

Curriculum Vitae

JOHNSON KWAKU AGBO

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Summary

Dr. Johnson Agbo is an Assistant Professor of Physical Chemistry at Coastal Carolina University, Conway, South Carolina USA. In this capacity, he has been effectively teaching General Chemistry, Physical Chemistry and Chemical Kinetics since 2013. He holds a Ph.D. in Chemical Physics from University of Nevada Reno, and was an assistant professor of Physics and Chemistry at Sterling College in Sterling, Kansas before assuming his current position at Coastal Carolina University. A native of Ghana, he graduated with a BSc (Hons) in Mathematics and a Diploma in Science Education from the University of Cape Coast, Ghana. Before advancing to pursue a Ph.D degree in Chemical Physics Dr. Agbo also attempted a Masters Degree in Mathematics at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana but could not defend his thesis as a result of the demise of his advisor and the timely offer of admission to the University of Nevada, Reno. Dr. Agbo has extensive experience teaching Mathematics, Physics and Chemistry. Besides being an assistant professor of Physical Chemistry, Dr. Agbo's PhD program equipped him well enough to teach Physics and Chemistry up to university level and could confidently teach courses in General Physics, Classical Mechanics, Thermodynamics, Statistical Mechanics, Quantum Mechanics, Molecular Spectroscopy, Chemical Kinetics and Nuclear Chemistry. In addition to his teaching, Dr. Agbo conducted extensive research in "Energy Transfer in Biological Molecules". He mentored several students in undergraduate research during his graduate studies at the University of Nevada and supervised two undergraduate students at Coastal Carolina University on their senior projects in 'energetics and isomerization kinetics of small molecules'. Dr. Agbo is an active member of the American Chemical Society.

Education

Ph.D. in Chemical Physics 2001 - 2007
University of Nevada, Reno, NV. USA
Adviser: Prof David M. Leitner.

M.Sc. in Mathematics (Attempted) 1994 –
KNUST, Kumasi, Ghana
Adviser: Late Prof Owusu Ansah

B.Sc. (Honors) in Mathematics. 1987 – 1991
University of Cape Coast, Cape Coast, Ghana

Diploma in Mathematics Education. 1987 – 1991
University of Cape Coast, Cape Coast, Ghana

Professional Experience

Associate Professor of Physical Chemistry 2017 – present
Coastal Carolina University, Conway. South Carolina
Teaching Physical Chemistry, Physical Biochemistry, General Chemistry and the associated laboratory sessions, Chemical Kinetics and Nuclear Chemistry.

Assistant Professor of Physical Chemistry 2013 – 2017
Coastal Carolina University, Conway. South Carolina
Teaching Physical Chemistry, Physical Biochemistry, General Chemistry and the associated laboratory sessions and Chemical Kinetics.

Assistant Professor of Physical Chemistry and Physics 2007 – 2013
Sterling College, Sterling. Kansas
Taught College Physics, Physical Science, Physical Chemistry, College Algebra, Partial Differential Equations and Calculus.

Graduate Teaching and Research Assistant 2001 - 2007
University of Nevada, Reno, NV. USA

Math Teacher Upward Bound Program Summer 2005
University of Nevada, Reno, NV
Taught algebra, trigonometry and pre-calculus to freshmen and sophomore high school first-generation College bound students.

Chemistry Teacher Upward Bound Program Summer 2003
University of Nevada, Reno, NV
Taught general chemistry to freshmen and sophomore high school first generation College bound students.

Mathematics and Chemistry Teacher 1999 - 2001
Yaa Asantewaa Girls' High School, Kumasi, Ghana
Taught mathematics at all levels and chemistry including the “electives” which are equivalent to the AP series in the United States educational system. Guided and advised students in the choice of academic discipline to pursue in college.

Visiting Lecturer (Mathematics) 1996 – 1999
University College of Education, Kumasi, Ghana
Taught algebra, trigonometry and analytic geometry, calculus and differential equations at all levels in the college set up. (Freshmen to seniors)

Mathematics and Physics Teacher 1992 - 1994
Holy Child Girls' High School, Cape Coast, Ghana
Taught mathematics at all levels and some physics including the “electives” which are equivalent to the AP series in the United States educational system. Served as a guidance and counseling coordinator.

Visiting Lecturer, Department of Mathematics 1991 - 1992
University of Cape Coast, Cape Coast, Ghana
Taught freshmen math major's introductory algebra and calculus.

Publications

Jazlynn, C. Wisener; Kaitlin, T. Patton,; **Johnson, K. Agbo**; and Charles, A. Mebi
Phenylthiolate-diironhexacarbonyl complexes: a comparative conceptual DFT and electrochemical study. *Transition Metal Chemistry*. 2016, 41, 339 – 345.

J A Goodwin, **J K Agbo**, J Zuczek, A Samuel... Electrochemical dioxygen reduction catalyzed by a (nitro) cobalt (perfluorophthalocyanine) complex and the possibility of a peroxy-nitro complex intermediate.
J. Porphyrins Phthalocyanines. 2015; **19**: 1185–1196

Johnson K. Agbo, Ramachandran Gnanasekaran and David M. Leitner; Communication Maps: Exploring Energy Transport through Protein and Water; *Israel Journal of Chemistry*. Vol. 54, Issue: 8-9 (2014), p. 1065 – 1073

Johnson K. Agbo, Yao Xu, Ping Zhang, John E. Straub and David M. Leitner; Vibrational energy flow across heme–cytochrome c and cytochrome c–water interfaces; *Theoretical Chemistry Accounts: Theory, Computation and Modeling*. Vol. 133 Issue: 7 (2014), p. 1504-10.

Ramachandran Gnanasekaran, **Johnson K. Agbo** and David M. Leitner; Communication maps computed for homodimeric hemoglobin: Computational study of water-mediated energy transport in proteins. *Journal of Chemical Physics*. **135**, 065103 (2011) Editor's choice in 2011.

Johnson K. Agbo, Amber Jaine and David M. Leitner; Quantum localization, dephasing and Vibrational energy flow in trans-formanilide (TFA)-H₂O complex. *Chemical Physics*. **374**, 111 (2010)

Johnson K. Agbo, David M. Leitner, Timothy S. Zwier, Evgeniy M. Myshakin and Kenneth D. Jordan; Quantum Energy flow and the kinetics of water shuttling between hydrogen bonding sites on trans-formanilide (TFA). *Journal of Chemical Physics*. **127**, 064315 (2007)

Johnson K. Agbo, David M. Leitner; Kinetics of Peptide Isomerization and Vibrational Energy Flow in Biological Molecules. Ph.D. Dissertation (2007)

Johnson K. Agbo, David M. Leitner, David A. Evans and David J. Wales; Influence of vibrational energy flow on isomerization of flexible molecule: Incorporating non-Rice-Ramsperger-Kassel-Marcus kinetics in the simulation of a dipeptide isomerization. *Journal of Chemical Physics* **123**, 124304 (2005)

Presentations

Comparative DFT study of 2-butenedioc acid and its Methyl substituted derivatives. Poster Presentation at Southeast Regional Meeting of the American Chemical Society (SERMACS-2022). San Juan, Puerto Rico. October 19 – 22, 2022.

Comparative DFT study on the metallocyclic ring size, stability, and global reactivity indexes of three phenanthrenedithiolato-diironhexacarbonyl complexes. Poster Presentation at the 254th Annual National Meeting and Exposition of the American Chemical Society. Washington, DC, (COMP # 181) Aug. 20 – 24, 2017.

Wave packet excitation, vibrational energy flow and communication between the globules of the homodimeric hemoglobin from *Scapharca inequalvis* Oral Presentation at the 45th Meeting and Exposition of the American Chemical Society. Midwest Chapter. Wichita. KS. Oct. 27 – 30, 2010

Vibrational Energy flow Within The Dimeric Hemoglobin *Scapharca inequalvis*. Poster Presentation at the 234th Annual National Meeting and Exposition of the American Chemical Society. Boston. MA. (PHYS # 0475) Aug. 19 – 23, 2007

Energy flow in *trans*-formanilide (TFA)-water complex and the Kinetics of water shuttling. Poster Presentation at the 232nd Annual National Meeting and Exposition of the American Chemical Society. San Francisco. CA. (PHYS # 433) Sept. 10 – 14, 2006

Conformational Isomerization Kinetics in a dipeptide: A non-RRKM approach. Poster Presentation at the 229th Annual National Meeting and Exposition of the American Chemical Society. San Diego. CA. (COMP # 198) March 13 – 17, 2005

Workshops

NSF-Sponsored Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS): **Computational Chemistry for Chemistry Educators.**
San Jose State University, San Jose, CA. June 14 – 20, 2015

NSF-Sponsored Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS): **Distance Learning and Hybrid Teaching in Chemistry Miniworkshop.**
Atlanta, GA. April 16 – April 19, 2015

NSF-Sponsored Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS): **Forensic Chemistry workshop.**
Williams College, Williamstown MA. June 12 – 17, 2012

Supper Computing Education Program Participant

SC11. Seattle WA. November 12 – 15, 2011
SC10 New Orleans LA, November 13 – 16, 2010

Telluride school of Theoretical Physical Chemistry.

Telluride, Colorado, July 2009

Live Photo Physics Workshop. Rochester, New York, June 2009

NSF-Sponsored Chemistry Collaborations, Workshops & Communities of Scholars (cCWCS). **Research-based Chemistry Laboratory Curriculum.**
Atlanta, GA, May 2009

Center for Workshops in chemical Sciences. Center for Authentic Science Practice in Education (CASPIE): **Research-based Chemistry Laboratory Curriculum: The CASPIE Model of Research.** University of Illinois at Chicago, June 2008

Skills

- . Scientific or technical programming
Good knowledge of FORTRAN 77
- . Experience in molecular dynamics software:
Amber, Moil, Charmm, Gaussian 09.

Professional Affiliations

American Chemical society (ACS)	2004 – present
American Association for the Advancement of Science (AAAS)	2006 – 2010