

Curriculum Vitae

Dr. Anderson Sunda-Meya

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Married - US Citizen

Education

Ph.D. in Physics, 2007 North Carolina State University, Raleigh, NC.
Dissertation: "Shape and stability of epitaxial nanostructures evolving under growth or annealing"
Advisor: Dr. Robert J. Nemanich

B.S. in Physics, 2001 North Carolina Central University, Durham, NC.
Summa cum laude, with Honors
Thesis: "Polarimeter for High Energy Photons"

Laurea (equiv. M.A.) in Philosophy of Science, 1993 Pontificia Università Gregoriana, Rome, Italy.
Thesis: "Le langage Ideographique de Gottlob Frege"

Certificate of Proficiency in German, 1991 Goethe-Institut, Rome, Italy.

Diploma in German, 1989 Universität Innsbruck, Innsbruck, Austria.
Intensive Summer Course

B.A. in Theology, 1991 Pontificia Università Gregoriana, Rome, Italy.

Licence Diploma in Philosophy and Letters, 1988 Université de Lubumbashi, DR Congo.
Thesis: "Le Langage Ideographique de Gottlob Frege"

B.A. in Philosophy, 1984 Institut de Philosophie St Pierre Canisius, Kinshasa, DR Congo.
Thesis: "Le Langage du Visage: Une Lecture d'Emmanuel Levinas"

Awards

- Faculty Norman C. Francis Teaching Award, 2013.
- Faculty Norman C. Francis Service Award, 2011.

Proposal Grants

- *Faculty Start-Up Program in Materials at Xavier University of Louisiana*, PI, NAVY, 2015 – 2016, \$100,000.
- *Collaborative Standard: Comparison of Communications across Campus Cultures (4C Project): Toward Evidence-based Customization of Learning Experiences for CCE STEM*, PI, National Science Foundation (NSF), 2016 – 2020, \$110,375.
- *Research & Engineering Apprenticeship Program (REAP)*, PI, US Army, 07/01/2015 – 08/31/2015, \$3,000.
- *TETRA-II : An Experiment to Study Terrestrial Gamma Flashes and the Role of Energetic Particle Acceleration in Lightning and Severe Weather Events*, co-PI, NASA EPSCoR / BOR, 8/2015-7/2018, \$350,000. (PI: Mike Cherry, LSU)
- *Terrestrial Gamma Flashes at Ground Level*, PI, National Science Foundation (NSF), 2015 – 2017, \$250,001.
- National Aeronautics and Space Agency (NASA), New Orleans Regional Collaborative (NORC) for STEM Retention, 2013-2015, \$500,000.

- Center For Intercultural and International Programs (CIIP), Xavier Internationalizes Curriculum (XIC) grant, “*Global Engineering Outreach*”, Summer 2011, \$31,000.
- Louisiana Space Consortium (NASA-LaSPACE), “*Xavier Space Grant Research Scholars*”, 2010-2011, \$27,000.
- Center for Undergraduate Research (CUR), “*Room Temperature Growth of Silicon Nanowires by Chemical Electrodeposition*”, 2010-2011, \$10,000.
- U.S. Nuclear Regulatory Commission (NRC), *NRC Science Scholars: Education, Scholarship, Mentoring, Service Learning*, 2010-2013, \$270,000.
- NSF – Xavier-New York University Partnership for Research and Education in Materials (PREM), “*Nanoscale Image Systems*”. Research project: “*Probing the Structure and Mechanical Properties of Cells*”, Senior Scientist, 2009-2014, \$320,000.
- New York University Materials Research Science and Engineering Center (NYU-MRSEC) – Faculty and Student Team Fellowship, Summer 2009, \$50,000.
- DoE/Oak Ridge National Laboratory (ORNL) – Faculty and Student Team (FaST) Summer Fellowship, Summer 2008, \$25,000.
- MIE Equipment Grant, 2007-2008, \$20,000.
- CUR-Circle Grant, “*What are the imaging capabilities at Xavier? Characterization of Particle Size Distribution and Morphology of Custom Synthesized Polymeric Nanomaterials by Scanning Electron Microscopy and Atomic Force Microscopic Probe*”, 2007-2008, \$8,000.
- Mellon Foundation Research Grant, “*Green energy: hydrogen from water and aluminum. Production, modeling and simulation*”, 2007-2008, \$7,500.
- CUR-MIE Grant, “*Biomaterial synthesis and characterization: silver nanoparticles from Capsicum Annum L. extract*”, 2007-2008, \$10,000.
- Most Outstanding Senior, North Carolina Central University, 2001.
- MARC U*StAR (Minority Access to Research Careers Undergraduate Research Training Program) fellow, North Carolina Central University, 1999-2001.
- Renewable Energy Academic Partnership – National Renewable Energy Laboratory program fellow, 1999-2001.

Current Appointments

Director January 2014 – Date	Louisiana Engineering Advancement Program (LEAP), Xavier University of Louisiana
Associate Chair August 2013 – Date	Division of Mathematical & Physical Sciences, Physics Department, Xavier University of Louisiana
Head August 2013 – Date	Physics Department, Xavier University of Louisiana
Associate Professor August 2013 – Date	Physics Department, Xavier University of Louisiana
Acting Director August 2013 – Date	Dual Degree Engineering Program, Xavier University of Louisiana
Member August 2008 – Date	Advisory Committee, Sarah T. Reed High School, New Orleans, LA
Member September 2009 – Date	Education Advisory Committee, New York University Materials Research Science and Engineering Center (NYU MRSEC)

Appointment History

Assistant Professor Aug 2007 – 2013	Physics Department, Xavier University of Louisiana
Associate Director April 2009 – Aug 2011	Dual Degree Engineering Program, Xavier University of Louisiana
Associate Director April 2009 – Aug 2011	Louisiana Engineering Advancement Program (LEAP), Xavier University of Louisiana
Teaching Assistant Aug 2001 – May 2004 <i>Taught Honors Physics Lab</i>	North Carolina State University, Raleigh, NC
Teacher Sept 2001 – July 2003 <i>Taught Physics, Chemistry, Philosophy and Geology</i>	Ecole Française de Raleigh (French School of Raleigh), Raleigh, NC
Teacher Oct 1991 – July 1992 <i>Taught Philosophy and Religion</i>	Collège Boboto, Kinshasa, Democratic Republic of Congo

Courses Taught

Upper Level Courses

Special Topic: Introduction to Biophysics	PHYS (ENGR) 4530
Thermodynamics	PHYS (ENGR) 3040
Physics Projects	PHYS 4200, 4210
Analytical Methods for Physics and Engineering	PHYS (ENGR) 2630
Physics and Engineering Seminar	PHYS 3510S

Calculus-based Introductory Level Courses for Physics and Engineering Majors

General Physics	PHYS 1121, 2111, 2121
Physics Lab (NC State University)	PHYS 205, 207

Algebra-based Introductory Courses

Lab courses for algebra-based sequence	PHYS 2010, 2020
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General Transitional Courses

Freshman Seminar	FRSM 1000, 1100
Introduction to Engineering	ENGR 1000, 1100

Publications

Peer-reviewed

1. Defi Jr. Jubgang Fandio, Alain M. Dikande and **A. Sunda-Meya**, Elliptic solitons in optical fiber media, *Physical Review A* **92**, 053850 (2015).
2. M.C. Zeman, R.J. Nemanich, and **A. Sunda-Meya**, Dynamics of dysprosium silicide nanostructures on Si(001) and (111) surfaces, *Journal of Materials Science* **49**, 1812-1823 (2014).
3. B.J. Krishnatreya, A. Colen-Landy, P. Hasebe, B.A. Bell, J.R. Jones, **A. Sunda-Meya**, and D.G. Grier, Measuring Boltzmann's constant through holographic video microscopy of a single colloidal sphere, *American Journal of Physics* **82**, 23-31 (2014).

4. M. Himmerlich, **A. Sunda-Meya**, W.-C Yang, J.A. Schaefer, and Robert J. Nemanich, Growth dynamics of Ge islands on Si(001) and Si(113) surfaces investigated by photoelectron emission microscopy (*submitted*).
5. **A. Sunda-Meya**, David J. Smith, and Robert J. Nemanich, Shape transition and migration of TiSi₂ nanostructures embedded in a Si Matrix, *Journal of Applied Physics* **110**, 094304 (2011).
6. Y.Z. Hamad, J.T. Greene, V. Shields, M. Pratcher, S. Gardiner, E. Waddell, S. Shreeves, **A. Sunda-Meya**, and N. Phambu, Spectroscopic and potentiometric studies of the interaction of adenine with some trivalent metal ions, *Journal of Coordination Chemistry* **63**, 284-295 (2010).
7. N. Phambu, **A. Sunda-Meya**, E.B. Djantou, E.N. Phambu, P. Kita-Phambu, L.M. Anovitz, Direct detection of residual cyanide in cassava using spectroscopic techniques. *Journal of Agricultural and Food Chemistry* **5**, 10135-10140 (2007).
8. D. Gracin, V. Borjanovic, B. Vlahovic, **A. Sunda Meya**, T. M. Patterson, J. M. Dutta, S. Hauger, I. Pinayev, M. E. Ware, D. Alexson, R. J. Nemanich and B. von Roedern, "Selective Bond Breaking in Amorphous Hydrogenated Silicon by Using Duke FEL", *Nuclear Instruments and Methods* **475**, 635 (2001).
9. **A. Sunda Meya**, D. Gracin, B. Vlahovic, J.M. Dutta, and R.J. Nemanich, "CW Ar-Ion Laser Crystallization of a-Si:H Thin Films" in *Material Research Society Symposium Proceedings*, Vol. **664**, 2001.

Other publications

1. **A. Sunda Meya**, "Si Marx vous étiez raconté, cent ans après sa mort" in *Raison Ardente* 17, 89 (1984).
2. **A. Sunda Meya**, "J.F. Ross, Philosophical Theology" (Book review) in *Raison Ardente* 18, 112 (1984).
3. **A. Sunda Meya**, "Bibliographie sélective de la philosophie africaine (1978-1982) (Part 1)" in *Raison Ardente* 19, 134 (1984).
4. **A. Sunda Meya**, "Bibliographie sélective de la philosophie africaine (1978-1982) (Part 2)" in *Raison Ardente* 20, 117 (1985).

Presentations

Invited Talks

1. Anderson Sunda-Meya, *The Dual Degree Approach: Improving the Success of Minority Physicists/Engineers*, American Association of Physics Teachers (AAPT) Winter Meeting, New Orleans, LA, January 9-12, 2016.
2. Anderson Sunda-Meya, *Surface science analysis: biophysical studies of peptide-lipid interactions in model membranes*, Physics Department, University of New Orleans, New Orleans, LA, November 18, 2015.
3. Anderson Sunda-Meya, *Synthesis and characterization of MoS₂ nanostructures using pulsed-laser deposition system*, 10th IEEE Nanotechnology Materials and Devices Conference (NMDC 2015), Anchorage, AK, September 13-16, 2015.
4. Anderson Sunda-Meya, *Lending a Helping Hand: Making Learning Possible in Resource-Poor Schools*, American Association of Physics Teachers (AAPT) Winter Meeting, New Orleans, LA, January 5-9, 2013.
5. Anderson Sunda-Meya, *Cultural Perspectives on Teacher Education*, 2012 Physics Teacher Education Coalition Conference, Ontario, CA, February 3-4, 2012.
6. Anderson Sunda-Meya, *Investigation of Biofilms using Microrheology*, Department of Chemistry and Biochemistry, University of Southern Mississippi, Hattiesburg, MS, September 10, 2010.
7. Anderson Sunda-Meya, *Minorities Road to Graduate School: The Xavier Experience*, 77th Annual Meeting of the Southeastern Section of the American Physical Society (SESAPS), Baton Rouge, LA, October 20-23, 2010.

Posters & Oral Presentations

1. Nsoki Phambu, **Anderson Sunda-Meya**, *Aggregation properties of a short antimicrobial peptide in the presence of model membranes*, 251st ACS National Meeting and Exposition, March 13-17, 2015, San Diego, CA.
2. Amjad Alwadai, Nsoki Phambu, **Anderson Sunda-Meya**, *Atomic force microscopy (AFM) and Raman spectroscopy of a binary lipid mixture containing cardiolipin*, 251st ACS National Meeting and Exposition, March 13-17, 2015, San Diego, CA.

3. **Anderson Sunda-Meya** and Nsoki Phambu, *Comparative atomic force microscopy (AFM) and field emission scanning electron microscopy (FE-SEM) studies of mixed phospholipid monolayers*, The International Chemical Congress of Pacific Basin Societies (PACIFICHEM™), December 15-20, 2015, Honolulu, HI.
4. Areej Alshammari, **Anderson Sunda-Meya**, and Nsoki Phambu, *Effects of an antimicrobial peptide on the biophysical properties of model membranes*, The International Chemical Congress of Pacific Basin Societies (PACIFICHEM™), December 15-20, 2015, Honolulu, HI.
5. Bashiyar Almarwani, **Anderson Sunda-Meya**, and Nsoki Phambu, *Peptide-membrane interaction studies applied to Combi-2: effect of metal ions*, The International Chemical Congress of Pacific Basin Societies (PACIFICHEM™), December 15-20, 2015, Honolulu, HI.
6. Nsoki Phambu and **Anderson Sunda-Meya**, *Raman spectroscopy and imaging of a ternary lipid mixture containing sphingomyelin*, 249th ACS National Meeting and Exposition, March 22-26, 2015, Denver, CO.
7. Bashiyar Almarwani, **Anderson Sunda-Meya**, and Nsoki Phambu, *Investigating the structural impact of the antimicrobial peptide combi-2 in model membranes*, 249th ACS National Meeting and Exposition, March 22-26, 2015, Denver, CO.
8. Anaif Alhewaitey, **Anderson Sunda-Meya**, and Nsoki Phambu, *Interaction of the antimicrobial peptide aurein 1.2 with lipid raft model membranes*, 249th ACS National Meeting and Exposition, March 22-26, 2015, Denver, CO.
9. Angela Stone, **Anderson Sunda-Meya**, and Nsoki Phambu, *Interaction between the antimicrobial peptide Leucocin and model membranes*, 249th ACS National Meeting and Exposition, March 22-26, 2015, Denver, CO.
10. Amira Muhsen, Nsoki Phambu and **Anderson Sunda-Meya**, *Interactions Between a Short Antimicrobial Peptide and Model Membranes: Effect of Zinc Ion*, 2015 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM). February 19-21, 2015, Washington, D.C.
11. Jacqueline Baidoo, Nsoki Phambu and **Anderson Sunda-Meya**, *Spectroscopic Biosensor Based on Peptide Aluminum Complex for Bacteria Detection*, 2015 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM). February 19-21, 2015, Washington, D.C.
12. Shannon Mitchell, Nsoki Phambu and **Anderson Sunda-Meya**, *Investigating Cholesterol-lipid Interactions in the presence of zinc ions using AFM and SERS*, 2015 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM). February 19-21, 2015, Washington, D.C.
- 13.
14. Bashiyar Almarwani, **Anderson Sunda-Meya**, and Nsoki Phambu, *Effect of combi-2 on the structure and phase transitions of binary membrane systems: A spectroscopic study*, 250th ACS National Meeting and Exposition, August 16-20, 2015, Boston, MA.
15. Nujud Andijani, **Anderson Sunda-Meya**, and Phambu Nsoki, *Effect of cholesterol on the interaction between the antimicrobial peptide jelleine-I and binary lipid mixtures*, 250th ACS National Meeting and Exposition, August 16-20, 2015, Boston, MA.
16. Angela Stone, **Anderson Sunda-Meya**, and Nsoki Phambu, *Interactions of photosystem I with anionic peptides: A spectroscopic study*, 250th ACS National Meeting and Exposition, August 16-20, 2015, Boston, MA.
17. Areej Alshammari, **Anderson Sunda-Meya**, and Nsoki Phambu, *Conformational changes in feleucin induced by sphingomyelin-containing model membranes*, 250th ACS National Meeting and Exposition, August 16-20, 2015, Boston, MA.
18. Amira Muhsen, Alejandra Hasbun, Nsoki Phambu, **Anderson Sunda-Meya**, *Biophysical studies of the supramolecular complex between β -cyclodextrin and an antimicrobial peptide*, 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.
19. Breanna Bell, Thuan Deng, **Anderson Sunda-Meya**, Phambu Nsoki, *Implementing the use of a short antimicrobial peptide in biosensing platforms*, 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.

20. Angela Stone, Anderson Sunda-Meya, Nsoki Phambu, Conformational changes in peptide induced by photosystem I: A spectroscopic study, 248th ACS National Meeting and Exposition, August 10-14, 2014, San Francisco, CA.
21. Nsoki Phambu, Amira Muhsen, Jacqueline Baidoo, Anderson Sunda-Meya, Investigating peptide-lipid interactions in model membranes by SERS and AFM, 248th ACS National Meeting and Exposition, August 10-14, 2014, San Francisco, CA.
22. Alejandra I Hasbun, Amira Muhsen, Jacqueline Baidoo, Anderson Sunda-Meya, Nsoki Phambu, Effects of cyanophenylalanine modified indolicidin on biological membranes: A biophysical study, 248th ACS National Meeting and Exposition, August 10-14, 2014, San Francisco, CA.
- 23.
24. Chloe Davidson, Andrianna Taylor, Anderson Sunda-Meya, and Nsoki Phambu, Structural characterization of yellow and purple yams using infrared and Raman spectroscopy, 243rd American Chemical Society (ACS) National Meeting, San Diego, CA, March 25-29, 2012.
25. Jasmine Jones, Kamirah Demouchet, Fook C. Cheong, Simone Duarte, David Grier, and Anderson Sunda-Meya, *Understanding the Properties of Biofilm via Microrheology*, 241st American Chemical Society (ACS) National Meeting, Anaheim, CA, March 27-31, 2011.
26. D. Smith, M. Jones, M. Castro, R.M. Murata, F.C. Cheong, A. Sunda-Meya, D. Grier, and S. Duarte, *Interactions of Ions with Polysaccharides using Microrheology*, International Association for Dental Research (IADR), Meeting, San Diego, CA, March 16-19, 2011.
27. Anderson Sunda-Meya, Jasmine Jones, Kamirah Demouchet, Fook C. Cheong, Simone Duarte, and David Grier, *Interaction of Alcohols and Ions with Biofilms Using Microrheology*, Materials Research Society (MRS) Meeting, San Francisco, CA, April 25-29, 2011.
28. Anderson Sunda-Meya, Jasna Brujic, Jonathan Corley, Desiree' Smith, and Herbert Lannon, *Kinetics of Single Ubiquitin Molecule Unfolding Under A Stretching Force*, 77th Annual Meeting of the Southeastern Section of the American Physical Society (SESAPS), Baton Rouge, LA, October 20-23, 2010.
29. Robert J Nemanich, Matthew C. Zeman, and Anderson Sunda-Meya, *Silicide Nanostructure Evolution during Coarsening Processes*, The Minerals, Metals & Materials Society (TMS) Meeting, New Orleans, LA, March 9 – 13, 2008.
30. Felicia Marie Magnaterra, Emanuel A. Waddell, Stephen Shreeves, Anderson Sunda-Meya, Nsoki Phambu, *Spectroscopic studies of citrulline and its metal complexes in aqueous solutions*, 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008.
31. Christyn Thibodeaux, Desiree Smith, Nsoki Phambu, and Anderson Sunda-Meya, *Green and low-cost hydrogen production from aluminum and water*, 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008.
32. Jessica Fuselier, Michaela Allen, Nsoki Phambu, and Anderson Sunda-Meya, *Biosynthesis of silver nanoparticles using Capsicum annum L.*, 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008.
33. American Physical Society (APS) March Meeting, Denver, CO, March 5-9, 2007
34. Material Research Society (MRS) Fall Meeting, Boston, MA, December Nov. 26 - 30, 2007
35. Material Research Society (MRS) Fall Meeting, Boston, MA, December Nov. 29 - Dec. 02, 2004
36. Material Research Society (MRS) Fall Meeting, Boston, MA, December 1 – 5, 2003
37. Gordon Research Conference on "Crystal Growth", Mount Holyoke College, South Hadley, MA, June 22-27, 2003
38. American Physical Society (APS) March Meeting, Austin, TX, March 3-7, 2003.
39. Renewable Energy Academic Partnership (REAP) Conference, Houston, TX, August 8-11, 2001
40. Material Research Society (MRS) Spring Meeting, San Francisco, CA, April 16-20, 2001
41. National Minority Research Symposium, Washington, DC, November 8-11, 2000
42. Renewable Energy Academic Partnership (REAP) Conference, Denver, CO, August 9-11, 2000
43. Fourteenth National Conference on Undergraduate Research, Missoula, Montana, April 27-29, 2000
44. NC-LAMP Undergraduate Research Conference, Winston-Salem, NC, April 14, 2000
45. Biomedical/Biotechnology Research Institute Symposium, NCCU, Durham, NC, November 1999

- 46. National Minority Research Symposium, Phoenix, AZ, November 10-13, 1999
- 47. Renewable Energy Academic Partnership (REAP) Conference, Baton-Rouge, LA, August 8-12, 1999.

Doctoral Advisory Committee

- Member of the doctoral advisory committee for Louisiana State University graduate student, Desiree Czapski, in the chemistry department (2012 – present).

NSF Panel Review

- Graduate Research Fellowship Program (GRFP)
- Research Experience for Undergraduate Program (REU).

Journal Reviewer

- Paper reviewer for the journal "Food Chemistry".

Editorial Board Member

- "Journal of Biomedical and Bioengineering"
- "Nanotechnology and Nanoscience" Journal

Languages

- French and Lingala – native languages
- English, Italian, Kikongo, and Swahili – speak fluently and read/write with high proficiency
- Spanish, Portuguese, and German – speak, read, and write with basic competence.

Memberships

- American Physical Society (APS)
- Material Research Society (MRS)
- American Chemical Society (ACS)
- National Society of Black Physicists (NSBP)
- The Philosophy of Science Association (PSA)