

Andre Z. Clayborne, Ph.D.

a. Professional Preparation

Radford University, Radford, VA	Physical Science	B.Sc.	2002
Virginia Commonwealth University, Richmond, VA	Applied Physics	M.Sc.	2006
Virginia Commonwealth University, Richmond, VA	Chemistry	Ph.D.	2009
University of Jyväskylä, Jyväskylä, Finland	Nanoparticles (Theory)		2010-2012
Argonne National Laboratory, Argonne, IL	Electrocatalysis (Theory)		2012-2013
University of Jyväskylä, Jyväskylä, Finland	Materials (Theory)		2012-2015
Kansas State University, Manhattan, KS	Excited State Dynamics		2016

b. Appointments

1/2018 – present	International Research Fellow, State Key Laboratory of Electroanalytical Chemistry, Institution Changchun institute of Applied Chemistry, Chinese Academy of Sciences, Jilin, China
8/2017 - present	Assistant Professor, Physical Chemistry, Howard University, Washington D.C., USA
9/2016 – 8/2017	Assistant Professor, Physical Chemistry, University of Missouri-Kansas City, Kansas City, MO, USA

c. Publications

Recent Relevant Publications

1. Y. Lu, C. Zhang, X. Li, W. Xing, A. R. Frojd, A. Clayborne, W. Chen “Enhanced Electrocatalytic Activity of Au₂₅ clusters by Single Platinum Atom Doping” *Nano Energy* **50**, 316-322 (2018) doi: 10.1016/j.nanoen.2018.05.052
2. Kenzler, S.; Schrenk, C; Frojd, A.R.; Hakkinen, H.; Clayborne, A.Z.; Schnepf, A.; “Au₇₀S₂₀(PPh₃)₁₂: an intermediate sized metalloid gold cluster stabilized by the Au₄S₄ ring motif and Au-PPh₃ groups” *Chemical Communications* **54**, 248-251, (2018). DOI: 10.1039/C7CC08014J
3. Gao, X.; He, S.; Zhang, C.; Du, C.; Chen, X.; Clayborne, A.; Chen, W.; “Single Crystal Sub-Nanometer Sized Cu₆(SR)₆⁻ Clusters: Structure, Photophysical Properties, and Electrochemical Sensing” *Advance Science*, **3** 1600126 (2016). DOI: 10.1002/advs.201600126
4. Klinger, M.; Schenk, C.; Henke, F.; Clayborne, A.; Schnepf, A.; Unterreiner, A.-N.; “UV photoexcitation of a Metalloid Ge₉ Cluster: Ultrafast Response” *Chemical Communications* **51**, 12278-12281 (2015) DOI: 10.1039/C5CC04513D
5. C. Schrenk, B. Gerke, R. Pöttgen, A. Clayborne, A. Schnepf “First Reactions with a Metalloid Tin Cluster {Sn₁₀[Si(SiMe₃)₃]₄}²⁻: Ligand Elimination vs. Coordination Chemistry” *Chemistry – A European Journal* **21**, 8222 (2015)

Other Significant Products

1. Chun, H.-J.; Apaja, V.; Clayborne, A.; Honkala, K.; Greely, J. “Understanding the Electrochemical Reduction of Nitric Oxide on the Single Crystal Pt(100) Surface: A DFT and Kinetic Monte Carlo Study” Submitted *ACS Catalysis*, (2017), **7**, pp 3869–3882 DOI: 10.1021/acscatal.7b00547

2. Clayborne, A.; Chun, H.-J.; Rankin, R.B.; Greely, J. “Elucidation of Pathways for NO Electroreduction on Pt(111) from First Principles” *Angewandte Chemie* **54**, 8255-8258 (2015) DOI: 10.1002/anie.201502104
3. Pohjolainen, E.; Häkkinen, H.; Clayborne, A. “The Role of the Anchor Atom in the Ligand of the Monolayer-Protected Au₂₅(XR)₁₈⁻ Nanocluster” *Journal of Physical Chemistry C* **119**, 9587-9594 (2015) DOI: 10.1021/acs.jpcc.5b01068
4. Lindgren, L.; Clayborne, A.; Lehtovaara, L. “Optical Properties of Aluminum Metalloid Clusters: Time-dependent Density Functional Theory Study” *Journal of Physical Chemistry* **119**, 19539-19547 (2015) DOI: 10.1021/acs.jpcc.5b05894
5. E. Yitamben, A. Clayborne, S. Darling, N. Guisinger “L-Tryptophan on Cu(111): Engineering a Molecular Labyrinth Driven by Indole Groups” *Nanotechnology* **26**, 235604 (2015)

d. Synergistic Activities

Advisor – ACS Student Chapter, Howard University (2018)

Peer Reviewer for Department of Energy Proposals (2016 – present).

Co-organizer for Computational Research at Howard University (2018)

Developed a short course for students interested in computational research (2018)

Communications Chair, National Society of Black Physicists (2016)