

PHELPS, CLARICE E.

8114 Canter Ln, Powell, TN | 619-889-7502 | phelpsclarice@gmail.com

EDUCATION

University of Tennessee- Knoxville 2020-present

Nuclear Engineering Program
PhD student

University of Texas- Austin 2016-2020

M.S. Mechanical Engineering
Nuclear and Radiochemistry Program

Tennessee State University
B.S. Chemistry 2003

AWARDS

GEM Fellow 2021-2022

NRC Fellow 2020-2021

Top 40 Under 40- Knoxville, TN 2020

Oak Ridge National Lab Community Outreach Award 2020

African American Affinity Resource Group- Honors Award 2019

IUPAC Periodic Table of Younger Chemists Award- Einsteinium 2019

YWCA Tribute to Women (Science, Technology, and Innovation) 2017

WORK EXPERIENCE

Oak Ridge National Laboratory

Ni-63/ Se-75 Project Manager- Medical, Industrial, and Research Isotopes Group (MIRI) 2014-present

Responsible for industrial use isotope production, processing, and distribution as well as day to day operations. Maintain a budget of >\$2 million for personnel, facilities, processing and dispensing of isotopes.

CARIBU Project Lead 2019- present

Collaborated with scientists at UC- Berkeley, Lawrence Berkley National Lab, Argonne National Lab as well as Lawrence Livermore National Lab for Cf-252 source production method development for the Californium Rare Isotope Breeder Upgrade at Argonne National lab.

Research and Development Staff Member- Nuclear Material Processing Group (NMP) 2011-2014

Provided research and development support for the Pu-238 Supply Program for NASA in the area of UV-VIS spectroscopy development and chemical optimization for the separation of Pu-238 and Np-237.

Contributed to the development work and participated in the purification of 27mg of Bk-249 for the confirmation of the discovery of element Z=117, Tennessine (Ts).

Collaborated with Argonne National Lab to electrodeposit 1 Ci of Cf-252 for the CARIBU program for ATLAS.

Subject matter expert for research studies involving spectrophotometry of specific radionuclides and electrodeposition operations. Interpreted spectral data of in- situ analysis and radioactive material synthesis.

Nuclear Operations Technician- Nonreactor Nuclear Facilities Division (NNFD) 2009-2011

Participated in the processing, recovery, and purification of transuranic elements from irradiated targets obtained from the High Flux Isotope Reactor (HFIR)

Cole Parmer Instrument Company

Product Applications Specialist 2008-2009

Provided technical support to customers in the form of product recommendations, troubleshooting, and research for various individuals in the scientific and engineering community.

United States Navy

Engineering Laboratory Technician- Reactor Laboratories Division, USS Ronald Reagan 2003-2008

Responsible for maintaining the reactor and steam plant chemistry conditions, predicting trends in analysis, and maintaining level of knowledge for immediate actions in casualty situations on-board a nuclear-powered air-craft carrier.

RELATED EXPERIENCE

Youth Outreach in S.T.E.M. (Yo-STEM)

Board Member 2018- present

Provide STEM related services and activities to students in underserved communities through hands-on activities and projects.

Alpha Kappa Alpha Sorority, Inc

Vice President- Knoxville, TN chapter 2014-2018

Member 2002-2014, present

Implement the sorority's international programs in the Knoxville Community to include initiatives such as A.S.C.E.N.D.- a program designed to prepare students for college or trade schools and enhance their world knowledge through simulated Mini- United Nations scenarios.

ORNL Nuclear Science and Engineering Directorate Educational Outreach

Mentor 2016-present

Knox County Schools Liaison 2015- present

Assist students with learning about nuclear science and energy via the use of the ORNL science trailers.

Project G.R.A.D. (Graduation Really Achieves Dreams)

Guest Instructor 2015

Chemistry instructor in the Project G.R.A.D. Summer Institute focusing on how to determine different chemical compounds and concentrations utilizing UV-VIS spectroscopy.

PUBLICATIONS AND PAPERS

C. Phelps, ORNL and SuperHeavy Element Discovery: Tennessine (Ts) and Beyond (Z=199, 120). Presentation- American Nuclear Society's Young Member Group Virtual Series 2020

C. Phelps, In-Situ Characterization of Lanthanide Electrodepositions, Thesis for University of Texas- Austin 2020

| | |
|--|---------------|
| C. Phelps , Processing of Ni-63 rabbits, Poster Presentation for ORNL Isotope Program Review | 2019 |
| T. Hylton, C. Phelps , Dissolution of Light Curium Oxide with a Catalyzed Electrolytic Process, T ORNL/ TM-2018/5 | 2019 |
| C. Phelps , L. Delmau, R. Boll, C. Hindman, Investigations Using LN, LN2, and LN3 Resins for Separation of Actinium and Lanthanum, 252 nd ACS National Meeting, Philadelphia, PA | 2016 |
| S. Robinson, B. Patton, C. Phelps Mk-18 Target Processing History at Oak Ridge National Laboratory, ORNL/TM-2015/577 | 2015 |
| L.H.Delmau, D.W. DePaoli, C.H. Mattus, C.E. Phelps , B.D. Roach, Hydroxylamine Nitrate Decomposition under Non-radiological Conditions, J. McFarlane, ORNL/TM-2015/156 | 2015 |
| M. Torrico, R. Boll, M. Matos, C. Phelps , Electrodeposition of Actinide Compounds from Aqueous Ammonium Acetate, 245 th ACS National Meeting Presentation | 2013 |
| M. Torrico, R. Boll, M. Matos, C. Phelps , Electrodeposition of Actinide Compounds from an Ammonium Acetate Matrix: Experimental development and optimization, 245 th American Chemical Society National Meeting Abstract | 2013 |
| J. Warburton, C. Phelps , D. Benker, B. Patton, R. Wham, UV- Visible spectroscopic process monitor for hot cell mixer-settler separations at ORNL's Radiochemical Engineering Development Center, Institute for Nuclear Materials Management Conference Paper | 2013 |
| C. Phelps , R. Boll, C. Porter Electrodeposition of Californium-252 using Ammonium Acetate Solution, 36 th Actinide Separations Conference Poster Presentation | 2012 |
| S. VanCleve, R. Boll, C. Phelps , J. Ezold, Recovery and Purification of Berkelium-249 for SHE research, 36 th Actinide Separations Conference Poster Presentation | 2012 |
| MEMBERSHIPS | |
| American Chemical Society | 2017 |
| American Nuclear Society- Oak Ridge Section | 2017 |
| Alpha Kappa Alpha Sorority, Inc | 2003- present |