Meeting, Sunnyvale, California. (November 1, 2006) (Invited Luncheon Speaker)*

7. *"Medical Devices: Improving the Quality of your Life," SJSU Alumni College, San Jose, California. (October 14, 2006)*

8. *"Mitigation – the Key to Survivability," SJSU Alumni College, San Jose, California. (October 14, 2006)*

9. *"Biomedical Devices – Current Developments and Future Trends", Symposium on Roadmaps for Next General Semiconductor Packaging, MEPTEC, Sunnyvale, California. (November 17, 2005) (Invited Keynote)*

10. *"Effect of Surface Treatment on Surface Characteristics of 316L Stainless Steel", Materials and Processes for Medical Devices Conference, Boston, Massachusetts. (November 14-16, 2005)*

11. *"Partnership Building for Disaster Mitigation: Collaboration among Public, Private and Academic Sectors", International Workshop on Emergency Response and Rescue, Taipei, Taiwan. (October 31-November 1, 2005) (Invited)*

12. *"Introduction to Biomaterials", Cabrillo College, Aptos, California. (October 24, 2005) (Invited).*

13. *"Surface Modifications of Implantable Medical Devices" San Jose State University Biology Department Seminar Series, San Jose, California. (October 12, 2005) (Invited)*

14. *"Effect of Surface Modifications on Biocompatibility of Implantable Medical Devices", ASM International, Santa Clara Valley Chapter Symposium, San Jose, California (September 17, 2005) (Invited)*

15. *"Dirty Bombs and Nuclear Devices", Certified Emergency Manager Lecture Series, San Jose, California (September 15, 2005) (Invited)*

16. *"Pb-Free Solders and their Effectiveness", International Microelectronics and Packaging Society, Northern California Chapter Meeting, Sunnyvale, California. (April 6, 2005) (Invited Luncheon Speaker)*

17. *"Nonstructural Earthquake Hazard Mitigation", Certified Emergency Manager Lecture Series II, City of San Jose, San Jose, California. (February 24, 2005) (Invited)*

18. *"Nonstructural Hazard Mitigation", Symposium on Best Practices in Risk Reduction for Colleges and Universities, University of Washington, Seattle. (January 27-28, 2005)*

19. *"Pb-Free Solders in Microelectronic Assembly", GEM Electronics (Shanghai) Co., Ltd., Shanghai, China. (July 28, 2004) (Invited)*

20. *"Sn-Whiskers: Driving Force and Growth Mechanisms", GEM Electronics (Shanghai) Co., Ltd., Shanghai, China. (July 29, 2004) (Invited)*

21. *"Developing Collaborative Approaches for Disaster Mitigation", Shizuoka NPO International Forum, Hamamatsu, Japan. (June 19-20, 2004) (Invited)*

22. *"Mitigating Disasters", US-Japan Disaster Reduction Forum, Crisis and Environment Management Policy Institute, Tokyo, Japan. (June 17, 2004) (Invited)*

23. *"The Collaborative for Disaster Mitigation at San Jose State University", Forum on Emergency Management, Ministry of Land, Infrastructure and Transport (MLIT), Sapporo, Japan. (June 16, 2004) (Invited)*

24. *"Mitigating Natural Hazards", Disaster Resistant California 2004 Conference, Sacramento, California. (May 3, 2004) (Invited Keynote Address).*

25. *"Biomedical Devices and Biomedical Implants", Symposium on Leading Technologies, College of Engineering, San Jose State University, February 26, 2004. (Invited)*

26. *"Natural Disaster Reduction",* Forum on Sustainable Development, Asian Civil Engineering Coordinating Council, Taipei, Taiwan, December 4, 2003. (Invited)

27. *"Protecting Laboratory Equipment by Implementing Nonstructural Hazard Mitigation,"* Seismic Design, Retrofit and Performance of Nonstructural Components in Critical Facilities, ATC-29-2, Applied Technology Council, Redwood City, California, October 23, 2003.

28. *"The Critical Surface Tension of 316L Stainless Steel: Implications for Stent Thrombogenicity",* ASM Materials and Processes for Medical Devices Conference, ASM International, Anaheim, California, September 8-10, 2003.

29. *"Microdevice Packaging for Biomedical Applications", Symposium on Package Reliability Issues and Challenges, Microelectronic Packaging and Test Engineering Council, Sunnyvale, California. August 28, 2003. (Invited)*

30. *"Effect of Surface Treatment on Performance of Biomedical Implants", Edwards Lifesciences LLC, Irvine, California, August 12, 2003. (Invited)*

31. "*Disaster Mitigation – An Overview*", Western Athletic Conference Academic Alliance Symposium, San Jose, California, June 6, 2003.

32. "*Understanding and Minimizing Tin Whiskers – A Review of the Literature*," Semiconductor Assembly Council, San Jose, California, June 4, 2003. (*Together with Qian Sun*.)

33. *"Development of Graduate Level Course on Packaging of Photonic and Optoelectronic Devices,"* 53rd Electronic Components and Technology Conference, IEEE-CPMT, New Orleans, May 26, 2003.

34. *"Effect of the Kobe Earthquake on Manufacturing Industries"*, Business Continuity Workshop, Semiconductor Equipment and Materials Institute, San Jose, California, March 19, 2003. (Invited).

35. *"Utilization of Pb-free solders in MEMS Packaging"*, Symposium on Reliability, Testing, and Characterization of MEMS/MOEMS, SPIE, January 29, 2003. (Invited)

36. "*The Kobe Earthquake and its Effects on Manufacturing Industries*," Business Continuity Planning Conference – III, Applied Materials, Inc., Santa Clara, California, November 20, 2002. (Invited)

37. "*The Collaborative Approach to Disaster Mitigation*," San Jose North Rotary Club, San Jose, California, October 18, 2002. (Invited)

38. "*Utilization of Pb-Free Solders in Microelectronics*," Metallurgical and Materials Engineering Department, University of Nevada, Reno, Nevada, September 27, 2002. (Invited)

39. "*Translations and Communications*," California Seismic Safety Commission, Sacramento, California, September 12, 2002. (Invited)

40. "*Nonstructural Hazard Mitigation Retrofit of an Engineering Laboratory at San Jose State University*," Seventh National Conference on Earthquake Engineering, Boston, Massachusetts, July 2002.

41. "*Optoelectronics Packaging Education at San Jose State University*," 2nd Annual IEEE Photonic Devices and Systems Packaging Symposium, Stanford, California, July 2002.

42. "*Workshop on Nonstructural Hazard Mitigation*," Fires, Floods and Faults Conference - III, CDM, San Jose, California, April 29, 2002. (Invited)

43. "*Optoelectronic Packaging Education at San Jose State University*," Packaging, Assembly & Test in Optoelectronics, MEPTEC, Sunnyvale, California, April 4, 2002. (Invited)

44. "*Cost Effectiveness of Hazard Mitigation*," California Seismic Safety Commission, Sacramento, California, February 14, 2002. (Invited)

45. "*Effects of the Kobe Earthquake on Manufacturing Industries*," San Ramon Valley Rotary Club, San Ramon, California, January 9, 2002. (Invited)

46. "*Nonstructural Hazard Mitigation*," Business Continuity Planning - II, CDM, Sunnyvale, California, November 28, 2001. (Invited)

47. "*Fractographic Analysis in Strength Testing of Silicon Chips*," American Ceramic Society Northern California Section Meeting, Davis, California, November 15, 2001. (Invited)

48. "*Engineering Aspects of Surfaces and Interfaces*," Seminar Series in Surface Technology, Department of Applied Sciences, University of Arkansas at Little Rock, October 26, 2001. (Invited).

49. "*Intermetallic Compound Formation in Pb-free Solder Alloy Systems*," Third Pb-Free Solders Implementation Summit, MEPTEC, Sunnyvale, California, August 30, 2001. (Invited)

50. "*Public-Private Partnerships For Hazard Mitigation*," Disaster Resistant California 2001 Conference, Sacramento, California, June 19, 2001. (Invited)

51. "*The Collaborative Approach: Creating the Collaborative for Disaster Mitigation at SJSU*," Joint meeting of the California Emergency Services Association and Business Recovery Managers Association, Dublin, California, May 31, 2001. (Invited)

52. "*Earthquake Hazards and Emergency Management*," Disaster Information and Preparedness Center, Shizuoka Topical Symposium, Shizuoka, Japan, March 2, 2001. (Invited)

53. "*Post-Disaster Information and Communications*," Science and Technology Agency Symposium, Tokyo, Japan, March 1, 2001. (Invited)

54. "*Corporate Earthquake Programs*," CTI Engineering Co., Ltd., Tokyo, Japan. February 26, 2001. (Invited)

55. "*Lead-Free Solders: Overview of Issues*," MEPTEC Lead-Free Solders Summit, San Jose, California, January 10, 2001. (Invited)

56. "*The Kobe Earthquake's Economic Effects* ," Sunnyvale Rotary Club, Sunnyvale, California, September 24, 2000. (Invited)

57. "*Sintered Architectural Glass Tiles from Recycled Glass*," 20th International Association of Packaging Research Institutes Symposium, San Jose, California, June 15, 2000.

58. "*Microelectronic Encapsulation: Polymer Usage and Issues*," Golden Gate Polymer Forum, Mountain View, California, June 5, 2000. (Invited)

59. "*Effects of the Kobe Earthquake on Businesses*," Fires, Floods & Faults Symposium, Silicon Valley Manufacturing Group, San Jose, California, May 19, 2000. (Invited)

60. "*Materials Issues in Microelectronic Packaging*," ASM International, Golden Gate Chapter, Walnut Creek, California, May 10, 2000. (Invited)

61. "*Hazardous Materials and Chemical Incidents during the Hanshin Awaji Earthquake*," Hyogo Prefecture Conference, Kobe, Japan, January 12, 2000. (Invited)

62. "*Earthquake Caused Hazmat Incidents: Effects on Response and Recovery* ," 6th US-Japan Workshop on Urban Earthquake Hazards, Kobe, Japan, January 1999.

63. "*The Effects of Earthquakes on Industries* ," California Emergency Services Association Annual Meeting, Knockti Harbor, California, September 26, 1998. (Invited)

64. "*Earthquake Caused Hazardous Materials Incidents and Lessons Learned*," Fourth International Conference on Corporate Earthquake Programs, Shizuoka, Japan, November 12, 1998.

65. "*Earthquake Damage and Hazard Mitigation for Manufacturing Industries*," California Emergency Services Association Annual Meeting, Konockti Harbor, California, September 24, 1998. (Invited)

66. "*Effect of the Hanshin-Awaji Earthquake on Manufacturing Industries*," Sixth National Conference on Earthquake Engineering, Seattle, Washington, EERI, June 2, 1998.

67. "*Earthquake Emergency Preparedness in California*," The University of Shizuoka, Shizuoka, Japan, May 8, 1998. (Invited)

68. "*Effect of The Kobe Earthquake on Manufacturing Industries*," The California Seismic Safety Commission, San Jose, April 9, 1998. (Invited)

69. "*Effect of Earthquakes on South Bay Businesses*," HAZMACON '98, Association of Bay Area Governments, Santa Clara, March 31, 1998. (Invited)

70. "*Earthquake Caused Hazardous Materials Incidents at Educational Facilities*," Applied Technology Council ATC 29-1, San Francisco, California, January 22, 1998.

71. "*Occurrence of Hazardous Materials Incidents during the Northridge Earthquake of January 17, 1994*," Northridge Earthquake Research Conference, CUREe, Los Angeles, California, August 21, 1997.

72. "*Microelectronic Packaging Curriculum Development at San Jose State University*", 47th IEEE Electronic Components and Technology Conference, San Jose, California, May 18-21, 1997.

73. "*Earthquakes and Chemicals*", Ninth Annual Statewide California Association of Emergency Responders Conference, South San Francisco, California, May 7, 1997. (Invited Keynote Address)

74. "*Nonstructural Earthquake Hazard Mitigation*", Kaiser Permanente Disaster Preparedness and Safety Conference, Universal City, California, April 8, 1997. (Invited)

75. "*Effect of Flux Type and Surface Coating on the Wetting Force between Copper and Eutectic Pb-Sn Solder*", Symposium on Design and Reliability of Solders and Interconnects, TMS Annual Meeting, Orlando, Florida, February 12, 1997. (Invited)

76. "*Earthquake Hazards and Emergency Management - Focus on Chemical and Nonstructural Hazards*", Disaster Reduction Seminar Series - Number 2, Sponsored by Ministry of Construction, Sendai, Japan, January 20, 1997. (Invited)

77. "*Great Expectations for Kobe - Implementing Lessons Learned*", Kobe Forum of the International Disaster Symposium, Sponsored by Tokyo Metropolitan Government, Kobe, Japan, January 16, 1997. (Invited Keynote Address)

78. "*Use of Phase Diagrams in Board Level Soldering Operations*", Solectron Corporation, Advanced Manufacturing Division, Milpitas, California, December 20, 1996. (Invited)

79. "*NiTi Shape Memory Alloys: Effects of Surface Treatment on Surface Chemistry*", 32nd American Chemical Society Western Regional Meeting, San Francisco, October 31, 1996. (Together with S. Trigwell, R. D. Hayden, and A. C. Greene)

80. *"Manufactured Products from Recycled Glass"*, Northern California Section of The American Ceramic Society, San Jose, California, October 16, 1996. (Invited)

81. *"Reducing the Risk of Earthquake Damage to Hospitals"*, California Healthcare Safety Association, Sacramento, California, September 24, 1996. (Invited)

82. "*Earthquake Hazard Mitigation*", Disaster Preparedness Seminar for Health Care Facilities, Los Angeles County Department of Health Services, Alhambra, California, September 12, 1996. (Invited)

83. "*Corrosion of Magnetic Recording Media*", Akashic Memories Corporation, San Jose, California, August 27, 1996. (Invited)

84. *"Fluxless Soldering"*, Solectron Technical Center, Solectron Corporation, Milpitas, California, August 21, 1996. (Invited)

85. *"Earthquake Caused Equipment Damage"*, Hewlett Packard California Analytical Division Monthly Safety Seminar, Palo Alto, July 16, 1996. (Invited)

86. *"Developing Recycling Curriculum"*, California Resource Recovery Association, 20th Annual Meeting, Newport Beach, California. June 16, 1996. (Invited)

87. *"Design for the Environment"*, California Resource Recovery Association, 20th Annual Meeting, Newport Beach, California. June 17, 1996. (Invited)

88. *"Corporate Earthquake Preparedness"*, Disaster Preparedness and Information Center, Shizuoka Prefecture, Special Seminar Series, Shizuoka, Japan, May 24, 1996. (Invited)

89. *"Earthquake Preparedness in California"*, Shizuoka Prefectural University, Emergency Preparedness Lecture Series, Shizuoka, Japan, May 23, 1996. (Invited)

90. *"Earthquake Hazard Mitigation for Manufacturing Industries"*, Osaka Science and Technology Center Lecture Series, Osaka, Japan, May 22, 1996. (Invited)

91. *"Japan and USA as seen through Earthquake Programs"*, Osaka Civil Engineering Works Foundation Seminar, Osaka, Japan, May 20, 1996. (Invited)

92. *"Public and Private Sector Cooperation in Crisis Management"*, Teleport '96 Conference, Tokyo, Japan, May 15, 1996. (Invited)

93. *"Developing Industry-Academia Partnerships"*, Society of Research Administrators, Western Regional Annual Meeting, Lake Tahoe, California, April 15, 1996.

94. *"Materials Aspects of Earthquake Induced Damage"*, ASM International, New Jersey Chapter, Amboy, New Jersey, March 29, 1996. (Invited)

95. *"Occurrence of Hazardous Materials Incidents and Fires during The Kobe Earthquake"*, Industrial Emergency Council Annual Meeting, San Carlos, California, May 9, 1995. (Invited)

96. *"Effect of the Kobe Earthquake on Industries and Businesses"*, Southern California Emergency Services Special Symposium on The Kobe Earthquake, Santa Monica, California, April 4, 1995. (Invited)

97. *"Occurrence of Hazardous Materials Problems during Earthquakes"*, Earthquake Preparedness for Hospitals Seminar, Hospital Council of Northern California, San Jose, California, January 24, 1995. (Invited)

98. *"Future Directions in Microelectronic Packaging"*, Invited Panel Member at Fabless Semiconductor Association's monthly meeting - San Jose, California, December 6, 1994. (Invited)

99. *"Processing-Properties Relationships in High-Lead Solders"*, Sixth Annual Research Review, Colleges of Engineering & Science, San Jose State University, San Jose, California, November 16, 1994.

100. *"Encapsulation and Packaging of Microelectronic Devices"*, Bank Industry Malaysia Seminar Series, Kuala Lumpur, Malaysia, August 18, 1994. (Invited)

101. *"The Northridge Earthquake: Damage Patterns and Chemical Incidents"*, Special presentation sponsored by the Shizuoka Prefectural Government, Shizuoka, Tokyo, July 30, 1994. (Invited)

102. *"Chemical and Hazardous Materials Incidents during the Northridge Earthquake"*, Japan Information Society Seminar Series, Tokyo, Japan, July 28, 1994. (Invited)

103. *"Recycled Glass: Development of Market Potential"*, Pacific Recyclers' Exposition, Association of Bay Area Governments, San Jose, California, March 30, 1994. (Invited)

104. *"Nonstructural Hazard Mitigation"*, 1994 Hospital Disaster Management Conference, Hospital Council of Southern California, Los Angeles, March 23, 1994. (Invited)

105. *"Earthquake Caused Chemical Incidents"*, Second US-Japan Conference on Corporate Earthquake Programs, Tokyo, Japan, November 8-10, 1993.

106. *"Modeling of Fusion Enthalpy of Aqueous Solutions"*, Fifth Annual Research Review, Colleges of Engineering & Science, San Jose State University, San Jose, California, October 27, 1993.

107. *"Evaluation of Thermal Shock Test Methods for Ceramic Packages"*, 8th Electronic Materials & Processes Conference, ASM International, San Jose, California, August 1993.

108. *"Solder Wicking in Surface Mount Vapor Phase Reflow Processes"*, 8th Electronic Materials & Processes Conference, ASM International, San Jose, California, August 1993.

109. *"Role of CuxSny Intermetallics in the Reliability of Controlled Collapsed Chip Connection (C4)"*, 8th Electronic Materials & Processes Conference, ASM International, San Jose, California, August 1993.

110. *"Nonstructural Hazard Mitigation for Schools"*, School Sites: Becoming Prepared for Earthquakes, Sponsored by City of San Jose, October 6, 1992. (Invited)

111. *"Fusible Heat Sink Materials: Evaluation of Alternate Candidates"*, 22nd International Conference on Environmental Systems, Seattle, Washington, July 13-16, 1992.

112. *"Intermetallic Compound Formation in Flip Chip Bonding"*, Third Annual Symposium on Current Issues in Microelectronic Packaging, San Jose State University, San Jose, California, June 18-19, 1992. (Invited)

113. *"Corrosion Behavior of Condenser Tube Materials at the Geysers Power Plant: A Status Report"*, American Electroplaters & Surface Finishers Society, Santa Clara Valley Branch, Monthly Meeting, May 27, 1992, Santa Clara, California. (Invited)

114. *"Intermetallic Compound Formation in the Au-Cu-Sn System"*, Seminar presented at VLSI Technology, Inc., San Jose, California, May 14, 1992. (Invited)

115. *"Nonstructural Hazard Mitigation, Risk Management, Cost Benefit Analysis & Loss Prevention Techniques and Basis for Evacuation Decision"*, Earthquake Preparedness Symposium for Hospitals, Sponsored by Office of Emergency Services - Region VI, April 23-24, 1992, Palm Springs, California. (Invited)

116. *"Earthquakes and Hazardous Materials Releases"*, Earthquake Preparedness for Hospitals, Sponsored by Hospital Council of Northern and Central California, April 1-2, 1992, Oakland, California. (Invited)

117. *"Nonstructural Hazard Mitigation: Risk Assessment, Cost Benefit Analysis and Loss Prevention Techniques"*, Symposium on Earthquake Preparedness for Health Care Facilities, Sponsored by County of Orange, March 11-12, 1992, Costa Mesa, California. (Invited)

118. *"Microelectronic Packaging: The Formulation of an Academic Curriculum at SJSU"*, Invited Keynote Address at the Fourth International Tape Automated Bonding Symposium, February 17, 1992, San Jose, California. (Invited)

119. *"Earthquake Education at the Elementary School Level"*, Poster presentation at the Earthquake Engineering Research Institute Annual Meeting, February 5-8, 1992, San Francisco, California.

120. *"Aluminum Nitride: A Commodity Study of a Synthetic Compound"*, 44th Pacific Coast Regional Meeting of the American Ceramic Society, October 31-November 2, 1991, San Diego, California.

121. *"Hazardous Materials Incidents Related to the 1989 Loma Prieta Earthquake"*, Santa Clara County Emergency Managers Association, Monthly Meeting, September 19, 1991, Los Gatos, California. (Invited)

122. *"Materials Selection Parameters for Ceramic Substrates: Property Processing Relationships"*, 4th Electronic Materials & Processing Conference, Montreal, Canada, August 19-22, 1991.

123. *"Fusible Heat Sink Materials: An Identification of Alternate Candidates"*, 21st International Conference on Environmental Systems, San Francisco, California, July 15-18, 1991.

124. *"Ceramics of Low Flaw Content: Trimodal Powder Distribution in Sintering"*, Seminar presented at Raychem Corporation, Menlo Park, California, June 1991. (Invited)

125. *"Aluminum Nitride: An Engineering Commodity Study"*, Second Annual Symposium on Current Issues in Microelectronic Packaging, San Jose State University, May 18-19, 1991, San Jose, California. (Invited)

126. *"Seismic Safety from an International Perspective"*, Seismic Controls Symposium, Organized by The Santa Clara County Fire Chiefs Association, November 1, 1990, San Jose, California. (Invited)

127. *"Effect of CO2 on the Processing of Y-Ba-Cu-O Superconductors"*, Second Annual Review of Engineering Research, San Jose State University, October 25, 1990, San Jose, California.

128. *"Effect of Porosity on the Properties of Ceramic Substrates"*, Symposium on Current Materials Issues in Microelectronic Packaging, San Jose State University, San Jose, California, May 1990. (Invited)

129. *"Earthquake Hazard Reduction: Hazardous Materials and Glass Problems"*, First Annual Review of Engineering Research, San Jose State University, San Jose, California, October 1989.

130. *"Environmental Pollution: Is Recycling the Answer?"*, Invited presentation at the Tenth Caribbean Insurance Conference, Antigua, West Indies. September 1989. (Invited)

Guna Selvaduray – Exeternally Funded Research Grants and Contracts

Project Title	**Awarding Agency**	**Performance Period**	**Amount**
Post-Earthquake Economic Recovery	California Seismic Safety Commission	July 2012 - March 2013	$49,500
Characterization of tissues	American Medical Systems	Jan 2012 - Dec 2012	$18,500
Development of Wire Fatigue Tester	CSUPERB	March 2008 – March 2010	$14,960
Barriers to Earthquake Hazard Mitigation	City of San Jose	Sept 15, 2008 - Oct 31, 2009	$36,000
Field Act Research Study	California Seismic Safety Commission	March 1, 2008 - Oct, 2009	$348,000
Computer Tomography of Embolisms	Boston Scientific	Oct 1, 2006 – May 31, 2007	$5,000
Development of Biocompatibility	CSUPERB	June 1 – Dec 31, 2006	$14,950

Experiments for Engineering Students			
MMTF Exercise and Training	City of San Jose	May 1 – Aug 31, 2006	$23,433
Spanish Translation of Homeowner's Guide to Earthquake Safety	California Seismic Safety Commission	July 2005 – Dec 2005	$10,000
Disaster Resistant University Grant	Federal Emergency Management Agency	Sept 2004 ~ March 2006	$99,975
Homeowners Guide to Earthquake Safety	California Seismic Safety Commission	Sept 2003 – April 2004	$40,000
Resterilization Techniques for Polycarbonates used in Biomedical Devices	Guidant Corporation	Aug 2003 – May 2004	$5,000
Small Business Hazard Mitigation Guide	Federal Emergency Management Agency	Aug 2003 – Mar 2004	$18,000
Disaster Resistant California 2003 Conference	Federal Emergency Management Agency	Mar 2003 – Aug 2003	$78,000
Process Development for Advanced Magnetic Disk Substrates	Seagate Technologies	Aug 2002 – May 2003	$30,000
Inventory of Soft First Story Multi-Family Dwellings in Santa Clara County	Santa Clara County, Emergency Preparedness Council	Jan 2002 – Sept 2002	$30,000
Alternate Lead Free Alloys	SJSU Foundation	Jan 2001 – Dec 2001	$2,500
Collaborative for Disaster Mitigation Implementation Grant	Federal Emergency Management Agency	July 2000 – June 2002	$330,000
Development of Cost/Benefit Analysis Methodologies for Hazard Mitigation Projects	Federal Emergency Management Agency	July 2000 – June 2002	$160,000
Investigation of Solder Mask Cracking	LSI Logic	July 2000 – Dec 2000	$30,000
Characterization of Glass Substrates for Hard Drive Applications	Seagate Technology	June 2000 – Dec 2000	$15,000
Field Emission Breakdown of High-Voltage Insulation Devices	Communications & Power Industries, Inc.	Sept 99 – Dec 2000	$5,000
Effect of Geometry on Solder Joint Reliability for Leadless Leadframe	National Semiconductor Corporation	Jan 2000 – Dec 2000	$5,000

Packages			
Wire Bond Integrity for Fine Pitch Devices	National Semiconductor Corporation	Jan 99 – Dec 99	$5,000
Screen Printing of Wafer Level Underfill	National Semiconductor Corporation	Jan 99 – Dec 99	$5,000
Computer Modeling of Solder Joint Fatigue Life for μSMD Structures	National Semiconductor Corporation	Jan 99 – Dec 99	$5,000
Utilizing Relational Databases for Materials Properties	WhoWhere, Inc.	July 98 – July 2000	$23,000
Effect of Processing Parameters on Strength of Silicon Dies	LSI Logic, Inc.	Oct 97 - Mar 98	$42,000
NSF Instrumentation and Laboratory Improvement Program in Microprocessor and Intelligent Control Applications (*Co-PI)*	National Science Foundation	Jun 97 - May 99	$38,770
Effect of Thermal Processing on Microstructure of Ball Grid Arrays	Solectron Corporation	Jun 97 - Dec 97	$30,000
Packaging of Microelectronic Devices: Short Courses for Undergraduate Faculty Enhancement	National Science Foundation	Jan 97 - Dec 98	$99,721
Tingle Table II Construction (*Co-PI)*	Franchise Tax Board	Jun 96 - Jun 97	$55,100
Development of Processing Techniques for Advanced Thermal Protection Materials	NASA-Ames Research Center, Thermal Protection Materials Branch	Jun 93 - May 98	$391,171
Magnetic Recording Head Contamination Research	Akashic Memories Corporation	Feb 96 - Aug 97	$46,422
Fluxless Soldering for Microelectronic Packages	Solectron Corporation	Feb 96 - Aug 96	$25,000
Advanced Stent Development	Advanced Cardiovascular Systems, Inc.	Dec 95 - Aug 96	$16,720
Thermal Conductivity of Interlaced Two Phase Systems for Fusible Heat	NASA-Ames, Life Sciences Division	June 95 - May 96	$40,000

Sink Applications			
Recyclability of Multi-Material Durable Goods	City of San Jose	Oct 95 - June 96	$24,495
Tingle Table II Construction (*Co-Principal Investigator*)	Franchise Tax Board	Aug 94 - Jul 95	$47,553
Hazardous Materials Incidents During Earthquakes: Japan's Experience and Solutions	National Science Foundation	Aug 93 - Jan 96	$142,657
Earthquake Caused Hazardous Materials Incidents	U.S. Department of Interior, U.S. Geological Survey	Feb 94 - Jul 95	$37,552
Nonstructural Earthquake Hazard Mitigation	Emergency Medical Services Agency, California	Mar 93 - Mar 95	$30,000
Recycled Glass: Process Development for Sintered Glass Architectural Tiles	City of San Jose	Jul 94 - Jul 95	$10,000
Recycled Glass: Development of Market Potential	City of San Jose	Jul 93 - Jul 94	$24,508
Extraction Table Design and Prototype Development (*Co-Principal Investigator*)	Franchise Tax Board	Oct 92 - May 93	$58,564
Sol-gel Synthesis of Borosilicate Glass	ISHM Educational Foundation	Sep 92 - Aug 93	$6,000
Development of Guide Wires for Angioplasty	Advanced Cardio-vascular Systems, Inc.	Nov 92 - Feb 94	$24,936
Nonstructural Earthquake Hazard Mitigation	California Emergency Medical Services Agency	June 92 - May 93	$23,743
Signal Speed Comparison of Flip-Chip and Wire-Bonded Multichip Modules	Lockheed Corporation	Jan 92 - Jul 92	$5,000
Corrosion Evaluation of Heat Exchanger Tubing	Pacific Gas & Electric Company	Jun 91 - Dec 92	$25,651
Design and Prototype Construction of Sorting Table (*Co-PI*)	Franchise Tax Board, California	Sep 91 - May 92	$15,000
Earthquake Hazard Mitigation	Cal. Office of Emergency Services	May 91 - Jun 92	$19,000

Corrosion Testing of Condenser Tube Materials at Geysers Power Plant	Pacific Gas & Electric Company	Dec 90 - Dec 92	$73,616
Radio Frequency Vapor Deposition of Diboride Compounds on Ceramic Fibers	NASA-Ames, Thermal Protection Materials Branch	Oct 90 - Dec 91	$20,000
Laboratory Development in Engineering Ceramics	National Science Foundation	Mar 90 - Aug 92	$31,754
TOTAL			**$2,811,751**

Guna Selvaduray – Supervision of B.S. Senior Projects and M.S. Theses & Projects

** indicates winners of the SJSU Student Research Award*

	Student Name	Degree	Thesis/Project Title	External Support	Graduation Date
1	ABTEW, Mulugeta	M.S.	Solder Wicking in Surface Mount Vapor Phase Reflow Soldering	Amdahl Corp	Dec 1993
2	ACHYUTHA, Anitha	M.S.	Determination and Identification of Optimal Characteristics of Radiopaque Markers	Proteus Biomedical	Aug 2008
3	AGARWAL, Indu	M.S.	The Formation of Cu_xSn_y Intermetallic Compounds in Controlled Collapse Chip Connections	Intel Corp	Aug 1994
4	AIHARA, Hokuto	M.S.	Effect of Electropolishing Parameters on Surface Characteristics of C-Cr Alloy L-605		August 2008
5	AMOUKTEH, Katherine	M.S.	Environmental Compliance Tool		May 1997
6	ANDERSON, Dale	M.S.	Effect of Trimodal Particle Size Distribution on Sintering Characteristics of Alumina Powders		May 1997
7	BAJWA, Harjinder	M.S.	Optimization of Solder Paste Volume for Tape Ball Grid Array (TBGA) Packages	Solectron	Dec 1996
8	BALTER, Aliza	B.S.	Modifications to the Alumina Content of a Fibrous Composite Insulation through Ultrafine Particle and Gel Impregnation and Pyrolysis	NASA-Ames	May 1987
9	BAZO, Edin	M.S.	Development of Ni-free Surface Oxide Layer on Nitinol		May 2011
10	BELL, Adam	B.S.	A Study of SiC Oxidation Kinetics in Dry Oxygen		May 1989
11	BIGDELI, Soheil	M.S.	Parameters Affecting Surface	National	Dec 2004

			Resistivity of Microelectronic Interconnects	Semiconductor	
	BHATT, Gopi				
12	BRINDOS, Richard	B.S.	Design and Fabrication of a Contact Angle Measurement System		May 1996
13	BUENO, Henry*	M.S.	Critical Surface Tension of 316L Stainless Steel: Implications for Stent Thrombogenecity	Advanced Stent Technologies	May 2003
14	BULL, Jeffrey	M.S.	Synthesis and Densification of Gel-Derived Powders in the Al_2O_3-B_2O_3-SiO_2 System	NASA-Ames	Dec 1988
15	CALEBOTTA, Gabriel*	M.S.	Synthesis of Ge nanowires using In and Sb Catalysts	NASA-Ames	August 2007
16	CALVERT, George	M.S.	Correlation Method for Determining Solid Surface Tension on a Microscopic Scale		Dec 2009
17	CHANG, Won	M.S.	CSP Drop Test Performance for Different Solder Ball Materials	nVidia Corp	May 2005
	CLARK, Larissa	B.S.			
18	COLLAZZO, Julian	B.S.	Effect of Surface Stresses on Wetting of Copper by Solder		May 1997
	CHERA, Sukhdeep	B.S.			
19	CHUN, Byron	M.S.	Characterization of Nitinol at Cryogenic Temperatures	Boston Scientific	Dec 2009
20	CHUN, Kay Nam	M.S.	Microstructure and Chemistry of Thermal Oxide on Titanium Silicide Thin Films		May 1996
21	CHUNG, Hsiu-Hsin*	M.S.	Effect of Geometry on Solder Joint Reliability of Leadless Leadframe Package	National Semiconductor	May 2003
22	CROOM, Brendan	M.S.	Effect of Laser Welding Parameters on Weld Integrity and Biocompatibility		Dec 2006
23	CRUZ, Minerva*	M.S.	Interfacial Interactions between SAC 305 Pb-free Solder and Coated Cu Substrates	Six Sigma	May 2008
24	CUNNINGTON, Chris	M.S.	Development of fatigue tester for wire specimens		Dec 2011
25	DENEVI, John	B.S.	Effect of Particle Size Distribution on Densification Behavior of Alumina Powders		Dec 1989
26	DESHPANDE, Arundhati	M.S.	Preparation of Embolic Protection Devices for Embolic Characterization	Boston Scientific	Dec 2007
27	DO, Quang	B.S.	Investigation of the Pb-Rich Region of the Cu-Pb-Sn Ternary Phase Diagram		Dec 1992
28	DOLAK, Michael	M.S.	High Voltage Breakdown Characteristics of Cleaned and Non-Cleaned 304L and 304LMC SST Electrodes	CPI, Inc.	May 2003
29	DREXEL, Masao*	M.S.	Effect of Cold Work and Heat Treatment Parameters on Austenite Finish Temperature of Nitinol	NDC Corp	May 2006

30	DUNLAP, Derek	M.S.	Characterization of Anodized Coatings for High-Purity Environments	Lam Research Corporation	December 2004
31	DUQUE, Jorge	B.S.	Development of Characterization Methods for Coconut Shells		May 2008
32	ESPINOSA, Christian	B.S.	Development of Coconut Fiber Reinforced Composite for Structural Applications		May 2009
33	FOJAS, Paul	M.S.	The Influence of Cold Work on the Wettability of Pb-Free Solders on Copper	SCI Systems	Dec 2002
34	FONG, Hanson	M.S.	Effects of Surface Morphology on the Wetting Behaviors of Electronic Solders		Dec 2000
	FORONDA, Bryan	M.S.			
35	GHULIANI, Neelam	M.S.	Societal Cost Methodology		May 1996
36	GOODSON, Keith	M.S.	Absorption of Moisture on Thin Carbon Films used as Overcoats for Magnetic Rigid Disks	Censtor	Dec 1992
37	GOYER, Sterling	B.S.	Effect of Shatter Resistant Plastic Film on the Fragmentation Characteristics of Glass Panes		May 1989
38	GREWAL, Balroop	M.S.	Sputtered Alumina Film Properties	Hewlett-Packard	Dec 1996
39	GRILEY, Kristine*	B.S.	Thermal Aging Characteristics of Ag-Sn Solders		May 1996
40	GRILEY, Kristine	M.S.	Effect of Sterilization Techniques on Critical Surface Tension of Co-Cr and NiTi	Guidant Corporation	Dec 2005
	GULKOTWAR, Sarita				
41	GUPTA, Ashok	M.S.	Effect of Oxidation on Magnetic and Structural Properties of Terbium Containing Magneto-Optical Thin Films	IBM	Dec 1992
42	HASENKAMP, Erin	M.S.	Effect of Surface Finish on Tonal Qualities of Wind Instruments		May 2003
43	HARWOOD, Veronica	B.S.	Characterization of a Functionally Gradient Biological Material		May 2008
44	HERNANDEZ, Maria	B.S.	Sol-Gel Synthesis of Hydroxyapatite		May 2008
45	IRANITALAB, P.J.	M.S.	Prediction of Ventricular Arrthymias through Evaluation of Ventricular Electrograms	St. Jude Medical	August 2008
46	IVES, Robert	M.S.	An Investigation of Solid State Sintering in Al/Al2O3 Metal Matrix Composites		Dec 1993
47	JAMAL, Fahd	M.S.	In-situ Synthesis of Ceramic Nanoparticles in Liquid Metals		Dec 2006
48	KIM, Robert	M.S.	High Temperature Synthesis of AlN		Aug 1997
49	KUO, Ming-chun	M.S.	Effect of Microblasting on Surface Characteristics of NiTi		Dec 2008
50	KWON, Young-	M.S.	Preparation and Characterization of		Aug 1996

	Min		Sol-gel derived SiO_2-TiO_2 Thin Films		
51	LANGE, Mary Beth	M.S.	Characterization of Ceramic Integrated Circuit Packaging Materials	Hewlett Packard	Dec 1992
52	Le, John	M.S.	Development of Inhalation Profile Simulator	Novartis	May, 2011
53	Lee, Chongju	M.S.	Development of Inhalation Profile Simulator	Novartis	May, 2011
54	LEE, Wayne Wong	M.S.	Solder Joint Fatigue Modeling	National Semiconductor	December 2002
55	LEE, Winnie	B.S.	Whisker Growth on Tin Substrates		May 2003
56	LEOPOLD, Eric	M.S.	Property-Processing Relationships in Linear-Low-Density and High-Density Polyethylene	Advanced Cardiovascular Systems	May 1995
57	LEUNG, Dennis	M.S.	Effect of Design Factors on Microvia Reliability	Xilinx	Dec 2007
58	LI, Yanan	M.S.	Mechanism of Magnetic Record Head Contamination	Akashic Memories	Dec 1997
59	LIN, Roger	M.S.	Effect of Aging Conditions on Fracture Strength of SAC and Pb-Sn Solders		Dec 2009
60	MARTINEZ, Lisa*	B.S.	Investigation of Alumina Dissolution in Borosilicate Glass	NASA-Ames	May 1989
	MADAMBA, Daniel				
61	McCOY, Brian	M.S.	Hydrogen Plasma Surface Modification of Polytetrafluoroethylene		May 2007
62	McREYNOLDS, Robert	M.S.	Stress Corrosion Cracking of Metallic Alloys for Implantable Medical Devices		Dec 2005
63	McWANE, Odell	M.S.	Integreity of Rewelded Thin Wall 316L Stainless Steel Tubes		May 1994
64	MOHAMMED, Anwar, A.*	M.S.	Evaluating Thermally Conductive Epoxies for High Power Applications	UltraRF	May 2002
65	MOSKITO, John*	M.S.	Modeling of Thermal Conductivity of Two-Phase Materials Systems	NASA-Ames	Aug 1998
66	NG, James	B.S.	Effect of Plastic Film on Fracture Characteristics of Window Glass	CDM	May 2003
67	NORDAHL, Robert	M.S.	Microbiologically Induced Corrosion		May 1996
68	PLUMMER, Jefferson	B.S.	Sol-Gel Synthesis of Hydroxyapatite		May 2008
69	POVEROMO, Scott	M.S.	Effect of Strain on the Electrical Resistivity of Carbon filled Elastomers		Aug 2009
70	QUENTIN, Christopher	M.S.	Development and Characterization of a Wafer Level Underfill Application Process	National Semiconductor	Dec 2000
71	RAVISHANKAR, Mandalagiri	M.S.	Development of a Computer Integrated Manufacturing Laboratory at San Jose State University		Jul 1990

72	REZA, Shayeri	M.S.	Characterization of Nitinol at Cryogenic Temperatures	Boston Scientific	Dec 2009
73	REZIN, Marc	B.S.	RF Sputter Deposition of ZrB2 Oxidation Protective Thermal Barriers	NASA-Ames	May 1991
74	REZIN, Marc	M.S.	Reusable Surface Insulation Blanket Flight Test Qualification for Reusable Launch Vehicles	NASA-Ames	Dec 2003
75	RODRIGUES, Brian*	M.S.	Effect of Alloying Elements on Electrical Conductivity of Single Phase Alloys		May 1997
76	ROOEIN, Mazdak	M.S.	Investigation of the Structure-Property-Processing Relationships of 316L Stainless Steel hypotubing	Advanced Cardiovascular Systems	Aug 1995
77	ROWLAND, Dan	B.S.	Iosipescu Shear Testing of Alumina/Aluminum Metal Matrix Composites	FMC Corporation	May 1989
	SALATHURAJ, Monica				
78	SASTRY, Shankar	M.S.	Electrical and Mechanical Characterization of Hydrogenated Carbon Films for Rigid Disk Media	Connor Peripherals	Sept 1993
79	SEBEK, Nicole	M.S.	Mechanical Properties and Complexities of Sn-Ag-Cu Solder		Dec 2007
80	SERRANO, Brenda*	M.S.	Effect of Processing Parameters on the Strength of Silicon Dies	LSI Logic	Aug 1998
81	SHEET, Lubab	B.S.	Aluminum Nitride: A Commodity Study of a Synthetic Compound		May 1991
	SHERER, Christine	B.S.			
82	SHIH, Roger	M.S.	Investigation of the Zinc-Iron Potential Reversal and its Application to Corrosion in Domestic Hot Water Systems		Dec 1989
83	SHINGAL, Atul	M.S.	Reliability Issues and Vibration Testing of Wire Bonds in Ceramic Microelectronic Packaging	National Semiconductor	May 1993
84	SONG, Jae-Eun	M.S.	Wire Bond Integrity for Fine Pitch Devices	National Semiconductor	June 2000
85	STREIB, Ken	M.S.	Development of Advanced Guidewires for Angioplasty	Advanced Cardiovascular Systems	Dec 1995
86	SULAYMONOV, Jamshid	M.S.	Effect of Extent of Cure on the Glass Transition Temperature of Epoxy Resins		May 2004
87	TAHERI, Ramtin	M.S.	Investigation of Bond Pad Corrosion of Plastic Packaged EEPROM Devices	Read-Rite	Nov 1993
88	TATEVOSIAN, Caroline	B.S.	Sandwiched Ceramics using Tape Cast Adhesives	NASA-Ames	May 1991
89	TOJIMA, Ken	B.S.	Wetting Characteristics of Pb-Free Solders	SCI Systems	May 1999
90	TRIGWELL, Steve*	M.S.	Corrosion Behavior of Welded Stainless Steel Tubing	Intel	Aug 1998

91	TUN, Zaya	M.S.	Fretting Corrosion of Briaded Nitinol Stents		May 2011
92	VERMILLION, Ray	M.S.	The Relationship between the Microstructure and Mechanical Properties of 97Pb-3Sn, 95Pb-5Sn and 93Pb-7Sn Alloys		June 1995
93	VIVARES, Valerie	M.S.	Effect of Carbon Overcoat on Corrosion Characteristics of Thin Film Magnetic Media	Akashic Memories	Aug 1998
94	Woo, Kee-Tsz	M.S.	Fretting Corrosion of Briaded Nitinol Stents		May 2011
	WONG, Travis				
95	WU, Cheng-Kuan	M.S.	Modeling and Measurement of Solid-Liquid Transformation Enthalpy for Fusible Heat Sink Applications	NASA-Ames	Aug 1993
96	XU, Danhua*	M.S.	Carbon Diffusion in $YBa_2Cu_3O_{7-\square}$ Polycrystalline Superconductors	Argonne National Laboratories	Dec 1994
97	ZOU, Xiaonong	M.S.	RF Sputtering of $ZrBr_2$ Thermal Barrier Coatings	NASA-Ames	Dec 1993
98	ZHANG, Cunzheng	M.S.	Effect of CO_2 Partial Pressure on Processing of 123 Superconducting Compounds	Argonne National Laboratories	Dec 1990
99	ZHANG, Siming	M.S.	Fretting Corrosion of Braided Nitinol Stents		May 2011
100	ZHENG, Ying	M.S.	Thickness Measurement of Diamond-Like Carbon by ESCA and AES	Seagate Technologies	Dec 2003