



Forensic Engineer Curriculum Vitae



Scott J. Anson, Ph.D., P.E.

Principal Engineer, Anson Engineering, LLC (TX Registered Firm)

Professor, Mechanical Engineering &
Engineering Graduate Program Coordinator,
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Over 30 years of engineering experience in forensic engineering, multidisciplinary failure analysis, non-destructive testing, Mechanical Engineering, and Materials Engineering. Conducted ~ 75 corporate failure analyses. Ongoing active engineering practice and professional growth. Failure analysis application areas include workplace injuries, safety hierarchy application, structural failure of medical devices, commercial litigation, stress overload, materials analysis, and oil & gas.

Finalist for teaching awards and recipient of multiple awards for service to students at Rochester Institute of Technology and LeTourneau University. Skilled at teaching both counsel and trier of fact how to assess and understand the technical details so they can determine the facts in issue. Associate Member of the National Academy of Forensic Engineering (NAFE).

Professional Experience

Anson Engineering, LLC, Harleton, TX

January 2016 – Present

Principal Engineer

- Conduct forensic investigations and analyses for expert witness cases involving topics such as workplace injury, structural medical device failure, and commercial product failure
- Assess design defects, manufacturing defects, warnings/marketing defects
- Apply the Safety Hierarchy to injury mitigation
- Perform cause and effect analysis
- Performed stress analysis and redesign of a portable safety platform for temporary personnel transport outside locomotives
- Designed structural safety support for factory personnel fall arrest tie off
- Designed a trolley beam to allow safe access for filter cleaning in an industrial plant



LeTourneau University, Longview, TX

July 2013 – May 2025

Engineering Graduate Program Coordinator

June 2023 – May 2025

- Oversaw admissions, academic policy, course assignments and student recruiting
- 65% enrollment growth in the first 7 months

Professor, Mechanical Engineering

July 2013 – May 2025

- Taught classes in Mechanical Engineering, Materials Engineering, and Leadership
Courses included: Senior Design, Statics, Materials Engineering, Measurement with Instrumentation and Data Acquisition, Engineering Leadership, Non-Destructive Evaluation
- Guest lectured on professional engineering (PE) licensing procedures and practices to Sophomores and Seniors

Department Chair Mechanical Engineering

May 2017 – May 2024

- Provided department leadership - faculty care, student care, and department recruiting
- Determined faculty course assignments and conducted performance evaluations
- Taught classes in Mechanical Engineering, Materials Engineering, and Leadership
- First line supervisor of faculty and a lab technician – mentoring, evaluations, and advocacy

Acuren Inspection (formerly M&M Engineering), Leander, TX

January 2020 – June 2024

Senior Principal Engineer

- Performed industrial failure analysis report reviews
- Conducted American Society of Mechanical Engineers (ASME) pressure vessel design and rerate stress analysis
- Reviewed American Petroleum Institute (API) inspection reports
- Developed industrial training course for Materials Technology Institute (MTI) on chemical processing equipment operation, corrosion, and damage mechanisms

Intertek AIM (formerly Hi-Tech Testing), Longview, TX

May 2015 – January 2020

Senior Mechanical Engineer

- Investigated industrial failures and advised on product redesigns
- Performed macro cross-sectioning to assess heavy equipment welds
- Developed an in-situ metallography inspection kit and technique
- Reviewed American Petroleum Institute (API) inspection reports
- Completed pressure vessel rerates and API 579 Fitness For Service (FFS) assessments



IEC Electronics Inc., Newark, NY

May 2009 – October 2013

Adjunct Director of Technology

- Mentored numerous engineers in manufacturing process development
- Lead failure analysis initiatives using mechanical testing, metallurgical cross sectioning, X-ray inspection, and visual inspection
- Developed dye penetration testing techniques and trained other engineers

Rochester Institute of Technology (RIT), Rochester NY

September 2003 – June 2013

Assistant Professor | Associate Professor | Program Chair of Manufacturing Engineering Technology | Editor in Chief of the Journal of Applied Science and Engineering Technology (JASET)

- Taught classes in manufacturing processes, robotics, electronics manufacturing, failure analysis, and engineering economics
- Conducted applied research in process development and reliability testing
- Advised and mentored graduate students in research and MS theses publication
- Directed academic journal policies, double blind peer review, editing, and publication

Endicott Interconnect Technologies Inc., Endicott, NY **November 2002 – September 2003**

Advisory Engineer, Process Development and New Process Introduction

- Developed manufacturing processes
- Conducted failure analyses
- Lead process development, optimization, and control initiative
- Mentored engineers in process development and troubleshooting

IBM Microelectronics, Endicott NY

May 2001 – November 2002

Advisory Engineer, Process Development and New Process Introduction

- Conducted numerous (50+) statistical manufacturing experiments using Design of Experiments (DOE) techniques
- Performed electrical and mechanical failure analysis using X-ray inspection, visual inspection, and Fourier transform infrared spectroscopy (FTIR)

Universal Instruments – Advanced Process Lab, Binghamton NY **March 1996 – May 2001**

Process Research Engineer

- Developed leading edge electronics manufacturing processes
- Performed failure analyses for parties in dispute
- Utilized cross sectioning, acoustic microscopy, scanning electron microscopy, X-ray inspection, and metrology techniques
- Performed product reliability testing – air to air thermal cycling, liquid to liquid thermal shock, as well as temperature and humidity testing



EMS Technologies, Binghamton NY

June 1995 – February 1996

Process Engineer

- Developed electronics manufacturing processes
- Conducted failure analyses
- Developed plant-wide training material on problem solving for plant production personnel

Education

Systems Science, Manufacturing Systems Concentration, Ph.D. 2007

Binghamton University, Binghamton, NY
Extensive Materials Engineering Coursework

Mechanical Engineering, Materials Concentration, M.S. 1996

Binghamton University, Binghamton, NY

Mechanical Engineering, B.S. High Honors 1993

State University of New York (SUNY) Binghamton, Binghamton NY

Engineering Science, A.S. 1991

Broome Community College, Binghamton NY

Licenses, Certifications, and Training

Professional Engineering (PE) License, LA – License Number 0049147 2024

Professional Engineering (PE) License, TX – License Number 120903 2015

Professional Engineering (PE) License, NY – License Number 076753 1999

API 580 Risk Based Inspection, American Petroleum Institute, Washington D.C. – 2020
Certification Number 96562, Expires 10/31/2026

API 510 Pressure Vessel Inspector, American Petroleum Institute, Washington D.C. – 2019
Certification Number 87769, Expires 2/28/2025

API 571 “Damage Mechanisms Affecting Fixed Equipment in the Refining Industry 2016
(AKA “Corrosion and Materials”) American Petroleum Institute, Washington D.C. –
Certification Number 68205, Expires 9/30/2025

API/ASME 579 Fitness for Service, American Petroleum Institute, Washington D.C. 2015
and American Society of Mechanical Engineers, New York, NY. Training and Experience



Plant Safety Training – East Texas Safety Council, Longview TX, Updated 2019

- Basic Orientation Plus
- Hydrogen Sulfide (H₂S)
- Confined Space Entry
- Scaffolding User
- Texas Eastman Site Specific
- Texas Eastman Confined Space

Professional Service

1. Reliability Session Chair at IMAPS Advanced Technology Workshop on Chip Scale Packages, North Falmouth MA, September 22-24, 2000
2. Periodic guest speaker at Binghamton University 2000-3
3. Project Lead the Way (PLTW) – RIT Affiliate Professor for Computer Integrated Manufacturing (CIM) and national exam coauthor 2004-8
4. IPC Solder Paste Task Group – industry committee 2004-8
5. Periodic guest speaker at Roberts Wesleyan College 2006-7
6. Technical Session Co-Chair, “Advanced Environmental Product Compliance Issues” at Surface Mount Technology Association International Conference in Orlando FL on August 20, 2008
7. IEEE Transaction on Electronics Packaging Manufacturing journal reviewer 2008
8. ASME InterPACK Conference reviewer 2009
9. Materials Science and Technology (Maney Publishing) journal reviewer 2009
10. Surface Mount Technology Association (SMTA) Hutchins Award Scholarship Reviewer 2010-2016
11. Guest speaker on Professional Engineering (PE) Licensing to undergraduate engineering students – Sophomore Seminar and Senior Design - guest lecture ~twice per year from 2017-2023

Publications

1. “An Examination of the Parameters Affecting (Solder Paste) Tack Strength as Measured in the IPC Tack Test,” with C. Sahay, L. Head and J. Constable, ASME International Mechanical Engineering Congress & Exposition, Winter Annual Meeting, San Francisco, CA, 95-WA/EEP-20, November 12-17, 1995.
2. “An Examination of the Factors Affecting the Measurement of Solder Paste Tackiness,” Master of Science Thesis, Department of Mechanical Engineering, Thomas J. Watson School of Engineering and Applied Science, Binghamton University (State University of New York), Binghamton, NY, January 1996.



3. "Determination of Parameters Affecting Solder Paste Tack Strength as Measured in the IPC Tack Test: A Classical Design of Experiments Approach," with C. Sahay, Linda Head, and James Constable, "American Society of Mechanical Engineers (ASME) Journal of Electronics Packaging," Vol. 118, No. 2, pp. 94-100, June 1996.
4. "Qualifying a Hi-Rel No-Clean Process," with C. Sahay, John Hallgren, Walter Pillar, Tom Fletcher, Russell Davis, Tek Ong, "SMT - Surface Mount Technology Magazine," pp. 116-122, August 1996.
5. "Qualifying a Hi-Rel No-Clean Process," with C. Sahay, John Hallgren, Walter Pillar, Tom Fletcher, Russell Davis, Tek Ong, reprinted in "SMT's Guide to Soldering Materials," November 1997.
6. "Failure Analysis for Area Array Packages, Part I," HDI, Vol. 4, No. 8, pp 24-26, August 2001.
7. "Failure Analysis for Area Array Packages, Part II," HDI, Vol. 4, No. 9, pp 32-36, September 2001.
8. "Failure Analysis Techniques for Area Array Packages," IMAPS Advanced Technology Workshop on Chip Scale Packages, North Falmouth MA September 22-24, 2000.
9. "Solder Paste Wetting and Solder- Balling Evaluation: A Quantitative Statistical Approach Using DOE," with Vijay Gopalakrishan, Robert Murcko and Krishnaswami Srihari, APEX Electronics Assembly Process Exhibition and Conference, Anaheim CA February 2003.
10. "Ball Grid Array (BGA) Site Dressing Tool and Process," IBM Patent Disclosure, Endicott NY, June 2003.
11. "Wave Solder Process Optimization for Complex Electronic Assemblies: A Design of Experiments Approach," with Subrahmania Janakiramin, James Holton, Robert Murcko and Krishnaswami Srihari, APEX Electronics Manufacturing Conference 2004, Anaheim CA, February 21-26, 2004.
12. "Moisture and Reflow Sensitivity Evaluations of SMT Packages as a Function of Reflow Profile at Eutectic and Lead Free Temperatures," with Vijay Gopalakrishan, Robert Murcko and Krishnaswami Srihari APEX Electronics Manufacturing Conference 2004, Anaheim CA, February 21-26, 2004.
13. "Investigation of Lot Variation on Moisture Sensitivity and its Impact on Delamination Phenomenon in Plastic Encapsulated Components," with Karthik Thenalur and S. M. Ramkumar. Electronic Circuits World Convention (ECWC) poster presentation Anaheim CA, February 22-24, 2005.
14. "Effect of Deviating from The Reflow Process Window for Lead-free Assembly," with Santhakumar Rajesnayagham, Manivannan Sampathkumar, Riyaz Shaikh, S. M. Ramkumar, Bjorn Dahle, Miles Moreau. Proceedings of Surface Mount Technology Association (SMTA) International Conference Chicago, September 25-29, 2005.



15. "Investigating the Performance of SAC and SACBi Solder joints with Immersion Silver and OSP Surface Finishes," with M. Sampathkumar, S. Rajesnayagham, and S. M. Ramkumar. Proceedings of Surface Mount Technology Association (SMTA) International Conference Chicago, September 25-29, 2005.
16. "Effect of Deviating from the Thermal Process Window for Lead-free Assembly," S. Rajesnayagham, M. Sampathkumar, R. Shaikh, S. M. Ramkumar, B. Dahle, M. Moreau. Journal of Surface Mount Technology, Vol. 18, Issue 4, p. 29, October – December 2005.
17. "Teaching Reliability Concepts to Undergraduate Students – an NSF CCLI A&I Grant," S. M. Ramkumar, Charles Swain, Arun Varanasi, American Society for Engineering Education (ASEE) 2006 Annual Conference and Exposition, Chicago IL, June 18-21, 2006.
18. "Analysis of Solder Wetting in Sn-Ag-Cu Lead Free Alloy," with Krishnaswami Srihari and Jacob G. Slezak, 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, IL, November 5-10, 2006.
19. "Analysis of Lead Free Tin-Silver-Copper and Tin-Lead Solder Wetting Reactions," Ph.D. Dissertation, Department of Systems Science and Industrial Engineering, Thomas J. Watson School of Engineering and Applied Science, Binghamton University (State University of New York), Binghamton, NY, May, 2007.
20. "Reflow Process Enhancement and Wetting Analysis in 63Sn/37Pb and Sn-Ag-Cu Lead Free Alloy," with Krishnaswami Srihari and Jacob G. Slezak, 2007 Surface Mount Technology Association International (SMTAI) Conference, Orlando FL, October 7-11, 2007.
21. "Organic Solderability Preservative Lead Free Reflow Processing," with Jacob G. Slezak, 2007 Surface Mount Technology Association International (SMTAI) Conference, Orlando FL, October 7-11, 2007.
22. "Investigation of Enhanced Solder Wetting in 63Sn/37Pb and Sn-Ag-Cu Lead Free Alloy," with Krishnaswami Srihari and Jacob G. Slezak, Electronic Components and Technology Conference (ECTC), May 27-30, 2008.
23. "REAL – Reliability Education and Analysis Laboratory," with S. M. Ramkumar, American Academy for Advancement of Science / NSF CCLI Conference in Washington D.C., August 13-15, 2008.
24. "Focusing on Student Involvement & Best Practices," with Roy Starks and Matt Seal, SMTA Chapter Officers Webinar, February 25, 2009.
25. "Navigating the Process of Publishing in a Journal," Letter from the Editor-in-Chief, Journal of Applied Science and Engineering Technology (JASET), Volume 3, September 2009.
26. "Navigating the Process of Publishing a Journal Article," seminar – RIT Wallace Library, Publishing and Scholarship Support Center, Open Access Week, October 29, 2009.



27. "Advice for Authors of Journal Articles," RIT- CAST Scholarship, Brown Bag Session RIT, Oct. 26, 2009. • "Accelerating Untenured Faculty Scholarship," with Mario Castro-Cedeno, Elizabeth Dell, Robert Garrick, Christopher Greene, James Lee, Carol Romanowski, Michael Slifka, Larry Villasmil, 2010 Conference for Industry and Education Collaboration (CIEC), Palm Springs, CA, February 3-5, 2010.
28. "UFAST – Practical Advice for Accelerating New Faculty Scholarship," with Robert Garrick, Mario Castro-Cedeno, Elizabeth Dell, Christopher Greene, James Lee, Carol Romanowski, Michael Slifka, Larry Villasmil, 117th Annual Conference and Exposition, American Society for Engineering Education (ASEE), Louisville, KY, June 20-23, 2010.
29. "Peer Mentoring: Untenured Faculty Accelerated Scholarship Team (UFAST)," RIT Peer Network Fall Session, Presentation and Panel Discussion, November 11, 2010.
30. "Peer Mentoring: Untenured Faculty Accelerated Scholarship Team (UFAST)," RIT Peer Network Winter Session, Presentation and Panel Discussion, January 28, 2011.
31. "Restructuring the Robotics Laboratory and Enhancing the Robotics Curriculum," with Christopher M. Greene and Christopher Villareale, 2011 ASEE Annual Conference & Exposition, June 23-29, 2011.
32. "How to Advance from a Manuscript Submitter to a Journal Article Author," New York State Engineering Technology Association, Rochester NY, October 25, 2012.
33. "Evaluation of Solder Pastes for High Reliability Applications," with Michael McLaughlin and Abner Argueta, Presented at Surface Mount Technology Association International (SMTAi) Fort Worth TX, October 12-17, 2013.
34. "Why Engineer? – A Biblical Analysis of the Engineering Profession," Christian Engineering Conference – 2015, Seattle WA, June 2015.
35. "Scholarly Production of an Untenured Cohort of Faculty," Journal of Engineering Technology (JET), Vol 32, Issue 2, September 2015.
36. "Philosophy of Teaching and Student and Peer Mentoring: A Christian Perspective," 2017 Christian Engineering Conference, Cedarville OH, June 28-30, 2017.
37. "Developing a Philosophy of Teaching and Student Mentorship: A Christian Perspective," Faculty Workshop, LeTourneau University, Longview TX, August 15, 2017.
38. "Intermetallic Effects in Aluminum-To-Steel Friction Stir Welds," ASTM Symposium Commemorating 100 Years of E04 Development of Metallographic Standards, Atlanta GA, November 15-16, 2017.
39. "Non-Destructive Evaluation Techniques for Forensic Engineers: Part 1 of N," National Academy of Forensic Engineers (NAFE) Winter 2025 Conference – Sante Fe, NM, January 17-19, 2025. Awarded "Best Educational Presentation."



PRESENTATIONS OF A 3 HOUR WORKSHOP ON FAILURE ANALYSIS TECHNIQUES

40. "Failure Analysis Techniques for Process Engineers: Principles, Methods and Case Studies," Workshop at APEX, Long Beach CA, March 2000.
41. "Failure Analysis Techniques for Process Engineers: Principles, Techniques, and Case Studies," Workshop at Mexitronica, Guadalajara, Mexico, October 2000.
42. "Failure Analysis Techniques for Process Engineers: Principles, Methods and Case Studies," Workshop at Binghamton University Packaging Assembly Symposium, Binghamton NY, November 2000.
43. "Failure Analysis Techniques for Process Engineers: Principles, Methods and Case Studies," Workshop at APEX, San Diego CA, January 2001.

Honors/Awards

1. Tau Beta Pi – National Engineering Honor Society
2. PI Tau Sigma – International Mechanical Engineering Honor Society
3. Alpha Pi Mu – National Industrial Engineering Honor Society
4. Golden Key – International Collegiate Honor Society
5. Designated an IBM "Corporate Technical Resource" – 2002
6. Nominated for a Richard and Virginia Eisenhart Provost's Award for Excellence in Teaching at RIT – 2005
7. Nominated for an Eisenhart Award for Outstanding Teaching at RIT – 2008
8. RIT College of Applied Science and Technology (CAST) Featured Scholar – 2009
9. RIT "Principal Investigator Magnate" designation - Sponsored Research Services – 2009
10. Nominated for an Eisenhart Award for Outstanding Teaching at RIT – 2009
11. LeTourneau University "Servant of the Lord" award for service contributions to student wellbeing – 2014, 2015, 2020

Professional Societies

American Society of Mechanical Engineers (ASME) – New York, NY

National Society of Professional Engineers – Alexandria, VA

Texas Society of Professional Engineers – Austin, TX

National Academy of Forensic Engineers (NAFE) – Atlanta, GA



Personal

First generation college student — paid for college by working various jobs including: lumber yard stocker, home center associate, manufacturing plant operator, parking lot attendant, undergraduate academic tutor, graduate teaching assistant and research assistant.

I enjoy spending time with my wife and young adult children, DIY vehicle and homestead repair/improvement, and learning new skills.

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