

# Edward C. Ellingsworth

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Process engineer, analytical chemist, surface scientist, computer programmer, and digital electronics hobbyist.

## Education

<b>Ph.D. Analytical Chemistry</b>	2015	The University of Alabama, Tuscaloosa, AL <i>"Spectroscopic, structural, and electrical characterization of thin films vapor deposited from the spin-crossover complex Fe(phen)<sub>2</sub>(NCS)<sub>2</sub>"</i> Advisor: Dr. Greg Szulczewski
<b>M.S. Analytical Chemistry</b>	2014	The University of Alabama, Tuscaloosa, AL
<b>B.S. Chemistry</b> Magna cum laude	2006	Ashland University, Ashland, OH
<b>Associate of Science</b>	2002	Lorain County Community College, Elyria, OH
<b>Associate of Arts</b>	2001	Lorain County Community College, Elyria, OH

## Relevant Experience

<b>Senior Process Engineer</b>	2017 - present	Evonik Corporation, Theodore, AL <i>Responsible for Process Analytical Technology service within North America including study, design, and implementation of in-line/on-line chemical analyzers and external plant/process surveillance systems.</i>
<b>Lab Manager</b>	2015 - present	Airgas USA, LLC, Theodore, AL <i>Manage lab personnel; regulatory compliance (FDA, DOT, ISO); instrumentation calibration, acquisition, upkeep, method development; production scheduling; head of local QC; radiation control officer.</i>
<b>Graduate Teaching Assistant</b>	2009 - 2014	The University of Alabama, Tuscaloosa, AL <i>Instruction of general chemistry, quantitative chemical analysis, and instrumental chemistry laboratory sections.</i>
<b>Lab Analyst</b>	2007 - 2009	Airgas, Inc., Theodore, AL <i>Gas chromatography, component concentration verification, impurity analysis, and issuance of COA's for purified compressed gases.</i>
<b>Formulations Specialist</b>	2006 - 2007	WIL Research, Ashland, OH <i>Preparation of formulations used to dose animals in pre-clinical toxicology studies.</i>

## Awards and Fellowships:

National Alumni Association Collegiate License Tag Fellowship, University of Alabama, 2011  
Outstanding Second Year Graduate Student, University of Alabama, Chemistry Dept., 2011  
Presidential Scholarship, Lorain County Community College, 2001, 2002

## Professional Associations

American Chemical Society - Member

## Proficiencies and Skills:

- GC (MS, FID, TCD, ECD, PDHID)
- XPS
- AFM
- FT-IR (esp. ATR)
- Raman microscopy
- UV/Vis spectroscopy
- Physical vapor deposition
- XRD (single crystal and powder)
- Process analytical technology
- Small project management
- Electrical characterization
- Fluorescence spectroscopy
- VSM
- MFM
- TGA
- Computational methods (Gaussian)
- Water contact angles
- Python, php, javascript
- Linux system administration
- Diagnostics and repair
- Networking
- Office Suite
- MySQL databases
- Web development
- Computer aided drafting (CAD)
- Microsoft SharePoint

## Publications

S. Ma; Anderson, K.; Guo, L.; Yousuf, A.; Ellingsworth, E. C.; Vajner C.; Wang, H.-T.; Szulczewski, G. Temperature-dependent thermopower and electrical conductivity of Te nanowire/poly(3,4-ethylenedioxythiophene):poly(4-styrene-sulfonate) microribbons. *Appl. Phys. Lett.* **2014**, *105*, 073905.

Ellingsworth, E. C.; Turner, B.; Szulczewski, G. Thermal conversion of  $[\text{Fe}(\text{phen})_3](\text{SCN})_2$  thin films into the spin crossover complex  $\text{Fe}(\text{phen})_2(\text{NCS})_2$ . *RSC Adv.* **2013**, *3*, 3745-3754.

Kreil, J.; Ellingsworth, E.; Szulczewski, G. X-ray photoelectron spectroscopy study of para-substituted benzoic acids chemisorbed to aluminum oxide thin films. *J. Vac. Sci. Technol. A* **2013**, *31*, 06F107.

Szulczewski, G.; Brauer, J.; Ellingsworth, E.; Kreil, J. Electronic and structural characterization of LiF tunnel barriers in organic spin-valve structures, *J. Appl. Phys.* **2011**, *109*, 07C509.

Hanes, Jr., R.E.; Ellingsworth, E.C.; Griffin, S.T.; Rogers, R.D.; Bartch, R.A. Polybenzocrown ethers: synthesis by cesium-assisted cyclization and solid state structures. *ARKIVOC* **2010**, *vii*, 217-237.

## Presentations and Posters

Ellingsworth, E.; Szulczewski, G. Spectroscopic, structural, and electronic characterization of vapor deposited thin films from the spin-crossover complex  $\text{Fe}(\text{phen})_2(\text{NCS})_2$ . MINT Center Annual Fall Research Review and Workshop, Tuscaloosa, AL November 14, 2013.

Ellingsworth, E.C.; Turner, B.; Szulcewski, G. Spectroscopic characterization of vapor deposited thin films from the spin-crossover complex  $\text{Fe}^{\text{II}}(\text{phen})_2(\text{NCS})_2$  (phen = 1,10-phenanthroline). American Chemical Society 245<sup>th</sup> National Meeting and Exhibition, New Orleans, LA April, 11, 2013.

Ellingsworth, E.C.; Szulczewski, G.; Lauter, V. Spectroscopic and magnetic characterization of the spin-crossover transition in thin films of  $\text{Fe}(\text{C}_{12}\text{H}_8\text{N}_2)_2(\text{NCS})_2$ . American Vacuum Society 58<sup>th</sup> International Symposium and Exhibition, Nashville, TN November 2, 2011.

Ellingsworth, E.C.; Turner, B.; Kreil, J.; Brauer, J.; Szulczewski, G. Severe morphological changes in thin films deposited from the spin-crossover complex  $\text{Fe}(\text{phen})_2(\text{SCN})_2$ . 66th Annual South Western Regional Meeting and 62nd Annual South Eastern Regional Meeting of the American Chemical Society, New Orleans, LA December 1-3, 2010.

Ellingsworth, E.C.; Turner, B.; Kreil, J.; Brauer, J.; Szulczewski, G. Severe morphological changes in thin films deposited from the spin-crossover complex  $\text{Fe}(\text{phen})_2(\text{SCN})_2$ . MINT Center Annual Fall Research Review and Workshop, Tuscaloosa, AL November 10, 2010.