

CURRICULUM VITA

DARREN L. WILLIAMS

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ACADEMIC EDUCATION

1997 Ph.D. Physical Chemistry, Oregon State University, Joseph Nibler – Research Advisor
1992 B.S. Chemistry, University of Texas at Austin, Joseph Lagowski – Undergraduate Research Advisor

SUMMARY OF WORK EXPERIENCE

2016 – present Full Professor, Chemistry, Sam Houston State University, Huntsville, TX
2010 – 2016 Tenured, Associate Professor, Chemistry, Sam Houston State University, Huntsville, TX
2004 – 2010 Assistant Professor, Chemistry, Sam Houston State University, Huntsville, TX
2001 – 2004 Section Scientist, BWXT Pantex LLC (US-DoE facility), Amarillo, TX
2001 – 2004 Adjunct Professor, Chemistry, West Texas A&M University, Canyon, TX
1997 – 2001 Assistant Professor, Chemistry, West Texas A&M University, Canyon, TX

LEADERSHIP AND SERVICE EXPERIENCE

2020 – present Ongoing Technical Co-Chair, **Parts Cleaning Conferences**, at PMTS in Cleveland OH (2021, 23, & 25), Columbus OH (2026), and IMTS in Chicago, IL (2020, 22, & 24).
2018, 21, 25, 26 Organizing Chair of the Industrial **Product Quality Cleaning Workshops** at SHSU, Huntsville, TX
2019 Member - Texas Higher Ed Coordinating Board's Chemistry Field of Study Advisory Committee
2012 – present Director and Faculty Advisor, Ratio Christi at SHSU
2011 – 2013 Member of the Texas Higher Ed Coordinating Board's Tuning Oversight Council for Engineering and Science, and **Chair** of the THECB Chemistry Tuning Subcommittee.
2007 – 2025 Member Huntsville Rotary Club-Director (11-12), Treas. (12-13), Pres.-Elect (13-14), **Pres.** (14-15)
2005 – present Faith Lutheran Church and School, various leadership roles, Congregational President (2022 – 2024)
1999 – 2002 ACS Panhandle Plains Local Section Officer and President

CERTIFICATIONS AND CLEARANCES

2019 Certificate in Effective Teaching Practices, Association of College and University Educators, ACUE.org
2003 CTM Certification, Toastmasters International, Club 9440, Amarillo, TX
2002 Six-Sigma Black Belt Certification, BWXT Pantex LLC, Amarillo, TX
2002 Department of Energy Q & SCI Security Clearances, BWXT Pantex LLC, Amarillo, TX
2001 OSHA 40-Hour Hazardous Waste Operations Certification, West Texas A&M University, Canyon, TX

HONORS, AWARDS, AND SPECIAL RECOGNITIONS

2023, 2016 Awardee - College of Science Engineering and Technology Faculty **Excellence in Service**
2022 SHSU **Sammy Award** for Outstanding Contribution to the University
2020 Partners for Progress and Prosperity (P3) Award at the 2020 Joint SWRM/SERMACS Meeting
2015, 2016, 2019, 2020 Four-time Nominee for the University Faculty **Excellence in Teaching** Award
2013 Nominee for the College of Science Faculty **Excellence in Teaching** Award
2010, 2012 Outstanding Teacher – Alpha Chi National Honor Society, Sam Houston State University
2012, 2024 **Sammy Award Nominee** for “Best Student Organization Faculty Advisor”, Sam Houston State University
2008 “Best Darn Teacher in the World Award” – Phi Sigma Pi National Honor Fraternity, Sam Houston State Univ.

SERVICE TO THE PROFESSION

Reviewer for the following entities: Oxford University Press (Atkins' Physical Chemistry Text), ScienceDirect Search Tools, Elsevier; Journal of Chemical Education; The Chemical Educator; US Army Corps of Engineers' Engineer Research and Development Center (ERDC); Joint Army Navy NASA Air Force (JANNAF) Journal; Physical Chemistry-GRE, Texas Teacher Certification Chemistry and General Science Exams, Educational Testing Service; Journal of Physical Chemistry A

TEACHING EXPERIENCE - COURSES TAUGHT

2018 – present **Product Quality Cleaning Workshops** and Webinars (Sam Houston State University and BFK Solutions)
2004 – present Physical Chemistry – **Spectroscopy** (Fall) and **Thermodynamics** (Spring) (Sam Houston State University)
2005 – present **Forensic** Chemistry (Sam Houston State University) [Every Spring Semester]
2006 – present Graduate **Thermodynamics** (Sam Houston State University)
1997 – present Graduate **Molecular Spectroscopy** (West Texas A&M University and Sam Houston State University)
1997 – present General Chemistry I and II (West Texas A&M University and Sam Houston State University)
2020 **Honors Seminar on Science and Religion** (Sam Houston State University)
1997 – 2002 **Environmental** Chemistry, Instrumental Analysis and Analytical Chemistry (West Texas A&M Univ.)

SCHOLARLY AND CREATIVE CONTRIBUTIONS

1. (Invited) The Chemistry of Mixing, *Finishing & Coating*, December, 82 – 84 (2025).
2. **Parts Cleaning Workshop**, PMTS 1-Day Training, Cleveland OH (2025).
3. Provisional **Patent**, Mechanical Cavitation Cleaning Device, July (2024).
4. Jose Grijalva, Ting-Yu Huang, Jorn Yu, Patrick Buzzini, Darren Williams, J. Tyler Davidson, *Geraldine Monjardez, Analysis of major cannabinoids using Raman microscopy, density functional theory, chemometrics and a novel artificial intelligence approach, *Talanta Open*, Vol 10, 100337 (2024).
5. (Invited) Is Perchloroethylene in My Aqueous Cleaning Agent?, *Finishing & Coating*, August, 99 – 101 (2023).
6. (Invited) **Forward**, Aqueous Cleaning Handbook – Guide to Critical Cleaning Procedures, Techniques, and Validation, by Michael Mousourakis, Jeff Phillips, Stacy Silverstein and Malcolm McLaughlin, Alconox, vi – viii (2023).
7. Williams, D.L. & Jackson, V.S. **Spectroscopy Theory in One Dimension**, *American Institute of Physics Publishing Books*, Melville, New York, (2022) ISBN 978-0-7354-2564-4 (Softcover), 158 pages.
8. (Invited) How to Choose and Set Up a Manufacturing Cleaning Process, *Production Machining*, 22(7), 44-47, (2022).
9. (Invited) Good Bonding and Coating with Contact Angle Measurements, *Production Machining*, 22(4), 42-43, (2022).
10. **Product Quality Cleaning Workshops**, Organizing Chair, 2018 and 2021(live) and 2023 (on-demand), SHSU.
11. **Product Quality Cleaning Webinars**, Cleaning Research Group, SHSU, www.shsu.edu/pqcw
12. US Patent 9,958,264, Portable Contact Angle Measuring Device, May 1, (2018).
13. US Patent 9,874,528, Portable Contact Angle Measuring Kit, January 23, (2018).
14. (Invited) Regulatory Update on Solvent Cleaning Processes in the USA, *Fastener Tech. Int'l*, 40(3), 58 – 59 (2017).
15. (Invited) Regulatory Update on Solvent Cleaning Processes in the USA, *Wire Forming Tech. Int'l*, 20(3), 60 – 61 (2017).
16. Final Report: Development of Azeotropic Blends to Replace TCE and nPB in Vapor Degreasing Operations, Funded by the **Strategic Environmental Research and Development Program (SERDP)**, 360 pages, (2016).
17. (Invited) Wettability Techniques to Monitor the Cleanliness of Surfaces, **Chapter 10**, in Rajiv Kohli & K. L. Mittal (Eds.), Developments in Surface Contamination and Cleaning, vol. 1, Elsevier Inc., New York, NY, (2016).
18. Particle on a Ring Spectroscopic Selection Rules Det. by Group Theory, *J. of Chem. Educ.* 92, 2165 – 2169 (2015).
19. (Invited) Solvent Substitution Strategies for Finishers, *Products Finishing*, 78(7), 36 – 38, (2014).
20. Microsphere Lithography on Hydrophobic Surfaces for Generating Gold Films that Exhibit Infrared Localized Surface Plasmon Resonances, *J. Phys. Chem. B*, 117(49), 15313 – 15318, (2013).
21. (Invited) Solving the Solvent Substitution Puzzle, *Controlled Environments Mag.*, 16(8), 10-14, (2013).
22. (Invited) Cleanliness Verification on Large Surfaces – Instilling Confidence in Contact Angle Techniques, Chapter 5, in Rajiv Kohli & K. L. Mittal (Eds.), Developments in Surface Contamination and Cleaning, vol. 6, Elsevier/William Andrew, Norwich, NY, (2013), pp 163 – 181.
23. (Invited) **BOOK REVIEW**: CRC Handbook for Critical Cleaning: Book I – Cleaning Agents and Systems, Book II – Applications, Processes, and Controls, *Controlled Environments Mag.*, March (2012).
24. (Invited) Just How Clean is Clean, *Products Finishing*, 76(5), 34-37, (2012).
25. Contact Angle Measurements Via Cellphone Cameras - Bikerman Method, *Galvanotechnik*, 102(8), 1718-1725, (2011).
26. Computerized Measurement of Contact Angles, *Galvanotechnik*, 101(11), 2502-2512, (2010). (**90 citations as of 2025**)
27. Controlling the Particle-Size Distribution of Nitroanilines via the Hansen Solubility Parameters and Precipitation Paths, *Proceedings of the 43rd Combustion Subcommittee Meeting of the Joint Army Navy NASA Air Force (JANNAF) Interagency Propulsion Committee, Enhanced Blast Phenomenology*, La Jolla, (2009).
28. A QSAR Model for Predicting Solvents and Solvent Blends for Energetic Materials, *Proceedings of the Intl. Annual Conference of ICT, 40th (Energetic Materials)*, Karlsruhe, Germany, 2/1-2/11, (2009).
29. A Determination of the Hansen Solubility Parameters of Hexanitrostilbene (HNS), *Propellants Explosives and Pyrotechnics*, 34(5), 452-457, (2009).
30. **Beyond λ_{max} Part 2**: Predicting Molecular Color, *Journal of Chemical Education*, 86(3), 333-339 (2009).
31. Evaluation of Modified IMS Swabs for the Screening of Oxidizers and Home-made Explosives, *Texas Journal of Science*, 60(4), 299-308, (2008).
32. Discoveries in Chemistry & Textiles: Two-Week Course in Germany & Paris, *Chem Educator* 13(6), 392-396 (2008).
33. An Inexpensive, Digital Instrument for Surface Tension, Interfacial Tension, and Density Determination, *Ind. & Engineering Chemistry Research*, 47(12), 4286-4289 (2008).
34. **Beyond λ_{max}** Transforming Vis Spectra into 24-bit Color Values, *J. of Chem. Educ.*, 84(11), 1873-1877 (2007).
35. IR & Raman Signatures of Aromatic Nitration in Thermoplastic Urethanes, *Applied Spec.*, 61(6), 608-612 (2007).
36. Solvent Substitution – PART 1: The Elimination of Flammable, RCRA and ODC Solvents for Wipe Application, *CleanTech Magazine*, 4(9), 16-19 (2004), and PART 2 4(10), 14-16 (2004).
37. UV-Induced Degradation Rates of TATB, *J. of Phys. Chem. A*, 107(44), 9491-9494 (2003).
38. XPS Examinations of Beryllium Surfaces Exposed to Chlorinated Solvents, *Surf Interface Anal.* 27, 273-282, (1999).
39. IR of Al(BH₄)₃ and Al(BD₄)₃, *J. of Phys. Chem. A*, 102(3), 537-544. (1998).
40. PC Calculations Using Gaussian for Windows, *J. of Chem. Educ.*, 73(7), 608-611 (1996).