

## EDUCATION & PROFESSIONAL DEVELOPMENT

### **Ph.D. Materials Science & Engineering, GPA: 3.9**

*Dissertation Title: "Effects of plasma, temperature, and chemical reactions on low-dielectric films for semiconductor devices."*

*Toulouse Graduate School Doctoral Fellowship, 2007-2010*

*Academic Achievement Scholarship, 2007-2008*

UNIVERSITY OF NORTH TEXAS • Denton, TX • Dec 2010

### **M.S. Materials Physics, GPA: 3.4**

*Thesis Title: Investigating the Pyro-Optic Properties of Antimony Sulfo-Iodide (SbSI).*

*National Academic Affairs: The Chancellor's List, 2004-2005*

TEXAS STATE UNIVERSITY • San Marcos, TX • Dec 2006

### **B.S. Physics**

*Thesis Title: Detection of Ground Water Potential Zone Using the Electrical Resistivity Method.*

KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY • Kumasi-Ghana • Mar 2003

## CAREER PROGRESSION

### **Adjunct Faculty**

**Physics Department, Richland College • Dallas, TX**

2014-Present

- Teach Physics Courses and Labs
- Assists students in their learning process by utilizing all appropriate College resources, materials, facilities, and educational technologies available to complement the teaching and learning process.

### **Adjunct Faculty**

**Physics Department, Tarrant County College • Arlington, TX**

2014-Present

- Teach Physics Courses and Labs
- Assists students in their learning process by utilizing all appropriate College resources, materials, facilities, and educational technologies available to complement the teaching and learning process.

### **Acting Manager**

**Kofad Pharmaceutical Distributor • Kumasi, Ghana**

2011-2013

- Oversaw the operation performance from sales, marketing, supplies, and logistics.
- Developed & executed annual marketing plan.
- Effectively contributed to enhance product range to add more Value to the business.

### **Graduate Research Assistant**

**Materials Science and Engineering Department, University of North Texas • Denton, TX**

2007-2010

- Recovered plasma damaged low-dielectric constant ( $k$ ) SiOCH thin films employing supercritical carbon dioxide ( $SC-CO_2$ ) with different functionalization agents.
- Efficiently demonstrated the effect of temperature on repaired plasma damaged SiOCH low- $k$  thin films, as well as the effects of wet etchants on plasma damaged and recovered SiOCH thin films.
- Investigated surface modification and ultra violet (UV)-curing of SiOCH low- $k$  thin films.
- Utilized a variety of analytical instrumentation (metrology) such as Fourier Transform Infra-red (FTIR) Spectrometer, Grazing Angle Attenuated Total Reflectance (GATR)-FTIR, X-Ray Photoelectron Spectrometer (XPS), Variable Angle Spectroscopic Ellipsometer (VASE), Atomic Force Microscope (AFM), and Ramé-Hart Standard Goniometer to analyze and characterize thin films.

## Nano-Scholar Intern

Front End Processing Department, International SEMATECH • Austin, TX 2006-2007

- Characterized the physical and chemical properties of in-house silicon wafers using XPS, VASE, and GATR-FTIR.
- Developed and executed process for determining the removal of high-dielectric constant materials on Fin Field Effect Transistors (FinFETs) using XPS.
- Demonstrated the impact of RCA clean on hafnium based dielectrics thin films.

## Graduate Teaching Assistant

Department of Physics, Texas State University • San Marcos, TX 2004-2006

- Teach and Set-up laboratory instruments for experimental section of Physics courses (Heat and Waves, General Physics I and II, Electricity and Magnetism).
- Recommended modifications to improve experimental procedures in General Physics undergraduate laboratories for non-physics majors.

## Medical Physicist (National Service Personnel)

Radiotherapy and Nuclear Medicine Unit, Komfo Anokye Teaching Hospital • Kumasi, Ghana 2002-2003

- Efficiently handled issues related to quality control and quality assurance of the unit.
- Co-investigated predominant cancer that affects most women in Ghana over the last 30 years.

## AFFILIATIONS

National Society of Black Engineers (NSBE)  
Material Advantage  
Sigma Pi Sigma (National Physics Honor Society)

## PUBLICATIONS & PRESENTATIONS

### Publications

- E. Vinogradova, E. Osei-Yiadom, C.E. Smith, D.W. Mueller, R.F. Reidy, *Microelectronic Engineering* 86 (2009) 176–180 (*Effects of Plasmas on porous low dielectric constant CVD SiOCH films*)
- E. Osei-Yiadom, R. F. Reidy, Under Review (*Effects of plasma treatments on porous low-k CVD SiOCH films and its repair using supercritical CO<sub>2</sub>*)
- E. Osei-Yiadom, R. F. Reidy, Under Review (*Temperature effects on repaired plasma-damaged low-k SiOCH films*)

### Conference Proceedings

- E. Osei-Yiadom, Richard F. Reidy, ASME International Mechanical Engineering Congress and Exposition, November 2010 (*Poster Presentation, Temperature Effects on Repaired Plasma-damaged Low Dielectric SiOCH Films*)
- E. Osei-Yiadom, D. W. Mueller, R. F. Reidy, 6<sup>th</sup> International Surface Cleaning Workshop, November 2008 (*Effects of Dry and Wet Cleans on Porous CVD low-k films*)
- R.F. Reidy, E. Vinogradova, E. Osei-Yiadom, C.E. Smith, D.W. Mueller, Surface Preparation and Cleaning Conference, Austin, TX, April 1-2, 2008 (*Effects of Oxidizing and Reducing Plasmas Damage on Porous Low-k Film Surface Properties*)
- R.F. Reidy, N. Martinez, E. Osei-Yiadom, M. Romanes, D.W. Mueller, Casey Smith, Surface Preparation and Cleaning Conference, April 2008 (*The Interaction of Roughness and Chemical Functionalization of Thermal Oxide and TEOS layers on the Wetting of Aqueous Cleans*)
- Kelly Freeman, E. Osei-Yiadom, Muhammad Hussain, Meeting of The American Physical Society (Texas Section), March 2007 (*Impact of RCA clean on Hafnium Dielectrics*)