

Dane W. Scott

East Tennessee State University
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Johnson City, TN 37614
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EDUCATION

2009 – 2010 Summer Post Doctoral Research Assistant
Oklahoma State University; Advisor: Dr. Nicholas Materer
2003 – 2008 Ph.D., Chemistry
Oklahoma State University; Advisor: Dr. Nicholas Materer
Stillwater, OK
1992 – 1996 B.S., Chemistry, Northeastern State University of Oklahoma
Tahlequah, OK

POSITIONS

2020 – present Associate Professor of Analytical Chemistry
East Tennessee State University
Johnson City, TN
2015 – 2020 Assistant Professor of Analytical Chemistry
East Tennessee State University
Johnson City, TN
2011 – 2015 Assistant Professor of Analytical Chemistry
East Central University
Ada, OK
2008 – 2011 Chemistry Lecturer
Coastal Carolina University
Conway, SC

TEACHING AND AWARDS

Teaching experience and interests include General Chemistry, Quantitative and Instrumental Analysis, graduate courses in Quantitative Analysis including Surface Analytical Techniques.

2018 SERMACS Analytical Physical Student Poster Winner, Hannah Hill
2014 East Central University Teaching Excellence Award

EAST TENNESSEE STATE UNIVERSITY (Fall 2015 to present)

General Chemistry I and II (CHEM 1110/1120)
Quantitative Analysis and Lab (CHEM 2220/2221)
Instrumental Analysis (CHEM 4200)

Advanced Integrated Lab (CHEM 4631)
Surface Analytical Techniques (CHEM 5957/4957)
Advanced Analytical Chemistry I (CHEM 5210)

EAST CENTRAL UNIVERSITY (2011-2015)

Quantitative Analysis (Chem 3214 and 3214L)
Instrumental Analysis (Chem 3814 and 3814L)
General Chemistry I (Chem 1114 and 1114L)

COASTAL CAROLINA UNIVERSITY (Fall 2008 – Summer 2011)

General Chemistry I Lecture (Chem 111)
General Chemistry I and II Lab (Chem 111L and 112L)

SERVICE

7/26/2022 to present	ETSU Chemistry Graduate Coordinator
8/16/2022 to 8/31/2025	ETSU Faculty Senate
8/15/2023 to 8/14/2024	ETSU College of Arts and Sciences Faculty Council
1/2023 to 12/2026	Chair-Elect/Chair/Past Chair Tennessee Virginia Highlands Section
1/2019 to 12/2021	Chair-Elect/Chair/Past Chair Northeast Tennessee Local Section
8/2015 – 8/2022	Faculty ACS Student Chapter Advisor
1/2012 - 12/2014	3 year term, Oklahoma Local Section Chair

RESEARCH AND FUNDING

Sponsor:	Department of Defense Army Corps of Engineers Engineer Research and Development Center
Role:	PI
Contract:	W9132T23C0007
Amount:	\$301,127
Location:	Johnson City, TN
Date:	February 28, 2023 through February 27, 2026
Description:	Conversion of Cellulosic Waste to Hydrocarbon Fuels Using Hydrogenated Metal Oxides at Low Temperature and Atmospheric Pressure

Sponsor:	ETSU Research and Development Committee (RDC)
Role:	PI
Grant:	Major RDC Grant
Amount:	\$12,000
Location:	Johnson City, TN
Date:	July 2020 to June 2021
Description:	Advancing Adsorptive Sulfur Removal From Petroleum Using Silver Phthalocyanine Modified Ion Exchange Resin

Sponsor:	ETSU Research and Development Committee
Role:	PI
Grant:	Major RDC Grant
Amount:	\$10,000
Location:	Johnson City, TN
Date:	July 2017 to June 2018
Description:	Trifluoromethyl Substituted Cobalt Phthalocyanine and Oxidation of Methanethiol in Petroleum
Sponsor:	Oklahoma EPSCoR
Role:	PI
Grant:	EPSCoR Research Opportunity Award
Amount:	\$12,500
Location:	Stillwater, OK
Supporting Faculty:	Dr. Nicholas Materer
Date:	Summer 2015
Description:	Conversion of CO ₂ to Oxalic Acid
Sponsor:	Oklahoma EPSCoR
Role:	PI
Grant:	EPSCoR Research Opportunity Award
Amount:	\$12,500
Location:	Stillwater, OK
Supporting Faculty:	Dr. Nicholas Materer
Date:	May – August 2014
Description:	Indium Phthalocyanine Complex for Photoreduction of CO ₂
Sponsor:	Environmental Protection Agency
Role:	PI
Grant:	EPA P3 Award
Amount:	Phase I: \$15,000
Location:	Ada, OK
Student Team:	Josh Smith, Cody Soden, Laura Berdugo
Date:	September 2012 to April 2015
Description:	Solid state dye sensitized solar cells are being prepared and tested for the Sustainability Expo held in Washington, D.C.
Sponsor:	Oklahoma EPSCoR
Role:	PI
Grant:	EPSCoR Research Opportunity Award
Amount:	\$10,000
Location:	Stillwater, OK
Supporting Faculty:	Dr. Nicholas Materer
Date:	May – August 2012
Description:	Molybdenum gluconate is being examined as a catalyst to look at the hydrolysis of cellulose to basic sugars.
Sponsor:	Pontotoc County
Role:	Co-PI, PI's: Charles Crittall, Ph.D and Deborah Cornelison

Grant: PC REACT Byng Partnership
 Amount: \$70,000
 Location: East Central University and Byng Public Schools
 Date: Summer 2012
 Description: This work involved a summer workshop in which Dr. Crittel, Deborah Cornelison and Susan and myself instructed group of elementary to high school teachers covering various chemistry topics and conducting exercises that the teachers could apply to their classrooms and curriculum.

UNITED STATES PATENTS

1. Materer, N.; Apblett, A.; Scott, D. Chlorine dioxide sensor. 2009-US43594, 2010096074, 20090512., 2010.
2. Materer, N.; Apblett, A.; Scott, D. Chlorine dioxide sensor. 2009-372978, 20100208239, 20090218., 2010.

CONSULTING

2023-Present	University of Central Oklahoma; Dr. Morshed. Quantification of Formaldehyde
2011-8/2016	Deep Reach Oxidation: Assemble, Calibrate and Maintain Sensors for Detecting Chlorine Dioxide Gas
2012-2015	XploSafe: Detection and Sensors for Explosive Materials
2013-2014	Amethyst: Development and Characterization of Hydrogenated Conducting Oxides Prepared by Solution Based Methods

PUBLICATIONS

***Graduate** students are in bold and undergraduates are underlined.

1. Wiseman, F. L.; Scott, D. W. A technique for analyzing the variability of activation thermodynamic and solvent model parameters. *RSC Advances* **2025**, *15* (6), 4111-4119, 10.1039/D4RA07211A. DOI: 10.1039/D4RA07211A.
2. Berger, B. A.; Vietor, H. M.; Scott, D. W.; Lee, H.; Hashemipour, S.; Im, W.; Wittenberg, N. J.; Glover, K. J. Physicochemical Properties of Seed Oil Blends and Their Potential for the Creation of Synthetic Oleosomes with Modulated Polarities. *ACS Omega* **2024**, *9* (42), 43193-43202. DOI: 10.1021/acsomega.4c07512.
3. Wiseman, F. L.; Scott, D. W. A thermodynamic approach to analyzing relative permittivity and solvent mole fraction models, and application to SN1 reactions. *Physical Chemistry Chemical Physics* **2024**, *26* (3), 1984-1993, 10.1039/D3CP04155G. DOI: 10.1039/D3CP04155G.
4. **Bittner, K.**; Myers, D. L.; Hoque, S.; Scott, D. W. Water soluble iron tetrasulfophthalocyanine for quantification and removal of dibutylamine from water. *Environmental Advances* **2023**, *12*, 100369. DOI: <https://doi.org/10.1016/j.envadv.2023.100369>.
5. Scott, D. W.; Alharbi, Sammi. Reproducible Electrodeposition of Hydrogen Molybdenum Bronze Films and Electrochemical Reduction of Carbon Dioxide. *Journal of Thin Films Research* **2020**, *4* (1), 46-50.

6. **Omadoko, O.**; Scott, D.; **Hickman, R.**; Myers, D. L. Simple photoreduction of carbon dioxide to formic acid and true quantum yield. *Physical Chemistry Chemical Physics* **2020**, 22 (8), 4632-4639, 10.1039/C9CP06707H. DOI: 10.1039/C9CP06707H.
7. Wiseman, F. L.; Scott, D. W.; Tamine, J.; O'Connell, R.; Smarra, A.; **Olowoyo, S.** Analyses of reaction rate data for the simple hydrolysis of acetic anhydride in the acetonitrile/water and acetone/water cosolvent systems using recently developed thermodynamic rate equations. *International Journal of Chemical Kinetics* **2020**, 52 (1), 52-60. DOI: 10.1002/kin.21329.
8. Scott, D.; Firth, D. Using Control Charts Early in the Quantitative Analysis Laboratory Curriculum. *Journal of Chemical Education* **2019**, 96 (5), 1037-1041. DOI: 10.1021/acs.jchemed.8b00791.
9. Scott, D. W.; Myers, D. L.; Hill, H.; **Omadoko, O.** Sodium cobalt(II) tetrasulfophthalocyanine and catalytic oxidation of ethanethiol. *Fuel* **2019**, 242, 573-579. DOI: <https://doi.org/10.1016/j.fuel.2019.01.055>.
10. Wiseman, F. L.; Scott, D. W.; Tamine, J.; O'Connell, R.; Smarra, A.; **Mitchell, N.** On the derivation of a general thermodynamic expression for the reaction rate constant for cosolvent reaction systems. *International Journal of Chemical Kinetics* **2018**, 50 (12), 873-879. DOI: 10.1002/kin.21222.
11. Cooper, W. C.; **Chilukoorie, A.**; **Polam, S.**; Scott, D.; Wiseman, F. A comparative study on the hydrolysis of acetic anhydride and N,N-dimethylformamide: Kinetic isotope effect, transition-state structure, polarity, and solvent effect. *Journal of Physical Organic Chemistry* **2017**, 30 (12), e3701. DOI: 10.1002/poc.3701 (accessed 2020/10/13).
12. Scott, D. W.; **Alseiha, Y.** Determining detection limits of aqueous anions using electrochemical impedance spectroscopy. *Journal of Analytical Science and Technology* **2017**, 8 (1), 17. DOI: 10.1186/s40543-017-0126-9.
13. Scott, D. W.; Wiseman, F. L.; Cooper, W. C.; **Alseiha, Y. S.** Relative permittivity measurements of aqueous co-solvent systems including tetrahydrofuran. *Chemical Data Collections* **2017**, 11-12, 59-66. DOI: <https://doi.org/10.1016/j.cdc.2017.08.001>.
14. Wiseman, F. L.; Scott, D. W.; Cooper, W. C.; Tamine, J.; O'Connell, R.; **Mitchell, N.** Detailed thermodynamic analysis of the activation parameters for the simple hydrolysis of acetic anhydride in the acetonitrile/water cosolvent system. *RSC Advances* **2017**, 7 (46), 28965-28978, 10.1039/C7RA05260J. DOI: 10.1039/C7RA05260J.
15. James, T. H.; Cannon, C.; Scott, D.; Alothman, Z.; Apblett, A.; Materer, N. F. Titania-Hydroxypropyl Cellulose Thin Films for the Detection of Peroxide Vapors. *ACS Applied Materials & Interfaces* **2014**, 6 (13), 10205-10212. DOI: 10.1021/am501535g.
16. Materer, N.; Field, P.; Ley, N.; Soufiani, A. R.; Scott, D.; Ley, T.; Apblett, A. Passive Wireless Detection of Corrosive Salts in Concrete Using Wire-Based Triggers. *Journal of Materials in Civil Engineering* **2014**, 26 (5), 918-922. DOI: doi:10.1061/(ASCE)MT.1943-5533.0000881.
17. Scott, D.; Apblett, A.; Materer, N. F. Follow-up study on the effects on well chemistry from biological and chemical remediation of chlorinated solvents. *Journal of Environmental Monitoring* **2011**, 13 (9), 2521-2526, 10.1039/C1EM10360A. DOI: 10.1039/C1EM10360A.
18. Scott, D.; Apblett, A.; Materer, N. F. Iron-rich Oklahoma clays as a natural source of chromium in monitoring wells. *Journal of Environmental Monitoring* **2011**, 13 (12), 3380-3385, 10.1039/C1EM10608B. DOI: 10.1039/C1EM10608B.
19. Scott, D. W.; Bunce, R. A.; Materer, N. F. Synthesis Of 3,6-Dihalophenanthrene Derivatives. *Organic Preparations and Procedures International* **2006**, 38 (3), 325-331. DOI: 10.1080/00304940609355993.

PRESENTATIONS

- Event: Oral Presentation, National ACS Fall Meeting
Washington D.C.
Date: August 19, 2025
Title: Kinetics of Hydrogen Bronze Materials Converting Cellulose to Hydrocarbons
- Event: Oral Presentation, National ACS Fall Meeting
Denver, CO
Date: August 21, 2024
Title: Mechanistic Insight to Generating Hexane from Cellulose Using Hydrogen Bronze Materials
- Event: Oral Presentation, SWRM
Oklahoma City, OK
Date: November 15 – 18th, 2023
Title: Mechanistic Insight to Generating Hexane from Cellulose Using Hydrogen Bronze Materials
- Event: Oral Presentation, SERMACS
Date: October 19th – October 22nd, 2022
Title: Microwave Pretreatment for Enhanced Cellulase Enzymatic Activity
- Event: Oral Presentation, ACS Southeast Regional Meeting
Charlotte, NC
Date: Friday November 3rd, 2018
Title: Synthesis of sodium cobalt(II) tetrasulfophthalocyanine and oxidation of ethanethiol
- Event: Co-Poster presentation, ACS National Meeting
New Orleans, LA
Date: March 18-22, 2018
Title: Preparation of Fundamental Building Blocks of Oligoviologens
- Event: Oral Presentation, ACS Southwest Regional Meeting
Ft. Worth, TX
Date: November 19 – 22, 2014
Title: A new indium complex toward photoreduction of carbon dioxide
- Event: Seminar, University of Arts and Sciences of Oklahoma
Chickasha, OK
Date: April 11, 2014
Title: Development of a Sensor for Detection of Chlorine Dioxide Gas
Event: Oral Presentation, ACS Southwest Regional Meeting

Waco, TX
 Date: November 16 – 19, 2013
 Title: Investigation of a solid state organic photovoltaic device and thermoelectric annealing of antimony doped tin oxide for organic optoelectronics

Event: EPA P3 Competition
 Washington D.C.
 Date: April 18-22, 2013
 Title: Fabrication and Characterization of a Solid State Organic Photovoltaic For the Purpose of Improving Efficiency
 Students: Josh Smith, Cody Soden, Laura Berdugo

Event: Oral Presentation, ACS Southwest Regional Meeting
 Date: November 7, 2007
 Title: Differentiating between Natural and Industrial Sources of Chromium Contamination Using a Sequential Extraction Method

Event: Oral Presentation, ACS Pentasectional Meeting
 Date: March 10, 2007
 Title: Sequential Extraction Method Differentiating Natural and Industrial Sources of Chromium

STUDENT PRESENTATIONS

Event: Poster Presentation, SERMACS
 Date: October 18th – 21st, 2023
 Student: Mubarak Osman
 Title: Aqueous Copper Free Method For Oxidative Dephosphorylation

Event: Oral Presentation, SERMACS
 Date: October 19th – October 22nd, 2022
 Student: Jenna Stewart
 Title: Aqueous Copper Free Method For Oxidative Dephosphorylation

Event: Poster, SERMACS
 Date: October 20th – October 23rd, 2019
 Student: Mary Wheeler
 Title: Electrolysis of Base Hydrolyzed Cellulose to Oxalate

Event: Poster, SERMACS
 Date: October 20th – October 23rd, 2019
 Student: **Mohammad Bajunaid**
 Title: Molybdenum Tungsten Bronze Films and Conversion of CO₂ to Formate

Event: Poster, SERMACS

Date: October 31st – November 3rd , 2018
 Student: **Sami Alharbi**
 Title: Molybdenum Bronze Film for Electrocatalytic Reduction of Carbon Dioxide

Event: Poster, SERMACS
 Date: October 31st – November 3rd , 2018
 Student: Hannah Hill
 Title: Sodium Cobalt(II) Tetrasulfophthalocyanine and oxidation of ethanthethiol to diethyl disulfide

Event: Poster Presentation, SERMACS
 Date: October 31-November 3, 2018
 Student: **Fatunwase Akintayo**
 Title: Enzymatic Conversion of Microcrystalline Cellulose and Arundo donax to Glucose

Event: Poster, SERMACS
 Date: October 31-November 3, 2018
 Student: **Wasiu Afolaju**
 Title: Thermodynamic Analysis of Simple Hydrolysis of Acetic Anhydride in Tetrahydrofuran-Water

Event: Oral Presentation, SERMACS
 Date: October 31-November 3, 2018
 Student: **Ovuokenye Omadoko**
 Title: Simple Photochemical Reduction of Carbon Dioxide to Formate

Event: Poster Presentation, Appalachian Student Research Forum
 Date: April 5, 2018
 Student: **Ovuokenye Omadoko**
 Title: Simple Photochemical Reduction of Carbon Dioxide to Formate Under Mild Acidic Conditions

Event: Poster Presentation, SERMACS
 Date: November 9-11, 2017
 Students: **Nathan Mitchell, Samson Olowoyu**
 Title: Eyring Activation Energies: Acetic Anhydride Hydrolysis in Co-Solvent Systems

Event: Oral Presentation, SERMACS
 Date: November 9-11, 2017
 Student: **Yahya Alseiha**
 Title: Simple Impedance Spectroscopy and Determination of Anions in Solutions

Event: Honor's Thesis Oral Presentation, Boland Symposium
Date: March 28, 2017
Student: Claire Baker
Title: Acidic Hydrogen Molybdenum Bronze Catalysis of the Hydrolysis of Cellulose

Event: Honor's Thesis Oral Presentation, Boland Symposium
Date: March 28, 2017
Student: Troy Dolmetsch
Title: Phosphomolybdic acid catalyzed hydrolysis of cellulose