Curriculum Vitae

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   Post-doctoral Research Associate, Harvard University, 1967-87
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5. Completed research:

a. Books edited

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15. SMOOTHING DURING ION-ASSISTED GROWTH BY *TRANSIENT* ION BEAM-INDUCED DEFECTS, B.K. Kellerman, E. Chason, J.A. Floro, E. Chason, S.T. Picraux and J.M. White, Mat. Res. Soc. Symp. Proc. 388, 349 (1995).

16. SPUTTER ROUGHENING INSTABILITY ON THE Ge (001) SURFACE: ENERGY AND FLUX DEPENDENCE, E. Chason, B.K. Kellerman and T.M. Mayer, Mat. Res. Soc. Symp. Proc. 396, 143 (1996).

17. REAL-TIME MEASUREMENT OF EPILAYER STRAIN USING A SIMPLIFIED WAFER CURVATURE TECHNIQUE, J.A. Floro, E. Chason and S.R. Lee, Mat. Res. Soc. Symp. Proc. 396, 859 (1996).

18. ENERGETIC IONS IN SEMICONDUCTOR PROCESSING: SUMMARY OF A DOE PANEL STUDY, S.T. Picraux, E. Chason, J.M. Poate, J.O. Borland, M.I. Current, T. Diaz de la Rubia, D.J. Eaglesham, O.W. Holland, M.E. Law, C.W. Magee, J.W. Mayer, J. Melngailis and A.F. Tasch, Mater. Res. Symp. Proc. 396, 859 (1996).

19. EVOLUTION OF SURFACE ROUGHNESS DURING CVD GROWTH, E. Chason, T.M. Mayer, D.P. Adams, H. Huang, T.Diaz de la Rubia, G. Gilmer, B. K. Kellerman , Mater. Res. Symp. Proc. 440, 157 (1997).

20. MEASUREMENTS OF STRESS EVOLUTION DURING THIN FILM GROWTH, E. Chason and J.A. Floro, Mater. Res. Symp. Proc. 428, 499 (1996).

21. A MODEL AND SIMULATION OF THE DECAY OF ISOLATED NANOSCALE SURFACE FEATURES, J. G. McLean, B. Krishnamachari, E. Chason in Surface diffusion : atomistic and collective processes, ed. M.C. Tringides (New York : Plenum Press, 1997) pp. 377-388.

22. A LASER-BASED THIN-FILM GROWTH MONITOR, C. Taylor, D. Barlett, E. Chason and J. Floro, The Industrial Physicist 4, 25 (1998).

23. IN SITU MEASUREMENTS OF STRESS RELAXATION DURING STRAINED LAYER HETEROEPITAXY, E. Chason, J. Yin, K. Tetz, R. Beresford, L.B. Freund, M. Ujue Gonzalez, J.A. Floro, Materials Research Society Symp. Proc. Vol 583, 167 (2000)

24. A STUDY OF THE CRYSTALLIZATION OF AMORPHOUS INDIUM (TIN) OXIDE, D.C. Paine, E. Chason, E. Chen, D. Sparacin, H.-Y. Yeom, Materials Research Society Symp. Proc. 623, (2000).

25. A STRUCTURAL STUDY OF THE AMORPHOUS TO CRYSTALLINE TRANSFORMATION IN IN_2O_3 THIN FILMS, B.Yaglioglu, H.-Y. Yeom, E. Chason, D. C. Paine, Mat. Res. Symp. Proc., submitted (2002)

26. STRESS EVOLUTION AND WHISKER FORMATION IN TIN COATINGS ON COPPER, L. Kabakian, E. Chason, S. Kumar, Proceedings of GOMACTech 2003 Conference, submitted.

27. OBSERVATION OF ION-INDUCED RIPPLES IN CU(001)**,** Wai Lun Chan, Niravun Pavenayotin, Eric Chason, MRS Symp. Proc. 2003, submitted

28. WHISKER FORMATION IN SN COATINGS ON CU, Eric Chason, Lucine Reinbold and Sharvan Kumar, MRS Symp Proc, 2004

29. TEMPERATURE AND FLUX DEPENDENCE OF ION INDUCED RIPPLES: A WAY TO STUDY DEFECT AND RELAXATION KINETICS DURING ION BOMBARDMENT, Wai Lun Chan, Eric Chason, MRS Symp Proc., 2004

30. DEGRADATION IN SN FILMS DUE TO WHISKER FORMATION, L. Reinbold, E. Chason, N. Jadhav, V. Kelly, P. Holmes, J.W. Shin, W.L. Chan, K.S. Kumar, G. Barr, Mater. Res. Soc. Symp. Proc. Vol. 887, 197 (2006)

31. INEXPENSIVE LARGE-AREA SINGLE CRYSTAL SUBSTRATES PRODUCED BY ELECTROCHEMICAL THIN FILM PROCESSES, A. Standley, J.W. Shin and E. Chason, MRS Bulletin vol. 32, Nov. 2007, p. 895.

32. DOE PANEL REPORT ON BASIC RESEARCH NEEDS FOR MATERIALS UNDER EXTREME ENVIRONMENTS, E. Chason (one of multiple authors), DOE workshop on Materials Under Extreme Environments, in press.

33. THICK BERYLLIUM COATINGS BY MAGNETRON SPUTTERING, Hongwei Xu, Abbas Nikroo, Kelly Youngblood, Kari Moreno, Dan Wu, Tim Fuller, Craig Alford, Jeff Hayes, Andy Detor, Morris Wang, Alex Hamza,Tony van Buuren, Eric Chason, MRS Spring 2011

g. invited lectures:

Conferences:

1. ION BEAM-ASSISTED MBE , E. Chason, J. Y. Tsao, K. M. Horn, D. K. Brice and S. T. Picraux, Fall Meeting of the Materials Research Society, Boston, MA, 11/27- 12/3/89.

2. ION-BEAM ENHANCED EPITAXY , E. Chason, J. Y. Tsao, K. M. Horn, D. K. Brice, P. Bedrossian and S. T. Picraux, 1990 Gordon Conference on Particle-Solid Interaction, Plymouth, NH, 7/9-13/90.

3. TEMPERATURE-DEPENDENCE OF EPITAXIAL GROWTH MODES, E. Chason, Electro-Chemical Society Meeting, Ontario, Canada, 10/11-16/92.

4. USES OF MONTE CARLO COMPUTER SIMULATIONS IN UNDERSTANDING EPITAXIAL GROWTH AND ION BOMBARDMENT OF Si(001), E. Chason, DOE Workshop on Surface Diffusion and Materials Growth, Santa Fe, NM June 1-3, 1992, .

5. ROUGHENING INSTABILITY AND VISCOUS RELAXATION DURING ION SPUTTERING E. Chason, T. M. Mayer and A. J. Howard, Materials Research Society Fall meeting 1993 11/30-12/04, Boston, Mass. SAND93-1447A

6. ROUGHENING INSTABILITY AND ENHANCED SURFACE TRANSPORT ON SPUTTERED SURFACES , E. Chason, APS meeting 3/21-25/94, Pittsburgh, PA. SAND93-4065A.

7. LOW ENERGY ION ENHANCEMENT OF SURFACE PROCESSES, E. Chason, DOE Council on Materials Panel Study on New Directions for Ion Beams in Semiconductor Processing, 5/4-7/95, Santa Fe, NM.

8. X-RAY REFLECTIVITY MEASUREMENTS OF SPUTTER-INDUCED ROUGHENING AND SMOOTHING KINETICS , E. Chason, 12th Int'l Conf. on Ion Beam Analysis, Tempe, AZ, 5/22-24/95.

9. EVOLUTION OF SURFACE MORPHOLOGY DURING ION SPUTTERING AND CVD GROWTH, Gordon Conf. on Epitaxial Growth, June 1995

10. ROUGHENING INSTABILITY AND SURFACE EVOLUTION DURING ION SPUTTERING , E. Chason, 1996 Gordon Conference on Particle Solid Interactions, Plymouth, NH, 7/21-25/96.

11. *IN SITU* X-RAY REFLECTIVITY MEASUREMENTS OF THIN FILM PROCESSING , E. Chason, CHESS User's Meeting at Cornell University, Ithaca, NY, 6/18-19/96.

12. MEASUREMENTS AND SIMULATIONS OF BEAM-ENHANCED EPITAXIAL GROWTH PROCESSES, E. Chason and J. A. Floro, TMS Conference, Orlando, FL, 2/9-13/97. SAND96-2142A.

13. KINETICS OF GROWTH ON SURFACES, E. Chason, J. A. Floro, T. M. Mayer, B. K. Kellerman, and D. P. Adams, 213th National American Chemical Society Meeting, San Francisco, CA, 4/13-17/97. SAND96-3016A .

14. *IN SITU* X-RAY REFLECTIVITY STUDIES OF SURFACE AND THIN FILM EVOLUTION, E. Chason, Workshop on X-Ray Reflectivity at the National Synchrotron Light Source, Brookhaven National Labs in Upton, NY, 5/19/97.

15. EVOLUTION OF STRESS AND MORPHOLOGY IN THIN FILMS, Eric Chason, Jerry Floro, M. Sinclair, R.Q. Hwang, J.A. Hunter, R.D Twesten and L.B. Freund, American Physical Society March Meeting, Los Angeles, 3/16-20/98 .

16. REAL-TIME EVOLUTION OF STRESS AND MORPHOLOGY IN SiGe HETEROEPITAXY, Eric Chason, Jerry Floro, M. Sinclair, R.Q. Hwang, R.D Twesten and L.B. Freund, New Mexico AVS Meeting, 5/19-22/98 .

17. INTERACTION OF STRESS AND MORPHOLOGY IN SIGE HETEROEPITAXY, E. Chason, Jerry Floro, M. Sinclair, and L.B. Freund, Materials Research Society Fall Meeting, Boston, MA 11/30-12/1/98..

18. IN SITU DIAGNOSTICS FOR STUDYING THIN FILMS AND SURFACES DURING PROCESSING, E. Chason, ARO Workshop on Rapid Manufacturing, Vanderbilt U., Nashville, TN, 12/14-16/98.

19. IN SITU X-RAY REFLECTIVITY MEASUREMENTS OF THIN FILM KINETICS, Eric Chason, Materials Research Society, San Francisco, 4/5-9/99

20. DYNAMICS OF PATTERN FORMATION DURING LOW ENERGY ION SPUTTERING, Eric Chason, Gordon Conference on Materials Processes Far from Equilibrium, Plymouth, NH, 7/12-16/99

21. IN SITU MEASUREMENTS OF STRESS RELAXATION DURING STRAINED LAYER HETEROEPITAXY, E. Chason, J. Yin, K. Tetz, R. Beresford, E. Chen, D. Paine, L.B. Freund, J.A. Floro, Materials Research Society Fall Meeting, Boston, MA 11/29-12/3/99

22. A STUDY OF THE CRYSTALLIZATION OF AMORPHOUS INDIUM (TIN) OXIDE, D.C. Paine, E. Chason, E. Chen, D. Sparacin, H.-Y. Yeom, Materials Research Society Spring Meeting, San Francisco, April 2000.

23. PATTERN FORMATION ON SURFACES BY ION IRRADIATION, E. Chason, J. Erlebacher, M.J. Aziz, J.A. Floro and M.B. Sinclair, European MRS meeting, Strasbourg, France, June 2000.

24. REAL-TIME MEASUREMENT OF STRESS AND MORPHOLOGY EVOLUTION IN EPITAXIAL THIN FILMS, E. Chason, Gordon Research Conference on Mechanical Properties of Thin Films, Plymouth, NH, July 2000.

25. *IN SITU* STUDIES OF STRESS AND MORPHOLOGY DURING STRAINED LAYER HETERO-EPITAXY, E. Chason, L.B. Freund and R.J. Beresford, J.A. Floro and M.B. Sinclair, American Association of Crystal Growth and Epitaxy, Vail, CO, August 2000.

26. SPONTANEOUS PATTERN FORMATION DURING LOW ENERGY ION BOMBARDMENT, E. Chason, M. Scarpulla, J. Erlebacher, M.J. Aziz, J.A. Floro and M.B. Sinclair, Materials Research Society Fall meeting, Dec. 2000.

27. STRESS RELAXATION KINETICS DURING STRAINED LAYER HETEROEPITAXY, E. Chason, C. Lynch, K. Tetz, R. Beresford, E. Chen, D. Paine, L.B. Freund, New Mexico AVS Meeting, Albuquerque, NM, 5/22-24/2001.

28. SIMULATIONS AND MEASUREMENTS OF PATTERN FORMATION BY LOW-ENERGY ION BOMBARDMENT, Eric Chason, Gordon Conference, Kimball Union, NH, July 1-6, 2001

29. EFFECTS OF GROWTH KINETICS ON RESIDUAL STRESS DEVELOPMENT IN POLYCRYSTALLINE THIN FILMS, E. Chason, B. Sheldon, L.B. Freund, A. Rajamani, J.A. Floro, S.J. Hearne, Materials Research Society, Boston, Fall 2001

30. EVOLUTION OF INTRINSIC STRESS DURING DEPOSITION OF POLYCRYSTALLINE AND AMORPHOUS THIN FILMS, Jerrold A. Floro and Sean J. Hearne, Eric Chason, Materials Research Society, Boston, Fall 2001

31. MORPHOLOGICAL EVOLUTION DURING SIGE/SI STRAIN LAYER EPITAXY, Jerrold A. Floro, Jennfier L. Gray, Robert Hull, Eric Chason, Materials Research Society, Boston, Fall 2001

32. UNDERSTANDING AND CONTROLLING INTRINSIC STRESS IN POLYCRYSTALLINE CERAMIC COATINGS AND THIN FILMS, B.W. Sheldon, A. Rajamani, E. Chason, Z. Xia, J. Peo, S. Bhatia, American Ceramics Society, October, 2002

33. INFLUENCE OF NON-EQUILIBRIUM SURFACE CONDITIONS ON STRESS EVOLUTION IN THIN FILMS, , E. Chason, B. Sheldon, L.B. Freund, C. Lynch, M. Sofos, A. Rajamani, J.A. Floro, S.J. Hearne, Materials Research Society, Boston, Fall 2002

34. IN SITU MONITORINGOF STRESS RELAXATION IN SEMICONDUCTORS, (INVITED) E. Chason, American Vacuum Society (AVS) Meeting, 11/2/2003, Baltimore, MD

35. DYNAMICS OF STRESS EVOLUTION IN THIN FILMS (INVITED), E. Chason, MRS Fall Meeting, 12/1-4/2003, Boston, MA

36. REAL-TIME STUDIES OF STRAIN RELAXATION IN INGAAS HETEROEPITAXY (INVITED), R. Beresford, C. Lynch, S.-K. Hong, and E. Chason, International Symposium on Compound Semiconductors, San Diego, CA, 2003

37. ION-INDUCED RIPPLE FORMATION IN CU(001) (INVITED), Eric Chason, Wai Lun Chan, Ion Beam Modification of Materials (IBMM) 2004, Monterey CA, 9/5-10/2004

38. KINETIC MONTE CARLO SIMULATIONS OF ION INDUCED PATTERNING (INVITED), Eric Chason and Wai Lun Chan, WE-Heraeus-Seminar: "Ions at Surfaces: Patterns and Processes", Bad Honnef, Germany, June 19-23, 2005.

39. DEGRADATION IN SN FILMS DUE TO WHISKER FORMATION (INVITED), E. Chason, L. Reinbold, V. Kelly, P. Holmes, J.W. Shin, W.L. Chan, K.S. Kumar, G. Barr, Fall 2005 MRS meeting, Boston, 11/28-12/-2/2005

40. ION-INDUCED PATTERN FORMATION: CONTINUUM THEORIES, EXPERIMENTS AND KINETIC MONTE CARLO SIMULATIONS (INVITED) Eric Chason, Ion06: Ion Beam Science: Unsolved and Solved Problems, Copenhagen, Denmark, 5/1-5/2006

41. UNDERSTANDING ION-INDUCED PATTERN FORMATION: EFFECTS OF KINETIC PARAMETERS (INVITED), E. Chason and W.L. Chan, International Conf. On Atomic Collisions in Solids (ICACS), Berlin, Germany, 7/21-26/2006.

42. KINETIC MECHANISMS CONTROLLING ION-INDUCED PATTERN FORMATION (INVITED), Eric Chason and Wai Lun Chan, MRS Fall meeting, Boston, MA 11/27-12/1/2006

43. DEGRADATION IN SN FILMS DUE TO WHISKER FORMATION (invited), E. Chason, L. Reinbold, V. Kelly, P. Holmes, J.W. Shin, W.L. Chan, K.S. Kumar, G. Barr, MRS Spring 2007, San Francisco

44. STRESS GENERATION, RELAXATION AND WHISKER FORMATION IN SN COATINGS ON CU (invited), E. Chason, K.S. Kumar, L. Reinbold, N. Jadhav, V. Kelly, J.W. Shin, CALCE International Symposium on Tin Whiskers, U. of Maryland, 5/24-25/2007

45. ION BEAM PATTERNING IN THE LINEAR INSTABILITY REGIME: KINETIC MECHANISMS, PERSISTENT PUZZLES AND NEW CAPABILITIES (invited), E. Chason, W.L. Chan, N. Medhekar, V. Shenoy, Nanopatterning via Ions, Photon beam and Epitaxy, Sestri Levante, IT, 9/23-27/2007.

46. KINETIC PROCESSES CONTROLLING STRESS EVOLUTION DURING THIN FILM DEPOSITION (invited), E. Chason and J.W. Shin, ElectroChemical Society, Washington DC, 10/7-12/2007.

47. ION PATTERNING: PERSISTENT PUZZLES AND NEW DIRECTIONS(invited), E, Chason, W.L. Chan, N. Medhekar, V. Shenoy, MRS Fall 2007, Boston, MA

48. STRESS GENERATION, RELAXATION AND WHISKER FORMATION IN SN COATINGS ON CU (INVITED), E. Chason, K.S. Kumar, L. Reinbold, N. Jadhav, V. Kelly, J.W. Shin, TMS 2008, New Orleans, LA, Mar. 11, 2008

49. STRESS EVOLUTION IN ELECTRODEPOSITED FILMS (invited), Eric Chason, Gordon Research Conference on Electrodeposition, New London, NH, July 29, 2008

50. EVOLUTION OF INTRINSIC STRESSES IN THIN FILM GROWTH VIA COUPLED SURFACE AND GRAIN BOUNDARY DIFFUSION IN THE PRESENCE OF AN ACTIVE SURFACE LAYER(invited), Tanmay Bhandakkar, Eric Chason, Huajian Gao, MRS Spring 2008, San Francisco, April 2008

51. SIMULATIONS AND EXPERIMENTS OF ION BEAM PATTERNING IN THE LINEAR INSTABILITY REGIME , Eric Chason, Wai Lun Chan and Vivek Shenoy, Workshop on Self-organized nanostructures by low-energy ion beam erosion, Dresden, Oct. 17, 2008

52. INFLUENCE OF NON-EQUILIBRIUM SURFACE CONDITIONS ON THIN FILM STRESS EVOLUTION (invited), Eric Chason, MRS Fall 2008, Boston, MA, Dec. 1, 2008.

53. EVOLUTION OF INTRINSIC STRESSES IN THIN FILM GROWTH VIA COUPLED SURFACE AND GRAIN BOUNDARY DIFFUSION (invited), Tanmay Bhandakkar, Eric Chason and Huajian Gao, TMS Spring Meeting, San Francisco, CA 2/15-19/2009

54. EVOLUTION OF RESIDUAL STRESS DURING THIN FILM GROWTH: EFFECT OF COMPETING KINETIC PROCESSES (invited), Eric Chason, International Conference on Metallurgical Coatings and Thin Films (ICMCTF). San Diego, April 27-30, 2009

55. CONNECTION BETWEEN STRESS EVOLUTION AND SN WHISKER FORMATION IN PB-FREE COATINGS ON CU (Invited), E. Chason, N. Jadhav, E. Buchovecky, J.W. Shin, K.S. Kumar and A.F. Bower, MS&T Pittsburgh, October 2009

56. KINETIC PROCESSES CONTROLLING STRESS IN THIN FILMS (invited), Eric Chason, AACGE June 2010

57. REAL-TIME STUDIES OF WHISKER GROWTH : TRYING TO UNDERSTAND THE STRESS, IMC AND WHISKER CONNECTION (invited), Eric Chason, CALCE Whisker workshop June

58. SURFACE PATTERNING MECHANISMS ON METALS BY KEV IONS (invited), Eric Chason, IBMM August 2010, Montreal

59. HOW DO WHISKERS AND HILLOCKS GROW IN PB-FREE SN COATINGS? (invited), Eric Chason, Nitin Jadhav, Eric Buchovecky, Allan Bower, Sharvan Kumar, SMTA, Oct. 25-28 2010, Orlando FL

60. UNDERSTANDING THE EVOLUTION OF STRESS IN SPUTTERED FILMS: EFFECT OF COMPETING KINETIC PROCESSES (invited), Eric Chason, Reactive Sputter Deposition 2010, Ghent, Belgium, December 9-10, 2010.

61. KINETIC MECHANISMS CONTROLLING IMC GROWTH, STRESS EVOLUTION AND WHISKER FORMATION, Eric Chason, Nitin Jadhav, Eric Buchovecky, Fei Pei, Allan Bower and Sharvan Kumar, (Invited) TMS 2011, San Diego, Feb. 2011

62. EFFECTS OF SN LAYER MICROSTRUCTURE, COMPOSITION AND MECHANICAL PROPERTIES ON WHISKER GROWTH KINETICS, Eric Chason, Nitin Jadhav, Fei Pei (Invited), 7th TMS Lead Free Solder and Interconnect Technology Workshop, San Diego Feb, 2011

63. UNDERSTANDING THE EVOLUTION OF STRESS IN THIN FILMS THROUGH SIMPLE KINETIC MODELS (Invited), Eric Chason, GRC Thin Films and Crystal Growth. Maine, 2011

64. ION-INDUCED RELAXATION IN AMORPHOUS SILICON: EFFECTS ON STRESS AND RIPPLE MORPHOLOGY (Invited), E. Chason1 and Y. Ishii, Workshop on Nanopatterning, Madrid, Sept. 2011

65. EFFECTS OF SN LAYER MICROSTRUCTURE, COMPOSITION AND MECHANICAL PROPERTIES ON WHISKER NUCLEATION AND GROWTH (Invited), Nitin Jadhav, Fei Pei, Eric Chason, 5th Int'l Symposium on Tin Whiskers, CALCE, U. of Md., Sept. 2011

66. ORIGINS AND EVOLUTION OF STRESS IN ELECTRODEPOSITED FILMS (Invited), Eric Chason, ECS Fall Meeting, Boston, Oct. 2011

67. UNDERSTANDING THE ORIGINS AND EVOLUTION OF RESIDUAL STRESS (invited), Symposium: Advances in Surface Engineering: Alloyed and Composite Coatings, 2012 TMS Annual Meeting & Exhibition, Mar. 11-15, 2012 Orlando, FL

68. HOW AND WHY DO WHISKERS GROW FROM SN COATINGS? (invited), Symposium: 2012 Symposium on Surfaces and Heterostructures at Nano- or Micro-Scale and Their Characterization, Properties, and Applications, 2012 TMS Annual Meeting & Exhibition, Mar. 11-15, 2012 Orlando, FL

69. A KINETIC MODEL FOR STRESS EVOLUTION IN THIN FILMS (invited), Eric Chason, ECS (Electrochemical Society) 2012 –May 6-11, 2012, Seattle

70. ORIGINS OF RESIDUAL STRESS IN THIN FILMS (invited), Eric Chason, ICERM, Providence, May 29- June 1, 2012

71. RIPPLE FORMATION ON SURFACES DURING LOW-ENERGY ION BOMBARDMENT (invited), Eric Chason, COSIRES (Computer Simulations of Radiation Effects in Solids), Santa Fe, June 24-29,2012.

72. STRESS AND MICROSTRUCTURE AROUND WHISKER-FORMING GRAINS IN SN COATINGS (invited), Eric Chason, Fei Pei, Nitin Jadhav, TMS Annual Meeting, San Antonio, Feb 2013

73. A KINETIC MODEL FOR RESIDUAL STRESS EVOLUTION IN POLYCRYSTALLINE THIN FILMS (invited), Eric Chason, E-MRS, Strasburg, France, May, 2013

74. DRIVING FORCES AND MECHANISMS FOR SN WHISKER NUCLEATION AND GROWTH (invited), Eric Chason, AIA PERM (Pb-free electronics risk management) meeting, Raytheon, Woburn, MA, June 5-6, 2013.

75. REAL-TIME STUDY OF WHISKER/HILLOCK FORMATION IN SN-CU SYSTEMS DURING THERMAL CYCLING (invited), Eric Chason, Fei Pei, 7th International Symposium on Tin Whiskers, CALCE, Costa Mesa CA, 2013

76. A KINETIC PICTURE FOR UNDERSTANDING RESIDUAL STRESS IN THIN FILMS: REAL-TIME EXPERIMENTS AND MODELING (INVITED), Eric Chason, Electronic Materials and Applications (EMA), Orland FL, 1/22/2015, Orlando Fl

77. SN WHISKER FORMATION AS A STRESS-INDUCED NUCLEATION AND GROWTH PROCESS (INVITED), Eric Chason, Fei Pei, Allan Bower and Eric Buchovecky, TMS 2015: 11th Annual Lead Free Solders and Interconnect Technology Workshop, Orlando FL, Jan 21-23, 2015

78. CONNECTING RESIDUAL STRESS AND THIN FILM GROWTH PROCESSES: REAL-TIME EXPERIMENTS AND A KINETIC MODEL (INVITED PLENARY TALK), Eric Chason, Int'l. Conf. on Metallurgical Coatings and Thin Films (ICMCTF), 4/20/2015, San Diego, CA

79. MODELING THE GROWTH OF WHISKERS UNDER THERMALLY-INDUCED STRAIN (*INVITED*), Fei Pei and Eric Chason, TMS, Feb. 15, 2016, Nashville TN

80. KEYNOTE SPEECH: TRYING TO UNDERSTAND RESIDUAL STRESS IN TERMS OF THE UNDERLYING KINETIC PROCESSES (*INVITED*), Joint ICMCTF-SVC workshop on stress in thin films and coating, E. Chason, Oct. 2-5, 2016 Chicago, IL

81. ORIGINS OF RESIDUAL STRESS IN THIN FILMS: EFFECTS OF THE GROWTH KINETICS AND MICROSTRUCTURE (*INVITED*), E. Chason, A. Engwall, MS&T, Salt Lake City, Oct. 23-27, 2016

82. RELATING THIN FILM STRESS TO THE PROCESSING CONDITIONS AND MICROSTRUCTURE,
E. Chason, 8th Symposium on Functional Coatings and Surface Engineering
Montreal, Canada, June 4-7, 2017

83. STRESS IN ELECTRODEPOSITED Ni AND Cu: UNDERSTANDING THE EFFECTS OF DEPOSITION CONDITIONS AND MICROSTRUCTURE, E. Chason, Z. Rao, and A. Engwall, ECS 2017 Washington DC, Oct. 1-4 2017.

84. RESIDUAL STRESS EVOLUTION DURING THIN FILM GROWTH: KINETIC MODELING AND MONTE CARLO SIMULATIONS (*invited)*, Eric Chason, ECS, 5/13-16/2018, Seattle WA.

85. STRESS IN FILMS DEPOSITED BY PHYSICAL VAPOR DEPOSITION: TOWARD A PREDICTIVE MODEL (*invited*), Eric Chason, IMRC, 8/24-29/2018, Cancun Mexico.

86. WHAT MAKES Sn WHISKERS NUCLEATE AND GROW: INSIGHT FROM REAL-TIME MEASUREMENTS AND MODELING (*invited*), Eric Chason, Nupur Jain, Andrew Hitt and Fei Pei, MS&T, 10/2018 Oct 2018, Columbus OH.

87. KINETIC MONTE CARLO SIMULATIONS OF RESIDUAL STRESS DEVELOPMENT DURING THIN FILM GROWTH (*invited)*, Eric Chason ICCGE (International Conf. on Crystal Growth and Epitaxy) Keystone Co, 7/29-8/3/2019.

88. PRESSURE INDUCED WHISKER GROWTH IN SN COATINGS (*invited)*, Piyush Jagtap, Nupur Jain, Allan Bower, Eric Chason, MS&T Portland Or., Sept29-Oct 2, 2019

89. NUCLEATION AND GROWTH KINETICS OF Sn WHISKERS UNDER APPLIED PRESSURE (*invited*), E. Chason, P. Jagtap, N. Jain, A. Bower, TMS Annual meeting (virtual), 3/15-18/2021

90. UNDERSTANDING RESIDUAL STRESS IN THIN FILMS THROUGH A KINETIC MODEL (invited), E. Chason ECS 2022 , Atlanta, 10/9-11/2022

91. A KINETIC MODEL OF RESIDUAL STRESS IN THIN FILMS: EFFECT OF PROCESSING CONDITIONS AND MICROSTRUCTURAL EVOLUTION (invited), Eric Chason, T. Su and Z. Rao, RSD (Reactive Sputter Deposition) 2022 (virtual), 12/7-9/2022

92. MODELING STRESS IN THIN FILMS (invited), Piyush Jagtap and E. Chason, 4th Structural Integrity Conference and Exhibition, IIT Hyderabad, India, 4th - 16th December 2022

University/industrial invited lectures:

1. SURFACE MORPHOLOGY AND MODIFICATION DURING MBE, E. Chason, Center for High Technology Materials, U. of New Mexico, Albuquerque, NM, 4/18/89.

2. SURFACE DEFECT KINETICS AND BEAM-ENHANCED EPITAXY Ge(100) , E. Chason, MIT-Lincoln Laboratories, Bedford, MA, 7/10/90.

3. OBSERVATIONS OF SEMICONDUCTOR CRYSTAL SURFACES GROWN FROM THE VAPOR, E. Chason, Seminar, Harvard University, Cambridge, MA, 4/18/91.

4. ATOMIC LEVEL UNDERSTANDING OF LOW-ENERGY ION BOMBARDMENT AND EPITAXIAL GROWTH OF SEMICONDUCTORS, E. Chason, Seminar at the University of Texas, Austin, TX, 2/18/92.

5. IN SITU X-RAY REFLECTIVITY MEASUREMENTS OF SURFACES AND INTERFACES , Johns Hopkins University, Baltimore, MD, November 1992. SAND 92-2457A.

6. ROUGHENING INSTABILITY AND EVOLUTION OF SURFACE MORPHOLOGY DURING ION SPUTTERING, E. Chason, Cornell U., Ithaca, NY, 10/21/1993.

7. EVOLUTION OF SURFACE ROUGHNESS DURING LOW-ENERGY ION SPUTTERING ,E. Chason, U. of Nebraska, Lincoln, NB, Oct 20, 1994.

8. ROUGHNESS INSTABILITY AND ENHANCED SURFACE TRANSPORT ON SPUTTERED SURFACES , E. Chason, U. of Texas, Austin, 11/9/94.

9. KINETICS OF SURFACE MORPHOLOGY EVOLUTION , E. Chason, Harvard U., Cambridge, MA, 3/23/1995.

10. KINETICS OF SURFACE MORPHOLOGY EVOLUTION, Arizona State University, Sept. 1995

11. KINETICS OF SURFACE MORPHOLOGY EVOLUTION, U. of Michigan, November, 1995.

12. X-RAY RELFECTIVITY STUDIES OF SURFACE AND THIN FILM MORPHOLOGY EVOLUTION, E. Chason, U. of Illinois, Urbana, IL, 10/7/96 .

13. REAL-TIME MEASUREMENTS OF SURFACE MODIFICATION DURING PROCESSING, E. Chason and J. A. Floro, Lawrence Livermore National Laboratory, 10/28/96.

14. EVOLUTION OF STRESS AND MORPHOLOGY IN THIN FILMS, Eric Chason, Jerry Floro, M. Sinclair, R.Q. Hwang, J.A. Hunter, R.D Twesten and L.B. Freund, Notre Dame University, Feb. 18, 1998 .

15. INTERACTION OF STRESS AND MORPHOLOGY IN SIGE HETEROEPITAXY, Eric Chason, Yale University, 3/24/99

16. INTERACTION OF STRESS AND MORPHOLOGY IN SIGE HETEROEPITAXY, Eric Chason, Massachusetts Institute of Technology, 5/6/99

17. REAL TIME STUDIES OF STRESS AND MORPHOLOGY EVOLUTION IN HETEROEPITAXY, Eric Chason, Northwestern University, 10/12/99

18. REAL TIME STUDIES OF STRESS AND MORPHOLOGY EVOLUTION IN HETEROEPITAXY, Eric Chason, University of Michigan, 10/26/99

19. PATTERN FORMATION ON SURFACES BY ION IRRADIATION, E. Chason, J. Erlebacher, M.J. Aziz, J.A. Floro and M.B. Sinclair, Sandia National Laboratories, Albuquerque, NM, June 2000.

20. EVOLUTION OF STRESS AND MORPHOLOGY IN THIN FILMS, E. Chason, U. of Rhode Island, Kingston, RI, Oct. 30, 2000.

21. REAL-TIME MEASUREMENT OF STRESS, MICROSTRUCTURE AND MORPHOLOGY DURING THIN FILM GROWTH, Eric Chason, American Superconductor, 3/9/2001

22. REAL-TIME MEASUREMENTS OF STRESS, MICROSTRUCTURE AND MORPHOLOGY DURING THIN FILM GROWTH, Eric Chason, New England AVS Chapter, 5/2/2001.

23. SPONTANEOUS PATTERN FORMATION DURING LOW ENERGY ION BOMBARDMENT, Eric Chason, Brown University, Physics Department Seminar Series, January 2001.

24. SPONTANEOUS PATTERN FORMATION DURING LOW ENERGY ION BOMBARDMENT, Eric Chason, Harvard University, 5/27/2001, Solid State Physics Seminar,

25. *In situ* DIAGNOSTICS FOR THIN FILM AND SURFACE PROCESSING (INVITED), E. Chason, DOE Workshop on In Situ Microscopy, Half Moon Bay, CA, Jan. 2002

26. RESIDUAL STRESS IN POLYCRYSTALLINE FILMS(INVITED), Eric Chason, Lawrenece

Livermore National Laboratories, Livermore, CA, 7/10/2002

27. RESIDUAL STRESS IN POLYCRYSTALLINE FILMS (INVITED), Eric Chason, U. of California, Berkeley, Berkeley, CA 7/12/2002

28. STRESS EVOLUTION IN THIN FILMS (INVITED), Eric Chason, Johns Hopkins University, Baltimore, MD, Oct. 16-17, 2002

29. GROWTH KINETICS, SURFACE SUPERSATURATION AND THE EVOLUTION OF THIN FILM STRESS, Eric Chason, University of Poitiers, Poitiers, France, April 11, 2003

30. GROWTH KINETICS, SURFACE SUPERSATURATION AND THE EVOLUTION OF THIN FILM STRESS, Eric Chason, CEA Center for Atomic Energy, Saclay, France, April 15, 2003

31. EVOLUTION OF THIN FILM STRESS, E. Chason, National Institute of Standards and Technology (NIST), 7/16/03

32. INFLUENCE OF NON-EQUILIBRIUM GROWTH CONDITIONS ON STRESS IN THIN FILMS, E. Chason, Princeton MAE seminar, Princeton, NJ, Feb 2004

33. DYNAMICS OF STRESS EVOLUTION IN THIN FILMS, Eric Chason, Lawrence Livermore National Lab, Aug. 9, 2004

34. DYNAMICS OF STRESS EVOLUTION IN THIN FILMS (INVITED), Eric Chason, Brown University, Division. of Engineering, Providence, RI, Sandia, Jan 18, CINT WORKSHOP TALK

35. INFLUENCE OF NON-EQUILIBRIUM GROWTH CONDITIONS ON STRESS IN THIN FILMS (INVITED) , E. Chason, RPI, Feb 5

36. INFLUENCE OF NON-EQUILIBRIUM GROWTH CONDITIONS ON STRESS IN THIN FILMS ,(INVITED) E. Chason, Harvard, Mar. 11 2005

37. KINETIC MECHANISMS IN ION-INDUCED RIPPLE FORMATION: MEASUREMENTS AND KMC SIMULATIONS (INVITED) , E. Chason, Genova University, Genova, Italy, April 226, 2005

38. INFLUENCE OF NON-EQUILIBRIUM GROWTH CONDITIONS ON STRESS IN THIN FILMS , (INVITED) E. Chason, Max Planck Institute, Stuttgart, Germany, April 28, 2005

39. IN SITU DIAGNOSTICS TO MONITOR THIN FILM MORPHOLOGY AND MICROSTRUCTURE FOR OPTIMIZATION OF MATERIALS PROPERTIES (INVITED), Eric Chason, 2005 U.S. Army Workshop, Advanced Active Thin Film Materials for The Next Generation of Meso - Micro Scale Army Applications, Destin, FL, May 10-12, 2005

40. SPONTANEOUS PATTERN FORMATION ON SPUTTERED SURFACES (INVITED), Eric Chason, GE Global Res. Center, Niskayuna, NY, 6/4-5/2006.

41. PATTERN FORMATION ON SPUTTERED SURFACES: EXPERIMENTS AND KMC SIMULATIONS (INVITED) , Eric Chason, Lawrence Livermore National Labs, Livermore, CA, 7/11/2006.

42. INFLUENCE OF NON-EQUILIBRIUM CONDITIONS ON THIN FILM STRESS AND SURFACE MORPHOLOGY EVOLUTION (invited), E. Chason, Washington U., St Louis, MO, 3/25-27/2007

43. INFLUENCE OF NON-EQUILIBRIUM CONDITIONS ON THIN FILM STRESS EVOLUTION (invited), E. Chason, Argonne Nat'l Lab. Synchrotron User's meeting, Argonne, IL, 5/7-12/2007

44. EFFECTS OF HIGH FLUX/LOW ENERGY IONS (invited), E. Chason, DOE Workshop on Basic Research Needs for Materials under Extreme Environments, Bethesda, MD, 6/10-14/2007

45. THIN FILM STRESS AND SURFACE MORPHOLOGY EVOLUTION: INFLUENCE OF NON-EQUILIBRIUM CONDITIONS (Invited), E. Chason, Yale University, Mechanics Colloquium, Feb. 6, 2008.

46. THIN FILM STRESS AND SURFACE MORPHOLOGY EVOLUTION: INFLUENCE OF NON-EQUILIBRIUM CONDITIONS (invited), E. Chason, Albany Nanocenter Colloquium, Feb. 29, 2008.

47. INFLUENCE OF NON-EQUILIBRIUM CONDITIONS ON THIN FILM STRESS AND SURFACE MORPHOLOGY EVOLUTION (invited), Eric Chason, Boston University Colloquium, Mar. 7, 2008.

48. KINETIC PROCESSES CONTROLLING STRESS EVOLUTION IN ELECTRODEPOSITED SN (invited), Eric Chason, NIST Measurement of Stress in Sn and Sn Alloy Electrodeposits Workshop, April 17, 2008.

49. MEASUREMENT OF STRESS EVOLUTION IN THIN FILMS USING REAL-TIME IN SITU WAFER CURVATURE, (invited tutorial), E. Chason, International. Conf. on Metallurgical Coatings and Thin films (ICMCTF) 2008, San Diego, CA, Apr. 27-29, 2008.

50. THIN FILM STRESS AND SURFACE MORPHOLOGY EVOLUTION: INFLUENCE OF NON-EQUILIBRIUM CONDITIONS (invited), E. Chason, IBM T.J. Watson Research Center, May 9, 2008.

51. RESIDUAL STRESS DURING THIN FILM GROWTH: EFFECT OF NON-EQUILIBRIUM CONDITIONS (invited), Eric Chason, FZD Dresden-Rossendorf, Oct. 18, 2008

52. EFFECT OF NON-EQUILIBRIUM SURFACE CONDITIONS ON THIN FILM STRESS EVOLUTION (invited), E. Chason, DOE CMSN workshop, Gatlinburg, TN, Oct. 31, 2008.

53. EFFECT OF NON-EQUILIBRIUM SURFACE CONDITIONS ON THIN FILM STRESS EVOLUTION (invited), E. Chason, Columbia University Colloquium, New York, Oct. 24, 2008.

54. RECENT WORK IN DEVELOPING, CHARACTERIZING AND UNDERSTANDING ADVANCED THIN FILM MATERIALS (invited), E. Chason, Rogers Corp, Dayville, CT, 1/29/2009

55. HOW NON-EQUILIBRIUM THIN FILM CONDITIONS AFFECT RESIDUAL STRESS AND MORPHOLOGY EVOLUTION (invited), Eric Chason, CCNY Mechanical Engineering colloquium, New York, March 4-5, 2009

56. SN WHISKER FORMATION: RELATIONSHIP BETWEEN INTERMETALLIC FORMATION, STRESS AND WHISKER NUCLEATION (invited), E. Chason, Sn whisker teleconference, July 8, 2009

57. UNDERSTANDING HOW COMPETING KINETIC PROCESSES CONTROL RESIDUAL STRESS EVOLUTION, Eric Chason (invited), ARO Workshop, U Conn Aug 24-6

58. RESIDUAL STRESS AND MORPHOLOGY EVOLUTION IN THIN FILMS: IMPORTANCE OF NON-EQUILIBRIUM PROCESSES (invited), UT Denton, Denton, TX, Sept. 2009.

59. MECHANISMS OF SPUTTER RIPPLE FORMATION: COUPLING AMONG ENERGETIC IONS, SURFACE KINETICS, STRESS AND COMPOSITION (invited), Eric Chason and Vivek Shenoy, DOE SYNPRO contractor's meeting, Airlie VA, Oct. 2009.

60. REAL-TIME STUDIES OF WHISKER GROWTH: UNDERSTANDING THE STRESS, IMC AND WHISKER CONNECTION , Nitin Jadhav, E. Chason, A. Bower, E. Buchovecky, IBM Watson Research Center, Yorktown Heights, NY , April 2010

61. UNDERSTANDING STRESS EVOLUTION IN THIN FILMS, E. Chason, LLNL, Oct. 20, 2010, Livermore CA

62. HOW DO WHISKERS AND HILLOCKS GROW IN PB-FREE SN COATINGS? , Eric Chason, Whisker Teleconference, Nov. 2010

63. HOW AND WHY DO WHISKERS GROW FROM SN COATINGS?, Eric Chason, LLNL, 6/22/2011, Livermore CA

64. LARGE AREA SINGLE CRYSTAL FOILS GROWN BY EPITAXIAL ELECTRODEPOSITION, E. Chason, IBM T.J. Wartson Res. Cent., Yorktown Heights, NY, 4/2011

65. UNDERSTANDING THE ORIGINS AND EVOLUTION OF RESIDUAL STRESS IN THIN FILMS, (invited), Eric Chason, Institute for High Performance Computing (IHPC), Singapore, 7/5/2011

66. HOW AND WHY DO WHISKERS GROW FROM SN COATINGS?, (invited), Eric Chason, Institute for High Performance Computing (IHPC), Singapore, 7/6/2011

67. NANOSCALE FABRICATION AND CONTROL OF SURFACE MORPHOLOGY, Eric Chason, KIMM site visit, Brown University, 8/16/2011

68. KINETIC PROCESSES CONTROLLING STRESS IN THIN FILMS (invited), Eric Chason, NIST, Gaithersburg, Md., 8/22/2011

69. UNDERSTANDING RESIDUAL STRESS EVOLUTION IN THIN FILMS (invited),Eric Chason, Washington State University, Distinguished lecturer, 10/14/2011

70. UNDERSTANDING STRESS EVOLUTION IN THIN FILMS (invited), Eric Chason, U. Connecticut, Mechanical Engineering Seminar Series, 1/27/2012

71. BROWN WHISKER RESEARCH OVERVIEW: REAL-TIME STUDY OF WHISKER/HILLOCK FORMATION IN SN-CU SYSTEMS BY EBSD CHARACTERIZATION, Eric Chason, Fei Pei, Nitin Jadhav, Whisker teleconference call, 2/22/2012

72. RESIDUAL STRESS IN THIN FILMS, Eric Chason, Sandia National Laboratories, 6/28/2012, Albuquerque, NM

73. UNDERSTANDING STRESS EVOLUTION IN THIN FILMS, Eric Chason, BU seminar, 9/21/2012, Boston MA

74. UNDERSTANDING STRESS EVOLUTION IN THIN FILMS, Eric Chason, RPI, Troy, NY, 2/6/2013

75. HOW AND WHY DO WHISKERS GROW FROM SN COATINGS?, Eric Chason, Iowa State U., Ames, Iowa, 3/28/2013

76. CORRELATING WHISKER/HILLOCK GROWTH WITH STRESS DURING THERMAL CYCLING, E. Chason, F. Pei, N. Jadhav, Whisker Telecon, May 8, 2013

77. THIN FILMS, SURFACE MODIFICATION AND RELIABILITY OR WHAT DO MATERIALS SCIENTISTS DO?, Eric Chason, Mat Sci Undergrad Seminar series, Brown U, April 2013

78. PROCESSES CONTROLLING INTERFACE MOTION IN ELECTROCHEMICAL SYSTEMS, Chun-Hao Chen, Eric Chason, Pradeep Guduru, DOE EPSCoR workshop, Brown U, July 3, 2013

79. MEASUREMENT OF STRESS EVOLUTION IN THIN FILMS USING REAL-TIME IN SITU WAFER CURVATURE, E. Chason, Exhibitors symposium for k-space Assoc. at E-MRS, Strasburg, France, May 2013.

80. DRIVING FORCES AND MECHANISMS FOR SN WHISKER NUCLEATION AND GROWTH, Eric Chason, Lockheed-Martin eForum for lead-free, Teleconference presentation, July 8, 2013

81. DRIVING FORCES AND MECHANISMS FOR SN WHISKER NUCLEATION AND GROWTH, Eric Chason, Fei Pei, Nitin Jadhav, IHPC, Singapore, Oct. 24, 2013

82. UNDERSTANDING RESIDUAL STRESS IN POLYCRYSTALLINE FILMS: MODELS AND EXPERIMENTS, Eric Chason, IHPC, Singapore, Oct. 23, 2013

83. STRESS EVOLUTION AND PHASE TRANSFORMATIONS IN SN ANODES DURING LITHIATION CYCLING, Chun-Hao Chen, Eric Chason, Pradeep Guduru, A.F. Bower, Giovanna Bucci, DOE Progress review for EPSCoR, Bropwn University, Sept. 2013

84. A UNIFIED UNDERSTANDING OF RESIDUAL STRESS IN THIN FILMS: KINETIC MODELS, EXPERIMENTS AND SIMULATIONS, Eric Chason, DOE SYN-PRO Principal Investigator's meeting, Gaithersburg, Md., Nov. 18-20, 2013

85. DRIVING FORCES AND MECHANISMS FOR SN WHISKER NUCLEATION AND GROWTH, Eric Chason, Celestica, Toronta, Canada, 3/20/2014

86. RESIDUAL STRESS IN THIN FILMS: REAL-TIME EXPERIMENTS AND KINETIC MODELING, Eric Chason, Arizona State U., Tempe, AZ 4/25/2014

87. KINETIC PROCESSES CONTROLLING STRESS IN THIN FILMS, Eric Chason, U. of Limerick, Limerick, Ireland, June, 2014

88. KINETIC PROCESSES CONTROLLING STRESS IN THIN FILMS, Eric Chason, U. of Linkoping, Linkoping, Sweden, May 14, 2014

89. DRIVING FORCES AND MECHANISMS FOR SN WHISKER NUCLEATION AND GROWTH, Eric Chason, Amphenol, Nashua, HN, Oct. 31, 2014

90. SN WHISKER FORMATION AS A STRESS-INDUCED NUCLEATION AND GROWTH PROCESS, E. Chason and Fei Pei, TMS Electronic Packaging and Interconnect Materials (EPIM) Webinar Series, Aug. 25, 2016

91. ORIGINS OF RESIDUAL STRESS DURING THIN FILM GROWTH, E. Chason, U. Florida (Gainesville, FL), Sept. 26, 2017

92. WHY IS THERE STRESS IN THIN FILMS?, E. Chason, U. Alabama (Tuscaloosa, AL), Nov. 10, 2017.

93. STRESS IN THIN FILMS: HOW CAN WE PREDICT AND CONTROL IT?, Eric Chason, Sandia, 6/5-7/2018, Albuquerque, NM.

94. THE MECHANISMS CONTROLLING Sn WHISKER NUCLEATION AND GROWTH: INSIGHT FROM REAL-TIME MEASUREMENTS AND MODELING , Eric Chason, Rice U., 10/17-19/2018, Houston TX

95. FUNDAMENTAL UNDERSTANDING OF RESIDUAL STRESS IN NITRIDE THIN FILMS FOR PREDICTION AND CONTROL, Eric Chason, Interagency Coordinating Committee on Ceramics Research and Development (ICCCRD), Institute for Defense Analysis (IDA) Arlington, VA, 12/12/2019

96. RESIDUAL STRESS IN THIN FILMS: TOWARDS A MORE FUNDAMENTAL UNDERSTANDING AND PREDICTIVE CAPABILITY (*invited)*, Eric Chason, Michigan State University, 9/16/2021

97. UNDERSTANDING STRESS IN THIN FILMS: PHYSICAL MECHANISMS AND ANALYTICAL MODEL, Eric Chason, Sandia National Labs, Albuquerque, April 21, 2022 (delivered online)

h. papers read:

1. RHEED MEASUREMENTS OF SURFACE ROUGHENING DURING MBE GROWTH OF Ge(100), E. Chason and J. Y. Tsao, American Vacuum Society Meeting, Albuquerque, NM, 4/20/88.

2. DYNAMICS OF GROWTH ROUGHENING AND SMOOTHENING ON Ge(001), E. Chason, J. Y. Tsao, K. M. Horn and S. T. Picraux, 9th Molecular Beam Epitaxy Workshop (AVS), West Lafayette, IN, 9/21-23/88.

3. HYDROGEN ION BEAM SMOOTHENING OF OXYGEN-ROUGHENED Ge(001) SURFACES, K. M. Horn, E. Chason, J. Y. Tsao and S. T. Picraux, Fall Meeting Materials Research Society, Boston, MA, 11/27- 12/3/88.

4. ARGON ION BOMBARDMENT DURING MOLECULAR BEAM EPITAXY OF Ge(001), E. Chason, K. M. Horn, J. Y. Tsao and S. T. Picraux, Fall Meeting of the Materials Research Society, Boston, MA, 11/27- 12/3/88.

5. NEAR-THRESHOLD ENERGY DEPENDENCE OF Xe-INDUCED DISPLACEMENTS ON Ge(001), S. T. Picraux, D. K. Brice, K. M. Horn, J. Y. Tsao and E. Chason, 13th International Conference on Atomic Collisions in Solids, Aarhus, Denmark, 8/7-11/89.

6. SURFACE ROUGHENING OF Ge(001) DURING 200 eV Xe ION BOMBARDMENT AND Ge MOLECULAR BEAM EPITAXY, E. Chason, J. Y. Tsao, K. M. Horn, S. T. Picraux, et al., American Vacuum Society, Boston, MA, 10/23-27/89.

7. ION BEAM ENHANCED EPITAXIAL GROWTH, S. T. Picraux, E. Chason, J. Y. Tsao, K. M. Horn and D. K. Brice, American Physical Society, Anaheim, CA, 3/12-16/90.

8. ION-BEAM ENHANCED EPITAXY OF Ge(001), S. T. Picraux, E. Chason, K. M. Horn, J. Y. Tsao and D. K. Brice, Ion Beam Modification of Materials 1990, Knoxville, TN, 9/9-14/90.

9. EFFECT OF STEP EDGE TRANSITION RATES AND ANISOTROPY IN SIMULATIONS OF EPITAXIAL GROWTH, E. Chason and B. W. Dodson, 37th Annual Symposium of the American Vacuum Socity, Toronto, Ontario, Canada, 10/8-12/90.

10. X-RAY REFLECTIVITY MEASUREMENTS OF SURFACE ROUGHNESS USING ENERGY DISPERSIVE DETECTION, E. Chason and D. Warwick, Fall Meeting of the Materials Research Society, Boston, MA, 11/26- 12/1/90.

11. INVERSE RHEED OSCILLATIONS ON SILICON, P. Bedrossian, J. E. Houston, J. Y. Tsao, E. Chason and S. T. Picraux, 1990 Fall Meeting of the Materials Research Society, Boston, MA, 11/26-12/1/90.

12. LAYER-BY-LAYER SPUTTERING OF SILICON, P. Bedrossian, J. E. Houston, J. Y. Tsao and E. Chason, 1991 March Meeting of the American Physical Society, Cincinnati, OH, 3/18-22/91.

13. LAYER-BY-LAYER SPUTTERING AND EPITAXY OF SILICON, P. Bedrossian, J. E. Houson, J. Y. Tsao, E. Chason and T. Klitsner, 27th Annual Symposium of the New Mexico Chapter of the American Vacuum Society, Albuquerque, NM, 4/22-26/91.

14. MODELING Si SURFACE SPUTTERING AND GROWTH DYNAMICS, E. Chason and B. W. Dodson, BES Materials Sciences Review, Los Alamos National Laboratory, Los Alamos, NM, 5/29-30/91.

15. LAYER BY LAYER SPUTTERING OF SILICON, P. Bedrossian, T. Klitsner, E. Chason, J. E. Houston, J. Y. Tsao and S. T. Picruax, BES Materials Sciences Review, Los Alamos National Laboratory, Los Alamos, NM, 5/29-30/91.

16. SURFACE VACANCY DIFFUSION AND LAYER-BY-LAYER REMOVAL OF SILICON SURFACES, T. Klitsner, P. Bedrossian, J. E. Houston, E. Chason, J. Y. Tsao and S. T. Picruax, DOE 17th Surface Studies Conference, Livermore, CA, 10/15-18/91.

17. VACANCY DIFFUSION AND LAYER-BY-LAYER SPUTTERING OF SILICON SURFACES, P. J. Bedrossian, J. E. Houston, J. Y. Tsao, E. Chason and T. Klitsner, 38th AVS Annual Symposium & Topical Conference, Seattle, WA, 11/11-15/91.

18. SIMULATIONS OF LOW-ENERGY ION BOMBARDMENT AND EPITAXIAL GROWTH, E. Chason, P. J. Bedrossian, J. Y. Tsao, B. W. Dodson and S. T. Picraux, 1991 Fall Meeting of the Materials Research Society, Boston, MA, 12/2-6/91.

19. Ge SURFACE DISPLACEMENT DUE TO LOW ENERGY PARTICLES, S. T. Picraux, K. M. Horn, E. Chason, J. Y. Tsao, P. Bedrossian, T. Klitsner and D. K. Brice, 1991 Fall Meeting of the Materials Research Society, Boston, MA, 12/2-6/91.

20. IN SITU ENERGY DISPERSIVE X-RAY REFLECTIVITY MEASUREMENTS OF H ION BOMBARDMENT ON SiO_2/Si AND Si, E. Chason and T. M. Mayer, 1992 Spring Meeting of the Materials Research Society, San Francisco, CA, 4/27- 5/1/92.

21. H ION BOMBARDMENT OF SiO_2/Si AND Si MEASURED BY IN SITU ENERGY DISPERSIVE X-RAY REFLECTIVITY, E. Chason and T. M. Mayer, NMAVS Meeting, Albuquerque, May 12-14, 1992.

22. LOW ENERGY ION BOMBARDMENT INDUCED ROUGHENING AND SMOOTHING OF SiO_2 SURFACES, E. Chason and T. Mayer, Fall Meeting of the Materials Research Society, Boston, MA, 11/30/92-12/4/92.

23. X-RAY REFLECTIVITY MEASUREMENTS OF VACUUM DEPOSITED THIN FILMS, M. Chason, E. Chason, Corporate Manufacturing Center, Motorola 1993 Winter Advanced Mfg. Tech. Symposium; Phoenix, AZ, February, 1993. SAND92-2541A.

24. MASS FLOW AND STABILITY OF NANOSCALE FEATURES ON Au(111). Fall Meeting of the Materials Research Society, Boston, MA, November, 1992. SAND9 2-2856C.

25. INTERFACE ROUGHNESS: WHAT IS IT AND HOW IS IT MEASURED? Eric Chason, Fall Meeting of the Materials Research Society, Boston, MA, November, 1992. SAND93-0304C.

26. USES OF MONTE CARLO COMPUTER SIMULATIONS IN UNDERSTANDING EPITAZIAL GROWTH AND ION BOMBARDMENT OF Si(001), E. Chason, DOE Workshop on Surface Diffusion and Materials Growth, Santa Fe, NM June 1-3, 1992, (invited).

27. X-RAY REFLECTIVITY MEASUREMENTS OF Sio_2/Si and Si SURFACE MODIFICATION BY ION BOMBARDMENT, E. Chason (1112), T.M. Mayer (1114), FOM Institute for Atomic and Molecular Physics, Amsterdam, the Netherlands, September 15, 1992.

28. USE OF MONTE CARLO SIMULATION TO UNDERSTAND GROWTH AND ION BOMBARDMENT, E. Chason (1112), Julich, Germany, September 17, 1992.

29. GROWTH PRESSURE EFFECTS ON Si/$Si_{1-x}Ge_x$ CHEMICAL VAPOR DEPOSITION, Z. Matutinovic-Krstelj, J.C. Sturm, Eric Chason, 1993 Electronic Materials Conference, Santa Barbara, CA, 6/23-25/93. SAND93-0532A.

30. ION BOMBARDMENT INDUCED ROUGHENING AND SMOOTHING OF Sio_2 SURFACES, T.M. Mayer, E. Chason, DOE Surface Studies Conference/NM American Vacuum Society Symposium, Santa Fe, NM, 4/27-30/93. SAND93-0799A.

31. DETERMINATION OF SURFACE ROUGHNESS DURING ETCHING AND GROWTH , E. Chason, T. Mayer, Fall American Vacuum Society Meeting, Orlando, FL, November 1993. SAND93-1147A.

32. ROUGHENING INSTABILITY AND ION-INDUCED VISCOUS RELAXATION OF SiO_2 SURFACES, T. Mayer, E. Chason, A. Howard, American Vacuum Society National Symposium, Orlando, FL, November 1993. SAND93-1117A.

33. IN SITU X-RAY REFLECTIVITY MEASUREMENTS OF THIN FILM STRUCTURAL EVOLUTION, American Vacuum Society National Symposium, Orlando, FL, November 1993; Orlando, FL. SAND93-1146A

34. LOW ENERGY ION BOMBARDMENT INDUCED SURFACE DISPLACEMENTS ON Ge (001); J. A. Floro, S. T. Picraux, B. K. Kellerman, E. Chason; Materials Research Society 1993 Fall meeting 11/29-12/3; Boston, Mass. SAND93-1472A

35. MECHANISTIC STUDIES OF VISIBLE PHOTOLUMINESCENCE FROM SILICON NANOSTRUCTURES, T.R. Guilinger, M.J. Kelly, D.A. Redman, D.R. Tallant, J.C. Barbour, D.M. Follstaedt and E. Chason, DOE Surface Studies Conf./NM American Vacuum Society Symposium, Santa Fe, NM, 4/27-30/93, SAND93-0802A.

36. THE ROLE OF CURVED STEP EDGES IN THE BEHAVIOR OF NANOSCALE SYSTEMS, J.G. McLean, D.R. Peale, R. Phillips, E. Chason and B.H. Cooper, APS meeting 3/21-25/94, Pittsburgh, PA. SAND94-1656C

37. Si SURFACE MODIFICATION BY LOW-ENERGY ION SPUTTERING, P. Bedrossian, E. Chason, T. Klitsner and S.T. Picraux, Conf. on Computer Simulation of Radiation Effects in Solids, July 25-29, 1994, Santa Barbara, CA.SAND94-1654C

38. NON-DESTRUCTIVE CHARACTERIZATION OF POROUS SILICON USING X-RAY REFLECTIVITY, E. Chason, T.R. Guilinger, M.J. Kelly, T.J. Headley and A.J. Howard, Materials Research Society Fall Meeting 1994, 11/28 - 12/2, Boston, MA, SAND94-1653C.

39. DEFECT PRODUCTION AND RECOMBINATION DURING OW-ENERGY ION BOMBARDMENT, B.K. Kellerman, J.A. Floro, E. Chason, D.K. Brice and S.T. Picraux, AVS Fall Meeting, 1994, Denver, CO, 10/24-28/94.

40. NUCLEATION PHENOMENA IN THE CHEMICAL VAPOR DEPOSITION OF IRON ON Si (001), T.M. Mayer, L.L. Tedder, D.P. Adams, B.S. Swartzentruber and E. Chason, AVS Fall Meeting, 1994, Denver, CO, 10/24-28/94.

41. THE MICROSCOPIC ORIGINS OF CURVATURE DRIVEN BEHAVIOR, J.G. McLean, B. Krishnamarchi, E. Chason and B.H. Cooper, AVS Fall Meeting, 1994, Denver, CO, 10/24-28/94.

42. ENERGY DISPERSIVE X-RAY REFLECTIVITY CHARACTERIZATION OF SEMICONDUCTOR HETEROSTRUCTURES AND INTERFACES, E. Chason, T. M. Mayer, Z. Matutinovic-Krstelj and J.C. Sturm, NIST Semiconductor Characterization Workshop, NIST, Gaithersburg, MD, 1/30-2/2/95.

43. MORPHOLOGY EVOLUTION AND ION-INDUCED SURFACE TRANSPORT DURING SPUTTERING, T.M. Mayer, E. Chason, B.K. Kellerman and A.J. Howard, Optical Society of America Conference on Microphysics of Surfaces, Santa Fe, NM, 2/9-11//95

44. DEVELOPMENT OF SURFACE MORPHOLOGY DURING THE INITIAL STAGES OF CVD GROWTH, D.P. Adams, T.M. Mayer, B.S. Swartzentruber and E. Chason, Optical Society of America Conference on Microphysics of Surfaces, Santa Fe, NM, 2/9-11/95.

45. DEVELOPMENT OF SURFACE MORPHOLOGY DURING THE INITIAL STAGES OF CVD GROWTH, T.M. Mayer, D.P. Adams, B.S. Swartzentruber and E. Chason, AVS Florida Chapter Symposium, 2/6-8/95.

46. SMOOTHING DURING ION-ASSISTED GROWTH BY TRANSIENT ION BEAM-INDUCED DEFECTS, B.K. Kellerman, E. Chason, J.A. Floro and S.T. Picraux, New Mexico Section Meeting of the AVS, 4/11-13/95, Albuquerque, NM

47. INITIAL STAGES OF METAL CHEMICAL VAPOR DEPOSITION ONTO Si, D.P. Adams, T.M. Mayer, B.S. Swartzentruber and E. Chason, New Mexico Section Meeting of the AVS, 4/11-13/95, Albuquerque, NM.

48. SMOOTHING DURING ION-ASSISTED GROWTH BY TRANSIENT ION BEAM-INDUCED DEFECTS, B.K. Kellerman, E. Chason, J.A. Floro and S.T. Picraux, Materials Research Society Spring Meeting, 4/17-21/95, San Francisco, CA.

49. THE ROLE OF CURVED STEP EDGES IN THE BEHAVIOR OF NANOSCALE SYSTEMS, J.G. McLean, B.H. Cooper and E. Chason, APS meeting, San Jose, CA, 3/20-24/95.

50. LOW ENERGY ION ENHANCEMENT OF SURFACE PROCESSES, E. Chason, DOE Council on Materials Panel Study on New Directions for Ion Beams in Semiconductor Processing, 5/4-7/95, Santa Fe, NM.

51. *IN SITU* X-RAY REFLECTIVITY INVESTIGATION OF ION CHEMICAL VAPOR DEPOSITION ON Si (001), B. K. Kellerman, E. Chason, D. P. Adams, and T. M. Mayer, 42nd National Symposium of the American Vacuum Society, Minneapolis, MN, 10/16-20/95. SAND95-1058A.

52. ENERGETIC ION BEAMS IN SEMICONDUCTOR PROCESSING: SUMMARY OF A DOE PANEL STUDY, E. Chason and S. T. Picraux, 1995 Materials Research Society Fall Meeting, Boston, MA, 11/27-12/1/95. SAND95-1453A.

53. STRAIN RELAXATION OF SiGe ALLOYS MEASURED IN REAL TIME DURING MBE GROWTH, J. A. Floro, E. H. Chason, and S. R. Lee, 1995 Fall Symposium of the Materials Research Society, Boston, MA, 11/27-12/1/95. SAND95-1731A.

54. SPUTTER ROUGHENING INSTABILITY ON THE GE (001) SURFACE: ENERGY AND FLUX DEPENDENCE, E. Chason, B. K. Kellerman, and T. M. Mayer, 1995 Materials Research Society Fall Meeting, Boston, MA, 11/27-12/1/95. SAND95-1454A.

55. *IN SITU* INVESTIGATION OF THE EVOLUTION OF GROWTH RATE AND SURFACE MORPHOLOGY DURING Fe CHEMICAL VAPOR DEPOSITION ON Si(001), B. K. Kellerman, E. Chason, D. P. Adams, and T. M. Mayer, 1995 Materials Research Society Fall Meeting, Boston, MA, 11/27-12/1/95. SAND95-1574A.

56. EARLY STAGES OF METAL FILM GROWTH BY CHEMICAL VAPOR DEPOSITION, D. P. Adams, T. M. Mayer, B. S. Swartzentruber, E. Chason, D. Chrzan, and S. G. Bales, 1995 Materials Research Society Fall Meeting, Boston, MA, 11/27-12/1/95. SAND95-2161A.

57. ENERGETIC ION BEAMS IN SEMICONDUCTOR PROCESSING: SUMMARY OF A DOE PANEL STUDY, E. Chason and S. T. Picraux, DOE Council on Materials Meeting, Gaithersburg, MD, 12/14/95. SAND95-1453C.

58. KINETICS OF SURFACE AND THIN FILM MORPHOLOGY EVOLUTION, E. Chason, NM-AVS Meeting, Albuquerque, NM, 4/2-4/96. SAND94-2615A.

59. MEASUREMENT OF STRESS EVOLUTION DURING THIN FILM DEPOSITION, E. Chason and J. A. Floro, 1996 Spring Meeting of the Materials Research Society, San Francisco, CA, 4/8-12/96. SAND95-2564A.

60. REAL TIME MEASUREMENTS OF ELASTIC AND PLASTIC STRAIN KINETICS DURING SiGe MBE GROWTH, J. A. Floro, E. Chason, and S. R. Lee, Spring 1996 MRS Meeting, San Francisco, CA, 4/8-12/96. SAND96-0863A.

61. MONTE CARLO SIMULATIONS OF ION-ASSISTED GROWTH: ENHANCEMENT OF ISLAND COARSENING AND STEP FLOW, E. Chason and B. K. Kellerman, Ion Beam Modification of Materials 96, Albuquerque, NM, 9/1-6/96. SAND96-0893A.

62. EFFECT OF NUCLEATION RATE ON SURFACE ROUGHNESS EVOLUTION DURING CVD, E. Chason and T. M. Mayer, 1996 Fall Materials Research Society Meeting, Boston, MA, 12/2-6/96. SAND96-1713A.

63. REAL TIME MEASUREMENTS OF STRAIN EVOLUTION DURING THIN FILM HETEROEPITAXY, J. A. Floro and E. Chason, Materials Research Society 1996 Fall Meeting, Boston, MA, 12/2-6/96. SAND96-2070A.

64. EVOLUTION OF THIN FILM MICROSTRUCTURE AND MORPHOLOGY DURING CHEMICAL VAPOR DEPOSITION, D. P. Adams, T. M. Mayer, E. Chason, and B. S. Swartzentruber, TMS Annual Meeting, Orlando, FL, 2/9-13/97. SAND96-2639A.

65. STRESS MONITORING DURING THIN FILM GROWTH, J. A. Floro and E. Chason, TMS Annual Meeting, Orlando, FL, 2/9-13/97. SAND97-0192A.

66. DECAY OF ISOLATED SURFACE FEATURES DRIVEN BY THE GIBBS-THOMSON EFFECT IN ANALYTIC MODEL AND SIMULATION, J. G. McLean, B. Krishnamachari, D. R. Peale, E. Chason, J. P. Sethna, and B. H. Cooper, 213th National American Chemical Society Meeting, San Francisco, CA, 4/13-17/97 (*Invited*)

67. STRAIN SCALING AND SHAPE TRANSITIONS DURING SiGe/Si ISLAND EVOLUTION, Eric Chason, Jerry Floro, M. Sinclair, R.Q. Hwang, R.D Twesten, L.B. Freund, J. Hunter and B. McKenzie, Materials Research Society Fall Meeting, Boston, MA, 12/1-5/97.

68. EVOLUTION OF SELF-ORGANIZED SiGe ISLAND ARRAYS, Jerry Floro, Eric Chason, M. Sinclair, R.Q. Hwang, J.A. Hunter, R.D Twesten and L.B. Freund, Materials Research Society Fall Meeting, Boston, MA, 12/1-5/97 (invited).

69. ACCELERATING ISLAND COARSENING DURING SiGe MBE, Jerry Floro, Eric Chason, M. Sinclair, J.A. Hunter, G.A. Lucadomo, K. Barmak and L.B. Freund, Materials Research Society Spring Meeting, San Francisco, CA, 4/13-17/98.

70. SPUTTER RIPPLING KINETICS OF SI(001), J. Erlebacher, E. Chason, and M.J. Aziz, Materials Research Society Fall Meeting, Boston, MA 11/30-12/1/98.

71. ANNEALING OF NANO-RIPPLED SI(001) AT LOW TEMPERATURE, J. Erlebacher, M.J. Aziz, E. Chason, and J.A. Floro, Materials Research Society Fall Meeting, Boston, MA 11/30-12/1/98..

72. EVOLUTION OF STRESS AND MICROSTRUCUTRE EVOLUTION DURING DEPOSITION OF THIN METAL FILMS, S. Hearne E. Chason, J.A. Floro, J.A. Hunter and I. Tsong, Materials Research Society Fall Meeting, Boston, MA 11/30-12/1/98..

73. REAL-TIME X-RAY SCATTERING FROM SURFACE RIPPLES ON SIO2 FORMED DURING ION SPUTTERING, C.C. Umbach, J.M. Blakey, B.H. Cooper, R.L. Headrick, E. Chason, Materials Research Society Fall Meeting, Boston, MA 11/30-12/1/98.

74. PARTICLE DEFECT REDUCTION IN THE ENDURA TIN PVD SYSTEM: SHIELD STRESS MEASUREMENTS, J. Hunter, J. Ohlhausen, D. Peebles, E. Chason, Semiconductor Process Analysis, Characterization and Control, San Antonio, TX, 1/24-27/99

75. MECHANISMS OF SURFACE SMOOTHING DURING SPUTTER-INDUCED RIPPLE FORMATION ON SIO2, C.C. Umbach, R.L. Headrick, B.H. Cooper, J.M. Blakely, E. Chason, American Physical Society, Atlanta, GA, 3/22-26/99

76. STRESS EVOLUTION DURING MOVPE OF GAN, S.J. Hearne, E. Chason, J. Han, J.A. Floro, J.J. Fiegel, J. Hunter, Materials Research Society, San Francisco, 4/5-9/99

77. IN SITU MONITORING OF STRESS/STRAIN DURING ALGAN/GAN MOCVD, J. Han, S.J. Hearne, E. Chason, J.A. Floro, J.J. Fiegel, J. Hunter, 9th Biennial OMVPE Workshop, Ponte Vedra Beach, FL, 5/23/99

78. REAL-TIME MEASUREMENTS OF STRESS RELAXATION IN InGaAs/GaAs, R. Beresford, J. Yin, K. Tetz, E. Chason, North American MBE Conference, Banf, Canada, 10/99

79. TENSILE STRESS GENERATION, FRACTURE AND DISLOCATIONS IN III-NITRIDES, J. Floro, S. Hearne, J. Han, D.M. Follstaedt, S.R. Lee, J. Fiegel, E. Chason, and I. Tsong, Materials Research Society Fall Meeting, Boston, MA 11/29-12/3/99

80. THE DIRECT CORRELATION BETWEEN ISLAND COALESCENCE AND TENSILE STRESS GENERATION DURING POLYCRYSTALLINE AG FILM DEPOSIITON, S. Hearne, J. Floro, J. Hunter, E. Chason, and I. Tsong, Materials Research Society Fall Meeting, Boston, MA 11/29-12/3/99

81. A STUDY OF CRYSTALLINE TRANSFORMATION AND MECHANICAL PROPERITES OF INDIUM TIN OXIDE, D. Sparacin, D.R. Cairns, E. Chason, G.P. Crawford, D.C. Paine, Connecticut Microelectronics and Optoelectronics Symposium, March 14, 2000.

82. A STUDY OF THE AMORPHOUS TO CRYSTALLINE PHASE TRANSFORMATION IN INDIUM TIN OXIDE, D.C. Paine, D. Sparacin, E. Chason, H.-Y. Yeom, Electronic Materials Conference, Denver, CO, June 21-23, 2000.

83. DYNAMIC MEASUREMENTS OF STRESS RELAXATION IN NANOSTRUCTURES, E. Chason, L.B. Freund, J.A. Floro, ASME meeting, Orlando, FL, Oct. 2000

84. MECHANICAL INTERACTIONS OF ISLANDS ON A SUBSTRATE, L.B. Freund, E. Chason, ASME meeting, Orlando, FL, Oct. 2000

85. DISLOCATION STRUCTURE AND RELAXATION KINETICS IN INGAAS/GAAS HETEROEPITAXY, Candace L. Lynch, Eric Chason, R. Beresford, Eric B. Chen, and David C. Paine, North American MBE Conference, Providence, RI Oct. 2001

86. TEMPERATURE-DEPENDENT RELAXATION BEHAVIOR OF InGaAs/GaAs INVESTIGATED BY IN-SITU STRESS MONITORING, C. Lynch, E. Chason, R. Beresford, K. Tetz, MRS Fall 2001, Boston

87. ISLAND SIZE EFFECTS ON INTRINSIC STRESS EVOLUTION IN III-V NITRIDE THIN FILMS. Ashok Rajamani, R. Beresford, K.H.A. Lau, E. Chason, B.W. Sheldon, , MRS Fall 2001, Boston

88. CALCULATIONS FOR COMPRESSIVE STRESS EVOLUTION DURING THIN FILM GROWTH, P. Guduru, E. Chason, L.B. Freund, Gordon Conference on Mechanical Properties of Thin Films, July, 2002.

89. COMPOSITION DEPENDENCE OF DISLOCATION-MEDIATED STRAIN RELAXATION IN InGaAs/GaAs HETEROEPITAXY, R. Beresford, C. Lynch, E. Chason, MBE XII, 2002

90. MEASUREMENT OF STRESS EVOLUTION IN BIMETALLIC CU-SN THIN FILMS, L. Kabakian, S. Kumar, E. Chason, MRS Fall 2002 meeting, Boston, MA

91. COMPRESSIVE AND TENSILE INTRINSIC STRESS EVOLUTION IN ALUMINUM NITRIDE FILMS, A. Rajamani, S. Hong, A. Bhandari, R. Beresford, E. Chason, B.W. Sheldon, MRS Fall 2002 meeting, Boston, MA

92. INFLUENCE OF GROWTH FLUX ON THE STRAIN RELAXATION RATE OF InGaAs/GaAs STRAIN RELAXATION, C. Lynch, E. Chason, R. Beresford, S.K. Hong, MRS Fall 2002 meeting, Boston, MA

93. A STRUCTURAL STUDY OF THE AMORPHOUS TO CRYSTALLINE TRANSFORMATION IN IN_2O_3 THIN FILMS, B.Yaglioglu, H.-Y. Yeom, E. Chason, D. C. Paine, Mat. Res. Fall 2002

94. OBSERVATION OF ION-INDUCED RIPPLES IN CU(001)**,** Wai Lun Chan, Niravun Pavenayotin, Eric Chason, MRS Spring 2003

95. MECHANICS OF COMPRESSIVE STRESS EVOLUTION DURING THIN FILM GROWTH. P.R. Guduru, E. Chason, L.B. Freund, MRS Spring Meeting, 4/22-25/2003, San Francisco

96. REAL-TIME STRAIN EVOLUTION DURING GROWTH OF $In_x Al_{1-x}$ As/GaAs METAMORPHIC BUFFER LAYERS, C. Lynch, R. Beresford, E. Chason, North American MBE Conference, 9/28-10/2/2003, Keystone, CO.

97. TEMPERATURE DEPENDENCE OF SPUTTER RIPPLES ON CU(001) SURFACES, W.L. Chan and E. Chason, MRS Fall Meeting, 12/1-4/2003, Boston, MA.

98. STRAIN RELAXATION AND KINK NUCLEATION DURING InGaAs/GaAs GROWTH, C. Lynch, R. Beresford, E. Chason, MRS Fall Meeting, 12/1-4/2003, Boston, MA.

99. KINETIC MECHANISMS OF COMPRESSIVE AND TENSILE STRESS EVOLUTION IN VAPOR-DEPOSITED THIN FILMS, B.W. Sheldon, A. Rajamani, A. Bhandari, H. Li R. Beresford, E. Chason, J. Rankin, MRS Fall Meeting, 12/1-4/2003, Boston, MA

100. MORPHOLOGY OF ION SPUTTERED CU(001) SURFACE: TRANSITION FROM UNIDIRECTIONAL ROUGHENING TO BIDIRECTIONAL ROUGHENING, Wai Lun Chan, Eric Chason, IBMM, Monterey, CA, 9/5-10/2004.

101. ENHANCED STRAIN RELAXATION RATE OF INGAAS BY ADATOM-ASSISTED DISLOCATION KINK NUCLEATION, Candace Lynch, Eric Chason, Rod Beresford, Soon-Ku Hong, North American MBE Conf. (NAMBE) Oct. 2004, Banff, Canada,

102. COMPETITION BETWEEN TENSILE AND COMPRESSIVE STRESS MECHANISMS DURING THE VOLMER-WEBER GROWTH OF POLYCRYSTALLINE FILMS, Abhinav Bhandari, Brian W. Sheldon, Eric Chason, and Rod Beresford, , MRS Fall Meeting, 11/29-12/3/2004, Boston, MA

103. USING *IN SITU* STRESS MEASUREMENT TO UNDERSTAND THE FACTORS CONTROLLING RELAXATION, DISLOCATION VELOCITY, AND DISLOCATION DENSITY DURING III-V HETEROEPITAXY, Candace Lynch, Eric Chason, Rod Beresford, Klaus Schwarz, , MRS Fall Meeting, 11/29-12/3/2004, Boston, MA

104. SPUTTERED MORPHOLOGY OF CU(001) SURFACE IN DIFFERENT TEMPERATURE-FLUX PHASE SPACE,Wai Lun Chan, Eric Chason, MRS Fall Meeting, 11/29-12/3/2004, Boston, MA

105. WHISKER FORMATION IN SN COATINGS ON CU, Eric Chason, Lucine Kabakian and Sharvan Kumar , MRS Fall Meeting, 11/29-12/3/2004, Boston, MA

106. COUPLING BETWEEN INTERFACIAL REACTIONS AND STRESS EVOLUTION IN SN-CU THIN FILM SYSTEMS, L. Kabakian, E. Chason, S. Kumar, MRS Fall Meeting, 11/29-12/3/2004, Boston, MA

107. MORPHOLOGICAL PHASE DIAGRAM OF SPUTTERED CU(001) SURFACE: MEASUREMENT OF THE INTERPLAY BETWEEN ROUGHENING AND RELAXATION, Wai Lun Chan and Eric Chason, WE-Heraeus-Seminar: "Ions at Surfaces: Patterns and Processes", Bad Honnef, Germany, June 19-23, 2005.

108. MORPHOLOGICAL EVOLUTION AND NON-EQUILIBRIUM RELAXATION KINETICS DURING SPUTTER RIPPLE FORMATION, W.L. Chan and E. Chason, Fall 2005 meeting, MRS, Boston, 11/28-12/-2/2005.

109. MEASUREMENT OF STRESS IN THIN CU FOIL DURING LOW ENERGY ION BOMBARDMENT, Wai Lun Chan, Eric Chason, C. Iamsumang, Ion Beam Modification of Materials (IBMM) 2006, Taormina, IT, 9/18-22/2006.

110. WHISKER FORMATION IN SN COATINGS ON CU, L. Reinbold, K.S. Kumar, E. Chason, Materials Science and Technology meeting, Cincinatti OH, 10/15-19/2006

111. CONTINUOUS RIBBONS OF SINGLE CRYSTAL NI FILMS FOR HTSC SUBSTRATES, J.W. Shin, A. Standley, E. Chason, WIRE07 workshop, Panama City, 1/16-17/2007.

112. ORIENTATION OF NANO-GRAINS IN HARD-DISK MEDIA ON ION-BEAM TEXTURED SUBSTRATES, Y. Maekawa, K. Sato, E. Chason and T. Mizoguchi, MMM/Intermag meeting, Baltimore 1/7-11/2007

113. STRESS EVOLUTION IN SN LAYERS ON CU, N. Jadhav, L. Reinbold, V. Kelly, J.W.Shin, A. Johnson, M. Task, K.S. Kumar, E. Chason, MRS Spring 2007, San Francisco

114. FREE STANDING NI SINGLE CRYSTAL FILM FOR SUBSTRATE OF HIGH TEMPERATURE SUPERCONDUCTOR (HTS), J. W. Shin, A. Standley. E. Chason, MRS Spring 2007, San Francisco

115. MODELING INTERMETALLIC GROWTH KINETICS IN SN LAYERS ON Cu, E. Buchovecky, R. Hariharaputran, L. Reinbold, N. Jadhav, E. Chason, K.S. Kumar, MRS Spring 2007, San Francisco

116. INTERMETALLIC GROWTH KINETICS IN CU-SN BI-LAYER THIN FILMS, L. Reinbold, K.S. Kumar and E. Chason, CALCE International Symposium on Tin Whiskers, U. of Maryland, 5/24-25/2007

117. DETERMINING AND CONTROLLING THE FUNDAMENTAL MECHANISMS OF SPUTTER RIPPLE Formation, E. Chason, DOE Contractor's meeting, Synthesis and Processing Program, July 8-11, 2007, Maryland

118. LARGE AREA SINGLE CRYSTAL SUBSTRATES PRODUCED BY EPITAXIAL ELECTRODEPOSITION, J. W. Shin, A. Standley, E. Chason, 15th Int'l. Conf. on Cryst. Growth, Salt Lake City, UT, 8/12-17/2007

119. TOPOGRAPHY EFFECTS OF MICRO/NANO CRYSTALLIZED DIAMOND ON ENHANCING OSTEOBLAST ADHESION Lei Yang, T. J. Webster, B. W. Sheldon, E. Chason, AICHE 2007, Salt Lake City Nov. 4-9 2007.

120. MECHANISM OF ORIENTATION RATIO OF LONGITUDINAL RECORDING MEDIA, K. Sato, Y. Maekawa, T. Mizoguchi, E. Chason, Magnetic Society of Japan, 9/11-14/2007, Japan"

121. ROLE OF GRAIN BOUNDARY DIFFUSION IN COMPRESSIVE RESIDUAL STRESS: MEASUREMENTS IN VERY HIGH MOBILITY SN FILMS, E. Chason, J. W. Shin, AACG West Conference, Lake Tahoe, CA, June 9-11, 2008

122. LARGE AREA SINGLE CRYSTAL FOILS GROWN BY EPITAXIAL ELECTRODEPOSITION, J.W. Shin, A. Standley, E. Chason, Gordon Research Conference on Electrodeposition, New London, NH, July 29, 2008

123. LARGE AREA SINGLE CRYSTAL FOILS GROWN BY EPITAXIAL ELECTRODEPOSITION, Eric Chason, Adam Standley, Meifang Li and Jae Wook Shin, MRS Fall 2008, Boston, MA Dec. 3, 2008.

124. STRESS RELAXATION KINETICS IN SN AND PB-SN LAYERS, Jae Wook Shin, J. Wasserman, N. Jadhav, E. Chason, TMS Spring Meeting, San Francisco, CA 2/15-19/2009

125. FINITE ELEMENT ANALYSIS OF STRESS EVOLUTION AND WHISKER GROWTH KINETICS IN SN FILMS, Eric Buchovecky, Nitin Jadhav, Allan Bower, Eric Chason, TMS Spring Meeting, San Francisco, CA 2/15-19/2009

126. STRESS DISTRIBUTION IN SN-CU LAYERS AND ITS RELATION TO WHISKER FORMATION, Nitin Jadhav, Eric Chason TMS Spring Meeting, San Francisco, CA 2/15-19/2009

127. IN SITU MULTI-BEAM OPTICAL STRESS SENSOR (MOSS) MEASUREMENT FOR LOW STRESS DEPOSITION, A.A Navid, A.J Detor, E. Chason, A.M. Hodge, MRS Spring 2009

128. MECHANISMS OF SN WHISKER GROWTH, Nitin Jadhav, E. Buchovecky, A. F. Bower, S. Kumar, E. Chason, Gordon Research Conference on Thin Films and Crystal Growth, New London, NH, July 2009.

129. CONTINUOUS ELECTROCHEMICAL PROCESS FOR GROWING LARGE AREA SINGLE CRYSTAL SUBSTRATES, Meifang Li, Jae Wook Shin, Eric Chason, Gordon Research Conference on Thin Films and Crystal Growth, New London, NH, July 2009.

130. STRESS DUE TO LOW ENERGY AR ION BOMBARDMENT: RELATION TO RIPPLE FORMATION, Yohei Ishii, Vivek Shenoy and Eric Chason, MRS Fall meeting, Boston MA, Dec. 2009.

131. LARGE AREA SINGLE CRYSTAL SUBSTRATES FOR GROWING GRAPHENE, Meifang Li, Jae Wook Shin and Eric Chason , MRS Fall meeting, Boston MA, Dec. 2009.

132. LARGE AREA SINGLE CRYSTAL SUBSTRATES FOR PRODUCTION OF PHOVOLTAICS, Meifang Li, Jae Wook Shin and Eric Chason, MRS Fall meeting, Boston MA, Dec. 2009.

133. REAL-TIME SEM/FIB STUDIES OF WHISKER GROWTH AND SURFACE MODIFICATION, Nitin Jadhav, Eric Chason, TMS Spring 2010, Pb-Free Solders and Emerging Interconnect and Packaging Technologies

134. SYNCHROTRON MICRODIFFRACTION STUDY OF LOCALIZED STRESS AND SURFACE EVOLUTION IN SN-CU SYSTEM, Eric Chason, Nitin Jadhav, Eric Buchovecky, Allan Bower, Gene E. Ice, Jon Tischler, Wenjun Liu, TMS Spring 2010, Pb-Free Solders and Emerging Interconnect and Packaging Technologies

135. EVALUATION OF THERMAL AND INTRINSIC STRESS IN COPPER AND TANTALUM SPUTTERED FILMS: Anahita Navid, Eric Chason, Andrea Hodge, TMS Spring 2010, Seattle, WA

136. KINETIC MONTE CARLO SIMULATION OF RIPPLE FORMATION BY SPUTTERING: EFFECTS OF MULTIPLE DEFECTS AND EHRLICH-SCHWOEBEL BARRIERS, Yohei Ishii, Wai Lun Chan and Eric Chason, IBMM 2010, Montreal CA

137. FIB/SEM STUDIES OF HOW WHISKERS AND HILLOCKS NUCLEATE AND GROW, Nitin Jadhav, Fei Pei, Eric Chason, MS&T , Houston TX, Oct. 18-22, 2010

138. EFFECT OF SN LAYER ON WHISKER GROWTH KINETICS: MODIFYING THE SURFACE, MICROSTRUCTURE, COMPOSITION AND HEAT TREATMENT, Fei Pei, Gordon Barr, Eric Chason, Nitin Jadhav, TMS 2011

139. THICK BERYLLIUM COATINGS BY MAGNETRON SPUTTERING, Hongwei Xu, Abbas Nikroo, Kelly Youngblood, Kari Moreno, Dan Wu, and Tim Fuller, Craig Alford, Jeff Hayes, Andy Detor, Morris Wang, Alex Hamza, and Tony van Buuren, Eric Chason, MRS Spring 2011, San Francisco

140. GROWING LARGE AREA SINGLE CRYSTAL SUBSTRATES THROUGH CONTINUOUS ELECTROCHEMICAL PROCESS, Meifang Li, Deepa Vairavapandian, E. Chason, Gordon Research Conference on Thin Films and Crystal Growth, Biddeford, Maine, 7/17-21/2011.

141. STRESS EVOLUTION IN SI (001) DURING LOW ENERGY ION BOMBARDMENT: DEFECT CREATION/ANNIHILATION PROCESSES AND VISCOUS RELAXATION, Yohei Ishii, E. Chason, Gordon Research Conference on Thin Films and Crystal Growth, Biddeford, Maine, 7/17-21/2011.

142. RIPPLE FORMATION AND VISCOUS FLOW ON SI (001) DURING LOW ENERGY AR ION BOMBARDMENT, Yohei Ishii1 and Eric Chason, MRS Fall Meeting, Boston, 2011

143. LARGE AREA ELECTRODEPOSITED NICKEL SINGLE CRYSTAL SUBSTRATES FOR MICROELECTROMECHANICAL SYSTEMS, Meifang Li,and Eric Chason MRS Fall Meeting, Boston, 2011

144. LARGE AREA ELECTRODEPOSITED NICKEL SINGLE CRYSTAL SUBSTRATES FOR PHOTOVOLTAICS, Meifang Li and Eric Chason, MRS Fall Meeting, Boston, 2011

145. MECHANICS OF WHISKER FORMATION IN SN-BASED COATINGS, Fei Pei, Nitin Jadhav, Eric Chason, MRS Fall Meeting, Boston, 2011

146. UNDERSTANDING THE VARIATION IN MECHANICAL PROPERTIES OF SN, FILMS WITH ALLOYING AND MODIFICATION OF MICROSTRUCTURE, Nitin Jadhav, Maureen Williams , Fei Pei, Gery Stafford , Eric Chason, TMS Annual Meeting & Exhibition, Mar. 11-15, 2012 Orlando, FL

147. REAL-TIME STUDY OF WHISKER FORMATION IN TIN/COPPER SYSTEMS BY EBSD CHARACTERIZATION, Fei Pei, Nitin Jadhav, Eric Chason, TMS Annual Meeting & Exhibition, Mar. 11-15, 2012 Orlando, FL

148. IN-SITU MEASUREMENT OF STRESS EVOLUTION AND ION DYNAMICS IN CONDUCTING POLYMERS, Sujat Sen, Shenghua Jin, Sung-yeol Kim , Lia Palmore, Nitin Jadhav, Eric Chason and G.Tayhas.R.Palmore, MRS Spring 2012, San Francisco

149. STUDYING TIN AS AN ANODE MATERIAL IN LI-ION BATTERIES: IN SITU MEASUREMENTS OF STRESS EVOLUTION IN TIN THIN FILMS DURING ELECTROCHEMICAL LITHIATION AND DELITHIATION, Nitin Jadhav; Vijay A. Sethuraman; Chun-Hao Chen; Eric Chason; Vivek B. Shenoy; Pradeep R. Guduru, MRS Fall Meeting, Boston, MA 11/24-28/2012

150. IN SITU OBSERVATION OF THE GRAPHENE DOMAIN SHAPE ON NI(111) SINGLE CRYSTAL FILMS, Meifang Li, Jiebing Sun, James B Hannon, Rudoff M Tromp, and Eric Chason, , APS March meeting, 2013

151. STRESS EVOLUTION AND PLASTIC DEFORMATION IN METALLIC ANODES FOR LITHIUM-ION BATTERIES, Nitin Jadhav, Chun-Hao Chen, S.P.Nadimpalli, V.A.Sethuraman, Eric Chason, Pradeep R. Guduru, Int'l Conf on Plasticity, 2013

152. AN INVESTIGATION OF STRESS EVOLUTION AND PROGRESSIVE PHASE TRANSFORMATIONS IN TIN DURING ELECTROCHEMICAL Lithiation Cycling, "Mechanics in Materials Science" by Chun-Hao Chen, E. Chason, P. Guduru (SES, July 2013, Providence RI).

153. A KINETIC MODEL OF STRESS EVOLUTION IN THIN FILMS, Eric Chason, (SES, July 2013, Providence RI).

154. MODEL FOR GROWTH STRESS IN POLYCRYSTALLINE FILMS, Eric Chason, Chun-Hao Chen, Alison Engwall, Jae-Wook Shin , Sean Hearne, MRS Fall meeting, Boston, MA, Dec. 6, 2013

155. USING APPLIED MECHANICAL STRESS TO UNDERSTAND TIN WHISKER/HILLOCK FORMATION, Fei Pei, Eric Chason , TMS San Diego, February 2014

156. MECHANICAL AND WHISKERING BEHAVIORS OF SN AND SN-CU SYSTEMS DURING THERMAL CYCLING, Eric Chason and Fei Pei, TMS San Diego, February 2014

157. PHASE KINETICS AND MECHANICAL PROPERTY OF SN ANODE IN LITHIUM-ION BATTERY DURING ELECTROCHEMICAL Lithiation, Chun-Hao Chen, Eric Chason, Pradeep Guduru, MRS Spring 2015

158. MODEL FOR GROWTH STRESS IN POLYCRYSTALLINE FILMS: COMPARISON WITH GROWTH ON LITHOGRAPHICALLY-PATTERNED AND RANDOMLY-NUCLEATED FILMS, Eric Chason, Chun-Hao Chen, Alison Engwal, Jae-Wook Shin , Sean Hearne, L.B. Freund, ICMCTF 2014

159. EXPERIMENTAL AND MODELING STUDY OF MECHANICAL PROPERTY AND PROGRESSIVE PHASE TRANSFORMATIONS IN TIN DURING ELECTROCHEMICAL CYCLING, Chun-Hao Chen, Eric Chason, Pradeep Guduru,MRS 2014, Spring meeting, San Francisco, CA

160. GROWTH STRESS IN POLYCRYSTALLINE FILMS: THE TRIPLE JUNCTION MODEL FROM NANO- TO MICRO SCALE, Alison Engwall, Eric Chason, Chun-Hao Chen, Jae-Wook Shin , Sean Hearne, Noel Buckley, MRS Fall meeting, 12/1/2014, Boston, MA

161. PHASE KINETICS AND MECHANICAL PROPERTY OF SN ANODE IN LITHIUM-ION BATTERY DURING ELECTROCHEMICAL LITHIATION, Chun-Hao Chen, Eric Chason, Pradeep Guduru, MRS Spring 2015

162. SN WHISKER FORMATION AS A STRESS-INDUCED NUCLEATION AND GROWTH PROCESS, Eric Chason and Fei Pei, Presented in "Latest Findings in Tin Whiskers in Electronics Webinar", sponsored by High Density Packaging User's group, Oct. 29, 2015 (appr. 190 attendees)

163. EXPERIMENTAL AND MODELING CHARACTERIZATION OF MECHANICS AND PHASE KINETICS OF SN ANODE IN LITHIUM-ION BATTERY, Chun-Hao Chen, Srivatsan Hulikal, Eric Chason, Allan Bower, Pradeep Guduru, SES, Texas A&M, Oct. 26, 2015.

164. THIN FILM GROWTH STRESS FROM GRAIN BOUNDARY FORMATION, Alison Engwall, Zhaoxia Rao, Eric Chason, MRS Fall meeting, Boston, Dec. 2015.

165. STRESS-ENHANCED NUCLEATION AND GROWTH OF SN WHISKERS, Eric Chason, Sn Whisker weekly Telecon, Dec. 9, 2015

166. KINETICS OF PHASE TRANSFORMATION DURING LITHIATION OF SN ELECTRODE MATERIALS, C.-H. Chen, S. Hulikal, E. Chason, A.F. Bower, P. R. Guduru, TMS, Nashville TN, Feb. 2016

167. RESIDUAL STRESS IN THIN FILMS: EFFECT OF GROWTH RATE AND GRAIN SIZE, E. Chason, A.M. Engwall, Z. Rao, TMS, Nashville TN, Feb. 2016.

168. EXPERIMENTAL AND MODELING CHARACTERIZATION OF MECHANICS AND PHASE KINETICS OF SN ANODE IN LITHIUM-ION BATTERY, Chun-Hao Chen, Srivatsan Hulikal, Eric Chason, Allan Bower, Pradeep Guduru, Gordon Conference, Feb. 2016

169. A KINETIC MODEL FOR STRESS IN SPUTTERED THIN FILMS, E. Chason, M. Karlson, J. J. Colin, D. Magnfalt, K. Sarakinos, G. Abadias, ICMCTF San Diego, May 2016.

170. IN-SITU ELASTIC PROPERTY MEASUREMENT OF SN ANODE IN LITHIUM-ION BATTERY DURING LITHIATION, Chun-Hao Chen, Eric Chason, Pradeep Guduru, MRS Fall meeting, Bosotn, Dec. 2016.

171. EXPERIMENTAL CALIBRATION OF A CAHN-HILLIARD PHASE-FIELD MODEL FOR PHASE TRANSFORMATIONS IN LI-SN ELECTRODES (*INVITED*), Srivatsan Hulikal, Chun-Hao Chen, Eric Chason, Pradeep Guduru, Allan Bower SES, U. of Maryland, Oct. 2016

172. QUANTIFYING THE ROLE OF STRESS IN WHISKER NUCLEATION AND GROWTH, Eric Chason, Fei Pei, Justin Vasquez and Andrew Hitt, TMS, San Diego, Feb 27 – Mar 3, 2017

173. RESIDUAL STRESS IN THIN FILMS: EFFECT OF PROCESSING CONDITIONS AND MICROSTRUCTURE
E. Chason, A.M. Engwall, Z. Rao, SVC 2017, Providence RI, April 29-May 4, 2017

174. IN-SITU MEASUREMENTS OF STRESS DURING ELECTRODEPOSITION OF COPPER NANOFILMS: EFFECTS OF DEPOSITION RATE AND GRAIN SIZE, D. Noel Buckley, J. A. Murphy, C. Lenihan, E. Chason and R. L. Lynch, ECS 2017 Washington DC, Sept. 2017, Oct. 10-4 2017.

175. EPITAXIAL LIFT-OFF OF ELECTRODEPOSITED SINGLE-CRYSTAL GOLD FOILS FOR FLEXIBLE ELECTRONICS, N. Kumar, Q. Chen, Y-C. Liu, A. Duchild, S. Hofheins, E. Chason J.A. Switzer, ACS (American Chemical Society) 2017 Midwest Regional Meeting (MWRM), Lawrence, KS, October 18-20, 2017.

176. ORIGINS OF RESIDUAL STRESS DURING THIN FILM GROWTH, E. Chason, TMS 2018, 3/11-15/2018, Phoenix, AZ.

177. IN SITU STUDIES OF WHISKER NUCLEATION INDUCED BY THERMAL STRAIN, Nupur Jain, Andrew Hitt, Justin Vasquez and Eric Chason, TMS 2018, 3/11-15/2018, Phoenix, AZ.

178. STRESS IN SPUTTERED METAL THIN FILMS: DEPENDENCE ON GROWTH RATE AND PRESSURE, Tyler Kaub, Zhaoxia Rao, Gregory Thompson, E. Chason, ICMCTF, 4/23-25/2018, San Diego CA.

179. KINETICS DEPENDENCE OF MICROSTRUCTURE AND STRESS EVOLUTIONS IN POLYCRYSTALLINE CU FILMS: REAL-TIME DIAGNOSTICS AND ATOMISTIC MODELLING, C. Furgeaud, C. Mastail, A.Michel, L. Simonot, E. Chason, G. Abadias, ICMCTF (Int'l Conf. on Metal Coatings and Thin Flms), San Diego, CA, 5/198-24/2019.

180. THE EFFECT OF GROWTH RATE AND GAS PRESSURE ON THE RESIDUAL STRESS EVOLUTION IN SPUTTERED NITRIDE FILMS, Zhaoxia Rao and Eric Chason, Gordon Research Conference on Crystal Growth and Assembly, Southern New Hampshire University, Manchester, NH, 6/23 – 28/ 2019.

181. WHISKER GROWTH KINETICS UNDER APPLIED PRESSURE, Piyush Jagtap, Nupur Jain, Allan Bower, Eric Chason, TMS 2020, San Diego CA 2/23-27/2020

182. KINETIC MODEL FITTINGS FOR THIN FILM DEPOSITION, Sarah Berman and Eric Chason, Gulf Coast Undergraduate Research Symposium (GCURS) sponsored by Rice U., 10/31/20 (virtual)

183. FINITE ELEMENT ANALYSIS MODELING OF STRESS EVOLUTION AND WHISKER GROWTH UNDER APPLIED PRESSURE, N. Jain; P. Jagtap; A. Bower; E. Chason, TMS 2021 Annual meeting (virtual), 3/15-18, 2021

184. KINETIC MONTE CARLO SIMULATIONS OF RESIDUAL STRESS EVOLUTION, E. Chason, A. Bower, ICMCTF 2021 (virtual), 4/26-29/2021

185. MEASUREMENTS AND MODELING OF RESIDUAL STRESS IN SPUTTERED NITRIDE FILMS: DEPENDENCE ON GROWTH RATE AND GAS PRESSURE, Z. Rao, E. Chason, ICMCTF 2021 (virtual), 4/26-29/2021

186. UNDERSTANDING RESIDUAL STRESS IN THIN FILMS: ANALYZING THE STRESS EVOLUTION USING A KINETIC MODEL FOR Ag, Cu, Ni, Fe, Ti, AND Cr, Z. Rao, S. Berman, D. Depla , E. Chason, ICMCTF 2021 (virtual), 4/26-29/2021

187. Effect of grain size and stress relaxation on whisker growth under applied pressure, Nupur Jain, Piyush Jagtap, Allan Bower, Eric Chason, TMS Annual meeting, 2/27/2022-3/2/2022, Anaheim, CA (delivered online)

188. Modeling of residual stress evolution in thin films: effects of growth kinetics, microstructural evolution and energetic particle, Eric Chason Tong Su, Zhaoxia Rao, Sarah Berman, Diederik Depla, ICMCTF International conference on thin films and metallurgical coatings: 5/22-27/2022, San Diego, CA (delivered by Diederik Depla, in person)

189. Whisker growth under controlled driving force. Piyush Jagtap, Nupur Jain, Allan Bower, and Eric Chason, 19th International Conference on Strength of Materials, June 26 - July 1, 2022, Metz, France (delivered by Piyush Jagtap in person)

Grants

j. Research in progress:

Topical areas

Continuing work:

a) Evolution of stress and microstructure in thin films

b) Processes controlling Sn whisker formation

c) Computer simulations of stress and surface evolution in thin films

6. Research Grants:

a. Current grants

1. NSF-DMR CER: Fundamental understanding of residual stress in binary and ternary nitride thin films: measurements and modeling, $660,284, 9/1/20 - 8/31/24
2. NSF DMR-MMN: Dependence of Sn whisker nucleation and growth on stress: real-time experiments and development of a predictive model, E. Chason, $477,057, 9/1/19-5/31/23

b. Completed grants

1. NSF DMR-Ceramics: Residual stress in nitride thin films: integrated experiments and development of a predictive mode, $587122, 07/1/16-5/31/21.
2. NSF: Sn whiskers: fundamental mechanisms of nucleation and growth and applications to mitigation, $420,000, 09/01/15 - 8/31/19
3. DOE-EPSCoR (Guduru, PI): Fundamental investigations of Mechanical and Chemical Degradation Mechanisms in Lithium In Battery Materials, $12,174,882, 9/15/11-9/14/17.
4. DOE-BES: A unified understanding of residual stress in thin films: kinetic models, experiments and simulations, $507K, 10/2012 – 11/30/17
5. NSF-DMR "Sn whisker nucleation and growth: fundamental mechanisms controlling where, when and why whiskers form on Sn coatings", $380K, 9/1/2012 – 8/31/2015
6. NSF-MRI: Acquisition of an Advanced X-ray Diffraction System for the Brown University X-ray Characterization Facility", (with IMNI) equipment only, 10/01/11-9/30/14, $466,612
7. DOE CINT User facility: Using growth of patterned thin films to understand residual stress evolution, User proposal, Sandia National Labs Center for Integrative Nanotechnology, 7/13 – 12/31/2014, no monetary award
8. Brown IMNI: "In situ measurement of stress in conducting polymers for improving the performance of plastic batteries", w/ Palmore (lead PI), $40K
9. IBM Faculty award for research on graphene growth on large area single crystal substrates, $15 K, 12/31/2011 – 12/31/2012
10. NSF: "Whisker formation in Sn coatings on Cu: fundamental mechanisms and approaches to mitigation", $270,422, 7/1/09 – 6/30/2012
11. DOE: "Mechanisms of Sputter Ripple Formation: Coupling among Energetic Ions, Surface Kinetics, Stress and Composition", w/ Shenoy, $422,735, 12/1/08 - 11/30/12 (no-cost extension)
12. MRSEC ($9,360K w/ 19 faculty): "Micro- and Nano- Mechanics of Materials"; 10/1/05 – 8/31/12
13. Karen T. Romer Undergraduate Teaching and Research Awards (UTRA), support for Mani Askari $3K, Summer 2011
14. APS Light source at Argonne National Lab, "Relation of stress evolution to whisker formation in Sn layers on Cu", allocated 2 weeks of beam time
15. Brookhaven National Labs, Center for Nanofunctional Materials, collaborative research project, "Epitaxial growth on large-area metal single crystal substrates", allocated facility time

16. NSF: “SGER: Epitaxial Electrodeposition for Large Area Single Crystals," $176,186, 6/1/08 - 5/31/11
17. DOE: ($374K): "Determining and Controlling the Fundamental Mechanisms of Sputter Ripple Formation”, 12/1/05-11/30/08.
18. UTRA ($3K) “Improved Substrate for High Temperature Superconductor Manufacturing”, with Adam Standley, 6 – 8/2006
19. NSF-NIRT (PI Vivek Shenoy): “Study of Self-Organization in Strained Heteroepitaxial Nanostructures: Multi-Scale Modeling, Simulation and Experiment”; 7/15/02-06/30/06
20. SALOMON GRANT ($16 K) “"Epitaxial Printing: A Process for Making Continuous Single Crystal”: 1/05-12/05
21. EMC Corp ($16 K) "Stress Evolution and Whisker Formation in Cu-Sn Bimetallic Layers": 1/05-12/05.
22. NSF MRSEC grant, ($7,100K w/ 16 faculty) “Micro- and Nano-Mechanics of Materials”, 09/01/00 - 08/31/05.
23. DOE, ($524K) “Spontaneous Nanoscale Pattern Formation during Low Energy Ion Bombardment” (9/01/01-11/30/05)
24. CINT ($42 K, 2 years)– “Mechanical Interactions between Nanostructures”; 7/1/04 - 8/31/05
25. GENERAL MOTORS CORP., (0.5 months) “Computational Design of Durable Lightweight Materials: from Atoms to Auto”, 05/1/01 - 04/30/06 (participant for first year only).
26. SANDIA NATIONAL LABORATORIES, ($15K) “In situ measurements of stress relaxation during MBE growth”,7/99-7/00.

c. Proposals submitted this year

7. Service (CY2021):

(i) University:

Undergraduate advising: AY21-22: 6 freshman, 5 sophomores

Graduate advising:

2 PhD students

Nupur Jain, 6th year (received Ph.D. in June, 2022)

Tong Su, 2nd year

University/Department:

Service to the university and engineering division:

1. Director of Graduate Studies - responsible for decisions regarding graduate students and admissions
2. Facility director for Nanotools
3. Graduate council – School of Engineering representative

(ii) Profession:

1. Reviewed scientific proposals for NSF
2. Reviewer for journals (Acta Mat., J. Appl Phys.)
3. Member EPIM board of TMS (electronic packaging and interconnect materials)

8. Honors

Offices:

Executive committee of APS Division of Materials Physics (2003-5)

Awards:

TMS, 2019 Functional Materials Division John Bardeen Award

1994 DOE-BES Award for Sustained Outstanding Research in Metallurgy and Ceramics

5 Sandia Awards for Excellence (1991, 1994, 1996, 1997, 1998)

Honor Societies:

Phi Beta Kappa, 1979

Recognition

JAP manuscript 2018 "Kinetic model for thin film stress including the effect of grain growth" was chosen as Editor's pick

Certificate for highly cited research from Progress in Surface Science, 2016

Keynote speaker, SVC ICMCTF Workshop on Stress in Thin Films, Chicago, 2016

Invited Plenary speaker, Int'l Conf. on Metallugical Coatings and Thin Films (ICMCTF), 2015

Washington State University, Distinguished lecturer, "Understanding stress evolution in thin films", Sept. 2011

Philosphical Magazine, 2011, highly commended by editors: 'Analytical model of transient compressive stress evolution during growth of high diffusivity thin films on substrates', (Bhandakkar, first author)

SMTA, "Best of Conference" award, 2010

Physical Review, Editor's choice, "Compositionally modulated ripples induced by sputtering of alloy surfaces", V. B. Shenoy, W. L. Chan, and E. Chason, (2007)

9. Teaching:

Semester I AY 22-23

ENGN0410, Introduction to Materials Science, 62 students, 10 problem sets, 2 midterms, final, 2 labs

Semester II AY21-22

ENGN2420: Kinetic Processes in Materials Science and Engineering, (taught virtually) 9 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY 21-22

ENGN0410, Introduction to Materials Science, 63 students, 10 problem sets, 2 midterms, final, 2 labs

Semester II AY20-21

ENGN2420: Kinetic Processes in Materials Science and Engineering, (taught virtually) 2 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY 20-21

ENGN0410, Introduction to Materials Science, (taught virtually) 76 students, 9 problem sets, 2 midterms, final, 2 labs

ENGN1970 Independent study with Sarah Berman on stress modeling for honor's thesis.

Semester II AY 19-20 (on sabbatical)

ENGN1971 Independent study with Sarah Berman on stress modeling in thin films.

Semester II AY 18-19

ENGN1450, Properties and Processing of Electronic Materials, 14 students, 7 problem sets, midterm and final exam, 2 Labs

ENGN2420: Kinetic Processes in Materials Science and Engineering, 6 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY18-19

ENGN0410, Introduction to Materials Science, 63 students, 10 problem sets, 1 midterm, final, 2 labs

Semester II AY17-18

ENGN2420: Kinetic Processes in Materials Science and Engineering, 5 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY17-18

Engineering 2490A, Crystal Structures and Crystallography, 21 students, 7 problem sets, 1 midterm, final exam

Semester II Ay16-17

ENGN2420: Kinetic Processes in Materials Science and Engineering, 17 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY16-17

Engineering 0410, Introduction to Materials Science, 81 students, 10 problem sets, 1 midterm, final, 2 labs

Semester II Ay15-16

Kinetic Processes in Materials Science and Engineering, 15 students, 7 problem sets, midterm and final exam, final project using computer simulation program

Semester I AY15-16

Engineering 2490A, Crystal Structures and Crystallography, 17 students, 7 problem sets, 1 midterm, final exam

Semester II, AY14-15

Engineering 145, Properties and Processing of Electronic Materials, 15 students, 7 problem sets, midterm and final exam, 2 Labs

Semester I AY 14-15

Engineering 0410, Introduction to Materials Science, 109 students, 11 problem sets, 2 midterms, final, 2 labs

Semester II AY13-14

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 10 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I AY13-14

Engineering 2490A, Crystal Structures and Crystallography, 19 students, 7 problem sets, 1 midterm, final exam.

Semester II AY12-13

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 17 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I AY 12-13

Engineering 0410, Introduction to Materials Science, 85 students, 10 problem sets, 2 midterms, final, 2 labs

Semester II AY 11-12

Sabbatical leave

Semester I AY11-12

Engineering 2490A, Crystal Structures and Crystallography, 17 students, 7 problem sets, 1 midterm, final exam.

Semester II, AY10-11

Engineering 145, Properties and Processing of Electronic Materials, 5 students, 7 problem sets, midterm and final exam, 2 Labs

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, extra section for 2 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, AY10-11 (with Prof. Sharvan Kumar)

Engineering 41, Introduction to Materials Science, 80 students, 9 problem sets, 3 midterms, final, 2 labs

Semester II, AY09-10

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 5 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, AY09-10

Engineering 249, Crystal Structures and Crystallography, 14 students, 7 problem sets, 1 midterm, final exam.

Semester II, AY08-09

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 10 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, AY08-09 (with Prof. Tayhas Palmore)

Engineering 41, Introduction to Materials Science, 88 students, 10 problem sets, 2 midterms, final, 2 labs

Semester II, 2007

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 6 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, 2007

Engineering 249, Crystal Structures and Crystallography, 8 students, 7 problem sets, 1 midterm, final exam.

Semester II, 2006

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 7 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, 2006 (with Prof. David Paine)

Engineering 41, Introduction to Materials Science, 63 students, 11 problem sets, 2 midterms, final, 2 labs

Semester II, 2006

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 15 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, 2005

Engineering 249, Crystal Structures and Crystallography, 5 students, 7 problem sets, 1 midterm, final exam.

Semester II, 2005 Sabbatical leave

Semester I, 2004 (with Prof. Janet Rankin)

Engineering 41, Introduction to Materials Science, 65 students, 11 problem sets, 2 midterms, final, 2 labs

Semester II, 2004

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 7 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, 2003

Engineering 249, Crystallography, 15 students, 7 problem sets, midterm and final exam

Semester II, 2003

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 2 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester I, 2002 (with Prof. Janet Rankin)

Engineering 41, Introduction to Materials Science, 90 students, 2 exams and a final, 10 homeworks, 2 lab exercises and course portfolio

Semester II 2002

Engineering 145, Properties and Processing of Electronic Materials, 8 students, 7 problem sets, midterm and final exam, 5 Labs

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 11 students, 7 problem sets, midterm and final exam, final project using computer simulation

Semester II 2001

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 4 students, 7 problem sets, final project using computer simulation

Semester I 2000:

Engineering 41, Introduction to Materials Science, 71 students, 2 exams and a final, 10 homeworks (taught in conjunction with Prof. Clyde Briant)

Semester II 2000

Engineering 242, Kinetic Processes and Mechanisms in Materials Science, 6 students, 6 problem sets, final project using computer simulation

Semester I 1999:

Engineering 41, Introduction to Materials Science, 80 students, 2 exams and a final, 10 homeworks (taught in conjunction with Prof. Clyde Briant)

Semester II 1999

Engineering 292, Thin Film Processing and Characterization, 6 students, 6 problem sets, final project using computer simulation

Semester I 1998

Engineering 41, Introduction to Materials Science, 94 students, 2 exams and a final, 9 homeworks (taught in conjunction with Prof. Sharvan Kumar)

Prepared: Dec. 22, 2022