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*Well developed laboratory skills and research and teaching experience. Excellent personal motivation with a proven ability to work collaboratively in a team environment as well as independently.*

# EDUCATION

Saint Louis University – St. Louis, MO

Ph.D., Chemistry August 2015

Research Advisor: Dr. Steven W. Buckner

Dissertation: Synthesis of Thermodynamically Unstable Nanoparticles using Electrical Explosion of Wires and Reverse Micelles.

Eastern New Mexico University, Portales, NM

Master of Science in Chemistry

Research Advisor: Dr. Robert D.Long July 2010

GPA: 4.00 / 4.00

Thesis: Systematic Optimization of the Transesterification Process for the Conversion of Algal Biomass to Biodiesel

Cairo University, Benisuef, Egypt

Pre-Masters in Chemistry October 2004

GPA: 3.09 / 4.00

Cairo University, Benisuef, Egypt

Bachelor of Science in Chemistry/Physics May 2003

GPA: 3.09 / 4.00

## EXPERIENCE

Instructor/Assistant Lab Coordinator, Saint Louis University – Saint Louis, MO August 2015-present

* Teaching (Developing lab curricula- Substitute teaching for lectures-teaching labs-prepares course-related materials-problem solving-office hours-grade exams)
* Preparatory ((leads group meetings- responsible for lab and equipment maintenance-monitoring inventory-ordering and maintaining chemicals, supplies and equipment-processing lab waste)
* Grading: ( Involved in weekly meetings to support grading assistants by answering questions and solving issues)

Postdoctoral Researcher, Saint Louis University-Saint Louis, MO August 2015-present

Nanomaterials synthesis

Teaching Assistant, Saint Louis University – Saint Louis, MO August 2010-July 2015

* Taught general, allied health and organic chemistry labs(5 sections a year-3 in fall and 2 in spring semester).
* Monitored experiments for student chemistry labs
* Lectured and enforced basic lab procedures and safety protocols.

Graduate Assistant, Eastern New Mexico University - Portales, NM Jan. 2009-July2010

* Assisted teaching general and organic chemistry.
* Prepared reagents, setup lab, monitored experiments for student chemistry labs, managed equipment and chemical inventory.
* Taught and enforced basic lab procedures and safety protocols.

Instructor of Language, Eastern New Mexico University - Portales, NM Summer 2009

* Taught Arabic as non-credit course to students and community members.
* Developed effective lesson plans utilizing a variety of teaching methods.
* Used advanced technology and equipment to enhance student’s learning.

Instructor of Mathematics, Eastern New Mexico University - Portales, NM Summer 2009

* Taught college level geometry classes to high school students participating in a dual enrollment program.
* Worked closely with students and provided one-on-one tutorial.

Research Assistant, Eastern New Mexico University - Portales, NM Summer 2009

* Research project on efficient extraction of oil from microalgae using different solvents/methods
* Used instrumental characterization techniques, investigated different catalyst systems for biodiesel production.

Research Assistant, Cairo University - Benisuef, Egypt 2005-2007

* Studied the emulsion copolymerization of methyl methacrylate and acrylonitrile in presence and absence of salen and other polymer-related research.

### LAB SKILLS

* Nanomaterials synthesis techniques such as electrical explosion of wires, wet organic and inorganic chemistry, organometallic synthesis, hydrothermal and reverse micelles techniques.
* Air-sensitive techniques using Schlenk line-glove box
* Characterization of nanomaterials using PXRD-Raman microscopy-electron microscopy (SEM-TEM)-DLS-DSC-TGA
* Oil extraction using variety of methods/solvents (Folch, Bligh/Dyer, other solvents) and Soxhlet extraction.
* Chemical analysis by Fluorescence spectroscopy, Raman Spectroscopy, NMR spectroscopy, IR spectroscopy, HPLC/MS and GC/MS.
* Oil/FAME (Fatty Acid Methyl Ester) derivatization techniques.
* Chemical inventory management.

### PUBLICATIONS

1. Long, R.D.,Abdelkader, E., “Mixed-polarity Azeotropic Solvents for Efficient Extraction of Lipids from Nannochloropsis Microalgae”, 2011, *Am J Biochem Biotechnol*, 7, 70-73. doi: 10.3844/ajbbsp.2011.70.73
2. E. Abdelkader and S. Buckner, "Synthesis of NaX (X = F, Cl, Br, I) Nanoparticles," *Soft Nanoscience Letters*, 2013, 3, 22-27. doi: 10.4236/snl.2013.31005.
3. E.Abdelkader, P. Jelliss, S.Buckner, ”Capping and Stabilization of Zinc Nanoparticles produced by Electrical Explosion of Wires using PIERMEN” Preprints-ACS, Division of Energy &Fuels (2013), 58, 343-344
4. E.Abdelkader, P. Jelliss, S.Buckner, “Synthesis of Organically-Capped Metallic Zinc Nanoparticles using Electrical Explosion of Wires (EEW) coupled with PIERMEN”, *Materials Chemistry and Physics*, 2015, 149-150, 238-245.
5. Abdelkader, E.; Jelliss, P. A.; Buckner, S. W.,” Metals and Metal Carbides Nanoparticle Synthesis using Electrical Explosion of Wires (EEW) Coupled with Epoxide Polymerization Capping” *Inorganic Chemistry* 2015, *54* (12), 5897-5906.
6. E.Abdelkader, P. Jelliss, S.Buckner, “Synthesis of Acetamide via Acetonitrile Hydrolysis: Catalytic Approach using Electrical Explosion of Wires (EEW)”, in preparation

PRESENTATIONS

1. E.Abdelkader, S.Buckner “Synthesis of Highly Water-Soluble Nanoparticles” Sigma Xi Research Symposium (St.Louis, MO) April 2012
2. E.Abdelkader, S.Buckner “Synthesis of Highly Water-Soluble Nanoparticles” Missouri Inorganic Day, University of Missouri-St.Louis, May 2012
3. E.Abdelkader, P. Jelliss, S.Buckner “Synthesis and Capping of Zinc Nanoparticles by Electrical Explosion of Wires using PIERMEN” NanoFrontiers Symposium, University of Missouri-Columbia, June 2013
4. E.Abdelkader, P. Jelliss, S.Buckner “Capping and Stabilization of Zinc Nanoparticles produced by Electrical Explosion of Wires using PIERMEN” 246th ACS national meeting, Division of Energy and Fuels, Indiana, September 2013
5. E.Abdelkader, P. Jelliss, S.Buckner “Synthesis of Acetamide by Hydration of Nitriles with Zinc Catalyst produced by Electrical Explosion of Wires” Sigma Xi Research Symposium (St.Louis, MO) May 2014
6. E.Abdelkader, P. Jelliss, S.Buckner “Metals and Metal Carbides Synthesis using EEW” ACS Midwest regional meeting, University of Missouri in Columbia, November 2014
7. E.Abdelkader, P. Jelliss, S.Buckner “Metals and Metal Carbides Synthesis using EEW” St.Louis Institute of Nanoscience and Nanomedicine Symposium, St.Louis University, November 2014
8. E.Abdelkader, P. Jelliss, S.Buckner “Metals and Metal Carbides Synthesis using EEW” 249th ACS national meeting, Division of Inorganic Chemistry, Colorado, March 2015
9. E.Abdelkader, P. Jelliss, S.Buckner “Synthesis of Acetamide from acetonitrile hydrolysis using Electrical Explosion of Wires catalyzed with metal nanoparticles” 249th ACS national meeting, Division of Inorganic Chemistry, Colorado, March 2015
10. E.Abdelkader, P. Jelliss, S.Buckner “Metals and Metal Carbide NPs Synthesis using EEW” Graduate Research Symposium, (St.Louis, MO) April 2015
11. E.Abdelkader, P. Jelliss, S.Buckner “Main group nanoparticles produced by EEW” Sigma Xi Research Symposium (St.Louis, MO) May 2015

### TRAINING AND CERTIFICATIONS

* Pathways to Higher Education (PHE)Training sponsored by FGF, FORD and NCW: Communication and Presentation skills, Cairo, Egypt 2004
* Internship at waste water station, Benisuef, Egypt 2002

COMPUTER SKILLS

* MS. Windows, Ms. Office (Word, Excel, PowerPoint, Access, Outlook 1999-2003
* Linux Essentials (RH033), Internet Fundamentals, Networks Fundamentals, Hardware Maintenance (A+ Certified), ASP.NET, VB.NET, Flash, Photoshop CS and SQL

LANGUAGE SKILLS

* Fully fluent (verbal and written) in English and Arabic.
* Basic knowledge of German.

### HONORS AND ACTIVITIES

* Carol M. and Joseph R. Franks Graduate Award in Chemistry Saint Louis University 2015
* Vice President of MSA Club at ENMU- 2009/2010
* Active member of International Club at ENMU - 2009-2010
* Participated in Egyptian student cultural exchange program Diamond Point, NY Summer 2006 & Wildwood, NJ Summer 2005
* Gordon and Margaret Honor Chemistry scholarship, ENMU, 2009-2010
* Upward Bound recognition certificate, ENMU, 2009
* Certificate of Recognition from Syndicate of Scientists, Cairo, Egypt, 2004
* Freshmen Science scholarship Cairo University, Benisuef, Egypt 1999-2000