TEXAS STATE VITA: Wilhelmus J. Geerts
Department of Physics
Texas State University at San Marcos
512-245-1821/wjgeerts@txstate.edu

Magnetic

I. Academic/Professional Background

A. Name: Geerts, Wilhelmus J. Title: Dr. Ir.

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
Ph.D.	1992	University of Twente The Netherlands	physics	Magnetization Distribution at the surface of Co-Cr films: Magneto-Optical, Chemical, and Structural characterization.
M.Sc.	1987	Eindhoven University of Technology, The Netherlands	EE	On Design, Test, and Data-processing aspects of Defect-monitors.
Propaedeutic	1984	Eindhoven University of Technology, The Netherlands	EE	

C. University Experience

Position	*University*	*Dates*
Professor	Texas State University at San Marcos	Sept. 2021 - present
Associate Professor	Texas State University at San Marcos, Texas	Sept. 2003 - present
Assistant Professor	Texas State University at San Marcos, Texas	Sept. 1997-May 2003

D. Relevant Professional Experience

Position	*Entity*	*Dates*
Sabbatical	Los Alamos National Laboratory	June 2008 – May 2009
Summer Sabbatical	University of Twente, Enschede, The Netherlands	Jun. 2003-Aug. 2003
Postdoctoral Research Associate	University of Florida, National High Magnetic Field Laboratory, Gainesville, Florida	April 1995-Aug. 1997
STA fellow	Electrotechnical Laboratory, Tsukuba, Japan.	Sept. 1993 – March 1995
Invited Researcher	National Institute for Advanced Interdisciplinary Research, Tsukuba,	Jan. 1993-March 1993

	Japan.	
Product Development Engineer	Matam Machine Incorporation, Bladel, The Netherlands.	Aug. 1992 - Dec. 1992 April 1993 – Aug. 1993
Research Assistant	Philips Research Laboratories, Eindhoven, The Netherlands.	April 1987 – Oct. 1987

E. Other Professional Credentials (licensure, certification, etc.)

Hold a Dutch engineering title in Electrical Engineering: Ir.

II. TEACHING

A. Teaching Honors and Awards:

1) Favorite Professor, Alfred H. Nolle Chapter of the Alpha Chi National College Honor Society, Spring-2016.
2) Favorite Professor, Alfred H. Nolle Chapter of the Alpha Chi National College Honor Society, Fall-2015.
3) Favorite Professor, Alfred H. Nolle Chapter of the Alpha Chi National College Honor Society, Fall-2013.
4) Most inspiring Physics Professor, Society of Physics Student Award 2006-2007.
5) TxSTate College of Science Bonus Award for developing an electronic homework Web site for General Physics 1 and 2, based on a Giancoli Web site. Implemented auto-grading, random shuffling of multiple-choice questions, coupling of initial conditions to social security numbers of students, security precautions to detect academic dishonesty, for a Web site of 106 Mbyte (472 pages). The Web site was used by approximately 600 students until it became obsolete by the introduction of Web-Assign. Aug. 1999.

B. Courses Taught:

At Texas State University:

1. Elementary Physics 1 (PHYS1310)
2. Elementary Physics 2 (PHYS1320)
3. Algebra and Trigonometry based General Physics 1 (PHYS1410)
4. Algebra and Trigonometry based General Physics 2 (PHYS1420)
5. Mechanics (PHYS1430, with LAs and tutorials)
6. Electricity and Magnetism (PHYS2425, with LAs and tutorials)
7. Waves and Modern Physics (PHYS2435)
8. Applied Electronics (PHYS3416): Lecture and Lab Class
9. Applied Optics (PHYS3417): Lecture and Lab Class
10. Modern Physics 1 (PHYS3312)
11. Modern Physics 2 (PHYS4311)
12. Condensed Matter Physics for undergraduates (PHYS4311)
13. Electromagnetic Field Theory 1 (PHYS4310, with tutorials)
14. Electromagnetic Field Theory 2 (PHYS4315, with tutorials)
15. Solid State Physics (PHYS5420)
16. Advanced Electronics (PHYS5326): Lecture and Lab Class
17. Magnetic Materials and Measurement Methods, Magnetism in Condensed Matter (PHYS5370)

18. The Physics of Solar Cells (PHYS5370/PHYS4320)
19. Statistical Mechanics (PHYS5413)
20. Electrodynamics (PHYS5331)
21. Individual spec. topics course for graduate students: Fundamentals of Research (PHYS5395)
22. Individual spec. topics course for undergraduate students: Independent Study (PHYS4321)

At University of Twente, The Netherlands:

1.TA Measurement Systems laboratory
2.Recitation sessions for Electricity and Magnetism

C. Graduate Theses/Dissertations or Exit Committees):

Chair or co-chair Thesis Committee (25):

Patrick Holland, Charlie Watts, Brian Donehew, Claude Garrett, Jett Hendrix, Joel Dunn, Chris O'Brien, Elaine Tennant, Chris Lohn, Jonathan Garrett, Amanda Gregory, Nelson Simpson, Javad Gatabi, Maclyn Compton, Yubo Cui, Fidele Twagirayezu, Ahad Talukder, Geoffrey Miller (Mathematics), Shankar Acharya, Binod DC, James Nick Talbert, Kolton Dieckow, Lauren Henderson, Selena Rose Najar, Selena Anderson.

Member Thesis Committee (45):

Shannon Fritz, Gabriel Monreal (Chemistry), Kevin Radican, Nelson White, Heather Cain, Anita Acevedo, Dana Larison, Casey Smith, James McDonald, Eric Osei-Yadom, Martin Hodo, Benedict Anyamesem-Mensah, Matthew McDougle, David Karhi (CS), Robert Kilbourn, Sagar Ghimire (Technology), Gabriel Arellano, Gregory Hodges, Patrick Ferguson, Daniel Moody, Jason Williams, Dominic Chiroro, Chad Waxler, John Petersen, Rye Johnson, Rico Garcia, Hanu Arava, Eric Welch, Liz Tang Xi, Roberto Lopez, Dean Koehne, Joseph Sadler, K.C. Anupam, Andres de la Garza, Samuel Cantrell, Nischal Khakurel, Maria Camila Belduque Correa (Engineering), Ricardo Ramirez (Engineering), Drew Amyx, Sterling Hcrnr, Leo Rodriguez, Mitchell Ford, Gabriel Mestas, Jonathan Sims, Mandesh Khadka (Manufacturing Engineering).

Chair or co-chair Dissertation Committee (3):

Tanjina Ahmed (MSEC), Nischal Khakurel (MSEC), Leo Rodriguez (MSEC).

Member Dissertation Committee (11):

Javad Gatabi (MSEC), Kyle Smith (UTSA), Susmita Ghose (MSEC), John Petersen (MSEC), Mehedhi Hasan (MSEC), Dalim Mia (MSEC), Mohammad Shamim Reza (MSEC), Ahad Talukder (MSEC), Chandan Howlader (MSEC), Binod D.C.(MSEC), Oluwasola Arigbabowo (MSEC).

Member Examination Committee (5):

Wayne Lewis, Luke Nai Chang (Technology), Jenny Mount, Russell Kendall, Ryan Laughin.

Independent Studies and Fundamentals of Research Projects done in my lab at Texas State (99):

Undergraduate students underlined, graduate students bold, others cursive:

Brandon Dillard, **Kyle Smith,** Clifford Thompson, Clint Bordelon, **Justin Frasier**, **Cythia Montgomery**, **Bill McKenna**, Matthew McDougle, Joseph Sadler, Sonny Garcia, Dennis Jordan, Chris O'Brien, **Hector Valdez**, Wendy Avilla, Garrett McSpadden, Rudy Holz, Brian Johnson, Hanu Arava, Alan Woodall, Amanda Gregory, Clayton Moore, Kyle Smith, Conrad Newton, *Daniel Palmer (high school students, CS)*, **Patrick Read (CS)**, David Delgado, Jacob Grimes, Brenda Wilson (BIO), Chris Brown, Bobby Duran, *Dustin Ragan (Trinity University)*, *Nazul Rivera (San Antonio Community College)*, Michael Robinson (EE), Bryant Aaron (CS), James Breuleux (EE), **Yubo Cui**, Daniel Fenter, Christie Weidner, Philip Smith, **Wayne Lewis**, *Valery Cuming (high school teacher)*, *Ena Bichsel (high school teacher)*, *Andrew Schuetze (high school teacher)*, Harsha Abeywickrema (CS), Brice Williams, **Ryan Laughin**, Elizabeth Leblanc, *Hans Willem ten Brinke (University of Twente)*, *Vincent Sombroek (University of Twente)*, **Javad Gatabi**, **Fidele Twaqirayezu,** Martin Hodo, *Archana Dubey*, Noel Gamez,

Shankar Acharya, Chandler Hutton, Joshua Thompson, Leo Escandon, **Ahad Talukder**, Ricky Scott, James Shook, David Torres, Armando Callegos (Electrical Engineering), Darren Miller, Cole Stevenson, Darrell Adams (Dripping Springs High School), Jose Mayorga (Bowie High School), Michael Measom (Southwestern University, Georgetown), Aaron Medina (Physics), Sudarshan Luitel, Samuel Kimmel (Chemistry), **Shankar Acharya (Physics)**, Brian Collier (physics), *Maria Chappell (Dripping Springs High school*), *Mayuko Stauffeneger (Alamo Community College, mechanical engineering)*, Rigoberto Mayorga-Luna (Physics), Aaron Medina (Physics), Andres Oliva (EE), **Binod D.C. (Physics)**, Anival Ayala (Physics), Kolton Dieckow (Physics), **Steven Chapman (Physics)**, **James Dobbins (Physics), Amanda Gregory (MSEC),** Selena Rose Najar (Physics), Sam Zamora (Physics), Salomon Gallegos (Physics), Clint Bold (Physics), Chandler Hutton (Physics), *Joselyn Lesikar (high school San Marcos)*, *Sarah Beth Ragan (Dripping Springs high school)*, **Chandan Howlader (MSEC), Lauren Henderson (Phy**sics), **Ganesh Aryal (Physics),** Danny Luna (Physics), Jesse Lopez (Physics), *Chris Selsor (TAMU, REU)*, Marco Baca (Manufacturing Engineering), Sujan Pyakurel (Physics), Arjun Sapkota (Physics).

D. Courses Prepared and Curriculum Development:

1. Rewrite PHYS2425 lab manual (together with Nelson Koeck and Luisa Scolfaro). Synchronized lab with lecture course by the introduction of two new labs and the fusion of two old lab assignments. Furthermore, reformatted the manual and made modification to the other lab assignments using the feedback provided by Nelson and previous lab instructors, summer 2011. Gathered additional feedback from lab instructors in the Fall of 2011 and made additional modification in December 2011 and 2012.
2. Applied Optics (PHYS3417): No lab-component did exist for the class. Over the course of 2006 -2012, I designed 10 lab-experiments for this course. A preliminary lab manual has been written for the course and posted on the internet. The department of Physics and Dr. Covington provided financial support for an LCD modulator that we use in this lab.
3. The Physics of Solar Cells (PHYS5370/PHYS4320): Chalk-board course on device-physics based on the following two texts: (1) Applied Photovoltaics (Wenham et al.); (b) The Physics of Solar Cells (Jenny Nelson), Spring 2010.
4. Waves and Heat (PHYS2435): In 2007 I obtained funding via the TxState ACC-program to update the existing computers and buy new interfaces. I updated the lab-manual to reflect the equipment changes and looked for new software to replace the Fourier program that no longer runs under Windows XP.
5. Applied Electronics (PHYS3416): This course had been taught more than two decades as PHYS3316. I changed the book several times but kept on having evaluation comments on the poor match of course and laboratory. In the summer of 2004, I designed eight new laboratory experiments and wrote a complete new lab manual. One of our graduate students, Mike Ryan, tested all labs in Summer 2, 2004. In the Fall of 2004, we changed the course we offered the new course as PHYS3416. Since then we have been debugging and extending the lab manual. In 2005 I obtained funding via the TxState ACC-program to update the computers and extend the number of workstations to 10.
6. Magnetic Materials and Measurement Methods (PHYS5370): a discussion of the properties of magnetic materials and how they are applied in products. Significant course material was developed including a series of PowerPoint presentations. Introduced at TxState in Spring 2001, Fall 2020.
7. Advanced Electronics (PHYS5326): a unique interdisciplinary lab class that introduces students to a wide variety of electronic equipment, including a semiconductor parameter analyzer, simulation software, a programmable logic circuit, an impedance analyzer, a

spreading resistance measurement system, a cycled refrigerator system for temperature dependent transport measurements, and a mercury probe. The course emphasizes teamwork, Introduced at TxState in Fall 2000.

E. Funded External Teaching Grants and Contracts:

1. Collaborator on the Smaller Learning and Communities Grant, San Marcos Consolidated ISD, $48,000, U.S. Department of Education, 2000-2003.
   The responsibilities for the internship parts of the grant were transferred to the SMTEI-program of Joe Koke and Dana Garcia (co-PI).
2. "Creation of an Applied Master's Degree Program in Materials Physics", NSF-DMR Grant, $352,000, (co-PI together with Heather Galloway and Carlos Gutierrez), 2000-2003.

F. Submitted, but not Funded, External Teaching Grants and Contracts:

Available upon request.

G. Funded Internal Teaching Grants and Contracts:

1. "Computers for PHYS 1430 and PHYS 2425 teaching labs", ACC Computer grant (student computing resources): $18,640.- (together with Dave Donnelly), 2014.
2. "Computers for Physics classroom RFM3223 and the Physics Advanced Student Lounge RFM3222 in support of the Physics curriculum", ACC computer grant (student computing resources): $17,949.20 (together with Greg Spencer, Eleanor Close), 2013.
3. "Computational tools in support of the undergraduate and graduate physics programs", partially funded via Dr Milton Nielsen's office" ($7,000 for Comsol Multiphysics classroom license) (together with Edwin Piner and Greg Spencer), 2012.
4. "Upgrade of the Heat-Optics-Modern Physics Teaching Lab" (PI together with Carl Ventrice), $17,259, ACC-2007, computer replacement program TxState.
5. "Expansion of the Physics Computer Simulation Laboratory" (co-PI together with Greg Spencer), ACC-2006, computer replacement program TxState.
6. "Workstations for the Electronics Teaching Lab" (PI together with Greg Spencer), $19,500, spring 2005, ACC-grant TxState University.
7. "Development of an Electronic Homework Web site for PHYS1410", $2,000, Merrick Instructional Enhancement Grant, 1998-1999 (PI).

H. Submitted, but not Funded, Internal Teaching Grants and Contracts:

N/A

I. Other:

N/A

III. SCHOLARLY/CREATIVE

A. Works in Print

1. Books (if not refereed, please indicate)

a. Scholarly Monographs:

1. Wim Geerts, "Magnetization Distribution at the surface of Co-Cr films: Magneto-Optical, Chemical and Structural characterization", *ISBN NR 90-9004803,* Enschede, The Netherlands, 1992.

b. Textbooks:

N/A

c. Edited Books:

N/A

d. Chapters in Books:

N/A

e. Creative Books:

N/A

2. Articles

a. Refereed Journal Articles:

NOTE: undergraduate students are underlined, **graduate students** are printed in bold; *high school teachers* are italicized and underlined. The total number of students that has worked in my lab at TxState is 111.

2. **Tanjina Ahmed**, **Kolton Dieckow**, **Binod D.C.**, Wilhelmus J. Geerts, Erik Samwel, "Correction strategy for systematic wobble errors in VSM Torque Curves measured on Soft Magnetic Samples", under preparation.
3. **Samuel W. Kimmel**, **Barry D. Koehne**, **Ben Gibson**, Wilhelmus J. Geerts, Nikoleta Theodoropoulou, Christopher Rhodes, "Structure and Magnetism of Iron-Substituted Nickel Hydroxide Nanosheets", Magnetochemistry 9, 25 (2023), https://www.mdpi.com/2312-7481/9/1/25.
4. **Samuel R. Cantrell**, Eric Welch, Luisa Scolfaro, Wilhelmus J. Geerts, "Opto-electronic properties of carbon doped NiO", J. Phys. and Chem. Solids, November 14 (2022), 111110, https://doi.org/10.1016/j.jpcs.2022.111110.
5. **Tanjina N. Ahmed**, **Camila Belduque**, Maggie Y. Chen, Jitendra S. Tate, Wilhelmus J. Geerts, "Dynamic Viscosity of Strontium Ferrite-Nylon Composite Below the Melting Temperature, AIP Advances 12, 095223 (2022), https://doi.org/10.1063/5.0098972.
6. Md Dalim Mia, **Brian Samuels**, **Ahad Talukder**, Pablo D. Borges, Luisa Scolfaro, Wilhelmus J. Geerts, Ravi Droopad, "Theoretical and experimental study of $(Ga_{1-x}Fe_x)_2O_3$ ternary alloys", J. Cryst. Growth 575 (2021) 126353, pp. 1-11 (impact factor 1.797).
7. **Lauren Henderson**, **Sam Zamora**, **Tanjina N. Ahmed**, **Camila Belduque**, Jitendra Tate, Maggie Yihong Chen, Wilhelmus J. Geerts, "Altering Magnetic properties of Iron Filament PLA using Magnetic Field Assisted Additive Manufacturing (MFAAM)", J. Magn. Magn. Mat. 538 (2021) 168320 (impact score 3.05).

8. **James Shook**, Pablo D. Borges, Wilhelmus J. Geerts, Luisa M. Scolfaro, "Evaluation of Ni doping for promoting favorable electronic structures in $CuCrO_2$ and $AgCrO_2$ from a first-principles perspective", Ceramics International 46 (2020) 26777-26783 (impact factor 3.64).
9. **Fidele J. Twagirayezu**, **Md. Abdul Ahad Talukder**, Wilhelmus J. Geerts, "Magnetic Properties of RF sputtered NiO and $Ni_{0.8}Fe_{0.2}O_{1-\delta}$ samples grown on SiO_2/Si substrates", Materials Research Innovations 24 (2020), pp. 44-51, DOI: 10.1080/14328917.2018.1558797 (impact factor 1.14).
10. **Shankar Acharya**, Brian Collier, Wilhelmus Geerts, "Dual Beam Modulated Magneto-Optical Measurement Setup", Rev. Sc. Instrum. 90 (2019) 123001 (impact factor 1.48).
11. **John Petersen**, Luisa M. Scolfaro, Pablo D. Borges, Wilhelmus J. Geerts, "Symmetry consideration on band filling and first optical transition in NiO", Eur. Phys. J. B (2019): 92:232, https://doi.org/10.1140/epjb/e2019-100363-5.
12. **James Shook**, Pablo D. Borges, Luisa M. Scolfaro, Wilhelmus J. Geerts, "Effects of vacancies and p-doping on the optoelectronic properties of Cu- and Ag-based transparent conducting oxides", J. Appl. Phys. 126 (2019) 075702.
13. **James Shook**, Luisa M. Scolfaro, Pablo D. Borges, Wilhelmus J. Geerts, "Structural stability and electronic properties of XTO2 (X=Cu, Ag; T=Al, Cr): An ab initio study including X vacancies and Mg doping", Solid State Sciences 88 (2019) pp. 48-56.
14. **Md. Abdul Ahad Talukder**, Wilhelmus J. Geerts, "Jones matrix description of Fabry-Perot interference in a single axis photoelastic modulator and the consequences for the magneto-optical measurement method.", AIP Advances **7**, 8 (2017) 085320, https://doi.org/10.1063/1.4999517.
15. **Jonathan Tamir**, Dan Tamir, Wilhelmus Geerts, Sholmi Dolev, Compressive Scanning of an Object Signature, Natural Computing 14, issue 3 (2015) 457-467, DOI 10.1007/s11047-014-9460-7.
16. Dan Tamir, Natan Shaked, Wilhelmus Geerts, Shlomi Dolev, "Parallel Decomposition of Combinatorial Optimization Problems Using Electro-Optical Vector by Matrix Multiplication Architecture", The Journal of Supercomputing 25 (2012 in print and 2010 on line), pp. 633-655 (impact factor 0.687).
17. Martin J. Sablik, Wilhelmus J. Geerts, **Kyle Smith**, **Amanda Gregory**, Clayton Moore, Daniel Palmer, Anup Bandyopadhyay, Fernando J. G. Landgraf, Marcos F. de Campos, "Modelling of Plastic deformation effects in Ferromagnetic Thin Films", *IEEE Trans. on Magn. 46 (2010) pp. 491* (impact factor: 1.13).
18. R.K Pandey, P. Padmini, R. Schad, J. Dou, H. Stern, R. Wilkins, R. Dwivedi, W.J. Geerts, and **C.O'Brien**, "Novel Magnetic-Semiconductors in Modified FeTiO3 for Radhard Electronics", *J. Electroceramics 22 (2009)* pp. 334–341 (impact factor 0.99).
19. C.B. Craus, T. Onoue, K. Ramstock, W.J.M.A. Geerts, M.H. Siekman, L. Abelmann, and J.C. Lodder, A read and write element for magnetic probe recording, J. Phys. D: Appl. Phys. 38 (2005) 363-370.
20. **Gabriel H. Monreal**, Michael Blanda, Wilhelmus Geerts, Heather Galloway, Gregory F. Spencer, A conformationally-immobile, partially-functionalized calixarene as a negative electron beam resist, *J. Vac. Sc. Techn. B 23* (2005) pp. 1998 (impact factor 1.63).
21. Andrew P. Schuetze, **Wayne Lewis**, Chris Brown, Wilhelmus J. Geerts, "A Lab Class on the Four-Point Probe Technique", *Am. J. Phys* 72 (2004) pp. 149 (impact factor 0.72).
22. Frances Hellman, Wim Geerts, **Brian Donehew**, "Magneto-optic Measurements of Amorphous Gd-Si Alloys", *Phys. Rev. B* 67 (2003) 12406 (impact factor 3.327).
23. **Claude Garrett**, **Patrick Holland**, Wilhelmus J. Geerts, Dustin Ragan, Archana Dubey, Steve Rios, Anup K. Bandyopadhyay, "Thickness Dependence of the Magnetic Hysteresis of NiFe-31% Films as a Function of an Applied Isotropic In-plane Stress", *J. Appl. Phys 93, pp.* 8624-8627 (2003) (impact factor 2.28).

24. **Patrick Holland**, Mary Kempton, Dustin Ragan, Steve Rios, Anup K. Bandyopadhyay, Archana Dubey, Wilhelmus J. Geerts, "Magnetic Hysteresis Measurements of Thin Films of NiFe-31% under Isotropic Stress", *J. Magn. Magn. Mat.* 250 (2002) L1-L5 (impact factor 1.05).
25. Wilhelmus Geerts, **Brian Donehew**, Vaughan Williams, Thomas Schmiedel, "A Set-up for Measuring Magneto-optical Kerr Hysteresis Curves at High Fields and Low Temperature", *Rev. Sci. Instrum.* 73 (2002) 2086 (impact factor 1.44).
26. *Ena S. Bichsel*, Brenda Wilson, Wilhelmus J. Geerts, "Recorded Bit Pattern Imaging of Floppy Disks and Phone-cards with Toner-Fluid", *The Physics Teacher 40 (2002) 150*.
27. **J.A. Caballero**, W.J. Geerts, F. Pettroff, F. Thiele, "Magnetic and magneto-optical properties of NiMnSb thin films", *J. Magn. Magn. Mat. 177-181 (1998) 1229-1230.*
28. **J. Hong**, **J.A. Caballero**, W. Geerts, J.R. Childress, S.J. Pearton, "Dry and Wet Etch Processes for NiMnSb Heusler Alloy Thin Films", *J. Electrochem. Soc. 144 (1997) 3602*.
29. J.A. Caballero, W.J. Geerts, and J.R. Childress, F. Petroff and P. Galtier, J.-U. Thiele and D. Weller, "Structure and Magneto-Optical Properties of Sputter-Deposited NiMnSb Thin Films", Appl. Phys. Lett. 71 (1997) 2382.
30. W. Geerts, T. Katayama, Y. Suzuki, J. Childress, "Wavelength dependence of the magneto-optical properties of the interfaces of a Au sandwiched (001) Fe film", J. Vac. Sci. Techn. B 14 (1996) 3176.
31. T. Katayama, W. Geerts, Y. Suzuki, D. Fujitani, N. Okuzawa, "Oscillation of magneto-optical Kerr effect in Co ultra-thin films", J. Magn. Magn. Mat. 156 (1996) 171.
32. N. Okuzawa, T. Katyama, D. Fujitani, W. Geerts, and Y. Suzuki, "Magneto-Optical Kerr effect in different surfaces of epitaxially grown Co Films", J. Magn. Soc. Jpn. 20 (1996) 193.
33. W. Geerts, J.D. MacKenzie, C.R. Abernathy, S.J. Pearton, and T. Schmiedel, "Electrical transport in p-GaN, n-InN, and n-InGaN", Solid State Electronics 39 (1996) 1289-1294.
34. N. Bardou, B. Bartenlian, F. Rousseaux, D. Decanini, F. Carcenac, E. Cambril, M.F. Ravet, C. Chappert, P. Veillet, P. Beauvillain, R. Megy, W. Geerts, J. Ferre, "Elaboration and magneto-optical study of submicron magnetic structures in Au/Co/Au ultrathin films", J. Magn. Magn. Mat. 156 (1996) 139.
35. T. Katayama, Y. Suzuki, W. Geerts, "Magneto-Optical transition due to a formation of quantum well states in magnetic ultra-thin films and multilayers (invited)", J. Magn. Magn. Mat. 156 (1996) 158.
36. Y. Suzuki, W. Geerts, T. Katayama, "The Magneto-Optical quantum size effect of ultra-thin epitaxial Fe films", Optoelectronics-Devices and Technologies 10 (1995) 269.
37. W. Geerts, T. Katayama, and Y. Suzuki, "On the oscillation of the magneto-optical properties of ultrathin epitaxial Fe films (invited)", J. Magn. Soc. Jpn. 19, S1 (1995) 309.
38. T. Katayama, D. Fujitani, W. Geerts, N. Okusawa, Y. Suzuki, C.-G. Lee, H. Takeda, H. Kataoka, K. Fukamichi, and Y. Shimada, "Magneto-Optical Kerr Rotation Spectra in sputtered granular Co-Au alloy films", J. Magn. Soc. Jpn. 19, S1 (1995) 243.
39. T. Katayama, Y. Suzuki, W. Geerts, "A new Magneto-Optical Effect due to Quantum Well States in Metallic Ultrathin films", ETL reports 7 (1995) 63.
40. W. Geerts, Y. Suzuki, T. Katayama, K. Tanaka, K. Ando and S. Yoshida, "Thickness dependent oscillation of the magneto-optical properties of Au-sandwiched (001) Fe films", Phys. Rev. B 50 (1994) 12581.
41. T. Katayama, Y. Suzuki, M. Hayashi, and W. Geerts, "Change of Magneto-Optical Kerr rotation due to interlayer thickness in magnetically coupled films with noble-metal wedge", J. Appl. Phys. 75 (1994) 6360.
42. W. Geerts, C. Lodder, Th. Popma, "Biaxial Kerr Magnetometry in oblique field for the study of thin films with a perpendicular anisotropy", J. Magn. Magn. Mat. 137 (1994) 224.

43. M. Hayashi, T. Katayama, Y. Suzuki, M. Taninaka, A. Thiaville, W. Geerts, "Magneto-Optical Kerr rotation spectra in Fe ultrathin film on noble metals", J. Magn. Magn. Mat. 126 (1993) 547-549.
44. W.J.M.A. Geerts, J.C. Lodder, Th.J.A. Popma, "A combined optical and magneto-optical measurement system", Rev. Sc. Instrum. 64 (1992) 1805.
45. W.J.M.A. Geerts, J.C. Lodder, Th.J.A. Popma, "Surface properties and stray fields of RF-sputtered Co-Cr films", J. Magn. Magn. Mat. 104-107 (1992) 971-972.
46. J. Simsova, V. Kambersky, R. Gemperle, J.C. Lodder, W.J.M.A. Geerts, B. Otten, P. ten Berge, "Domainstructure of Co-Cr films", J. Magn. Magn. Mat. 101 (1991) 196-198.
47. T. Masuda, W.J.M.A. Geerts, J.C. Lodder, "Surface chemical state of sputtered Co-Cr films", J. Magn. Magn. Mat. 101 (1991) 123.
48. W.J.M.A. Geerts, J.G.Th. te Lintelo, J.C. Lodder, Th.J.A. Popma, "Anomalous Hc in Co-Cr films, IEEE Trans. Magn. 26 (1990) 36-38.

b. Non-refereed Articles:

1. W. Geerts, "On the Design of a Magneto-Optical probe for measurements in High fields and at low temperatures", published on the NHMFL web-site: https://www.researchgate.net/profile/Wilhelmus_Geerts/publication/267401659_On_the_design_of_a_Magneto-Optical_Kerr_probe_for_measurements_in_High_fields_and_at_low_temperatures/links/55b8114108ae092e96587a16/On-the-design-of-a-Magneto-Optical-Kerr-probe-for-measurements-in-High-fields-and-at-low-temperatures.pdf

2. W. Geerts, "MOK3: A high field magneto-optical Kerr probe.", published on the NHMFL web-site: http://gato-docs.its.txstate.edu/jcr:a4e7620c-ad29-48af-a2c3-dae3290b03e4/hfmoker.pdf

3. Conference Proceedings

a. Refereed Conference Proceedings:

NOTE: undergraduate students are underlined, **Master graduate students** are printed in bold; **PhD graduate students** are printed underlined in bold, *high school teachers* are italicized and underlined, *high school students* are italicized. The total number of students that has worked in my lab at TxState is 111.

49. **Tanjina N. Ahmed**, Christopher Selsor, Jitendra S. Tate, Wilhelmus J. Geerts, "Magnetic Behavior and Chaining of Strontium Ferrite-Nylon Composite Above the Melting Temperature", accepted for publication in AIP Advances, January 12, 2023.

50. **C.Q. Howlader**, B. Mishra, **N. Khakurel**, **D.W. Amyx**, W. Geerts. G. Gibson, M. Chen, "Fabricate anti-solvent free tin-lead based perovskite solar cells with MAAc additives", SPIE conference proceedings vol. 12209, 1220905-1 1220905-6, (October 4 2022), https://www.spiedigitallibrary.org/proceedings/Download?urlId=10.1117%2F12.2634371&downloadType=proceedings%20article&isResultClick=True.

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54. **Camila Belduque**, Ryan Robinson, Adrian Medina, **Tanjina Ahmed**, **Rijul Kala**, Wilhelmus Geerts, and Jitendra Tate, "Magnetic and Mechanical characterization of Additive Manufactured Strontium Ferrite/Polyamide 12 Composites using Twin-Screw and Single-Screw Extrusion", SAMPE 2021 conference proceedings, ISBN Number: 978-1-934551-39-4, Long Beach, CA, May 24-27, 2021.

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b. Non-refereed:

N/A

4. Abstracts:

No record

5. Reports:

N/A

6. Book Reviews:

N/A

7. Other:

72. Wilhelmus J. Geerts, Larry Larson, Clois Powell, Byounghak Lee, Christian Ringhofer, "Particle Photovoltaics using Silicon", US provisional patent 61/209,268, 2009.
73. Wilhelmus Geerts, Martin Sablik (SWRI), "Multilayer coating with Super strong adhesion to nitinol sheet metal" and "Novel technique to determine the magneto-plastic properties of thin ferromagnetic films", Invention disclosure submitted to Texas State University, 2009. Rights to the invention were relinquished on December 3, 2009.
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B. Works not in Print

1. Papers Presented at Professional Meetings (no record of presentation before 1997):

NOTE: undergraduate students are underlined, **Master graduate students** are printed in bold; **PhD graduate students** are printed underlined in bold, *high school teachers* are italicized and underlined, *high school students* are italicized. The total number of students that has worked in my lab at TxState is 111.

Posters:

1. **Nischal Khakurel**, **Chandan Howlader**, Greg Gibson, Yoichi Miyahara, Wilhelmus Geerts, "Formamidine Acetate Assisted Antisolvent Free Crystallization of Wide Band-Gap Hybrid Perovskites for Slot-Die Coating", poster presentation MRS Fall 2022 conference Boston, November 27 -December 2, 2022.

2. **Chandan Howlader**, **Nischal Khakurel**, Wilhelmus Geerts, Greg Gibson, Maggie Chen, Continuous MASnI3 Perovsite thin films deposited by spin coating without antisolvent treatment, poster presentation MRS Fall 2022 conference Boston, November 27 – December 2, 2022.

3. **Nischal Khakurel**, **Drew Amyx**, Greg Gibson, Yoichi Miyahara, Wilhelmus Geerts, "Formamidinium Acetate additive for antisolvent-free crystallization of wide bandgap hybrid perovskites", poster presentation 2022-TSAPS, Rice University Houston, October 13-15 2022.

4. **Chandan Q Howlader**, B. Mishra, **N. Khakurel**, **D.W. Amyx**, W. Geerts, G. Gibson, Maggy Y. Chen, "Fabricate anti-solvent free tin-lead based perovskite solar cells with MAAc additives", Organic, Hybrid, and Perovskite Photovoltaics XXIII, 23-25 August 2022, 21-21 August 2022, SPIE Optics + Photonics Conference, San Diego, California.

5. **C.Q. Howlader**, **N. Khakurel**, D.W. Amyx, W. Geerts, G. Gibson, M. Chen, Pin-Hole free MAPb0.75Sn0.25(I0.5Br0.5)3 films spin casted without anti-solvent by adding MAAc additive to Perovskite ink, poster presentation 20th International Conference on Renewable Energies and Power Quality (ICREPQ'22), Vibo (Spain), 27th to 29th July 2022.

6. Luisa Scolfaro, Md Dalim Mia, **Ahad Talukder**, **Brian Samuels**, Pablo D. Borges, Wilhelmus J. Geerts, Ravi Droopad, "Stability and Electronic Properties of Ga_2O_3: Fe Alloys Studied Using Density Functional Theory Calculations", MRS virtual Spring meeting 2021 conference, April 17-23, 2021.

7. **Tanjina Nasreen Ahmed**, **Lauren Henderson**, **Camila M. Belduque**, Jitendra Tate, Maggie Chen, Wilhelmus Geerts, "Effect on the magnetic properties of MFAAM process on hard and soft magnetic 3D printed composite materials measured with a biaxial Vibrating Sample Magnetometer (VSM) and Torque Magnetometer (TM)", International Research Conference Texas State University, San Marcos, Texas, April 6-8, 2021.

8. **Tanjina Ahmed**, **Binod D.C.**, **Maria Camila Belduque**, Jitendra Tate, Wilhelmus Geerts, "Time Dependence of Magnetic Moment of Strontium-Ferrite powder measured by biaxial VSM", MMM-2020 conference, November 2 through 6 2020, Palm Beach Florida.

9. **Camila Belduque**, **Tanjina Ahmed**, Wilhelmus J. Geerts, Jitendra Tate, "Magnetic Moment and Magnetic Anisotropy Analysis of 3D printed Strontium Ferrite/PA12 filament under a Magnetic Field", SPE-Automotive Composite Conference & Exhibition, September 9-11 2020, Detroit, 3rd place in Masters Category, $200.

10. *Sarah Beth Ragan*, **Kolton Dieckow**, **Binod D.C.,** Wilhelmus J. Geerts, "Biaxial VSM Angular Measurements with Alignment", Wise conference March 6, 2020, Texas State University.

11. **Kolton Dieckow**, *Sarah Beth Ragan*, **Chandan Howlader**, **Binod D.C.**, Wilhelmus Geerts, "Biaxial VSM Sensitivity and Crosstalk Measurement Dependence for $S_{xx}(x,y,z)$, $S_{xy}(x,y,z)$, and $S_{xz}(x,y,z)$", poster presentation 2019-Fall meeting of the TSAPS, Lubbock, October 25-26 2019.

12. **Nick Talbert**, Wilhelmus J. Geerts, "Electrical Characterization of Silicon Nickel Iron Oxide heterojunctions", poster presentation at MRS Spring meeting Spring 2019, April 22-26, Phoenix.

13. Samuel Zamora, Wilhelmus Geerts, *Joselyn Lesikar*, **Binod D.C.**, "Measuring the Magnetic Properties of 3D Printed Materials Using the Vibrating Sample Magnetometer", TSAP spring meeting 2019, Stephen F. Austin State University, Nacogdoches, March 8, 2019.

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15. Rigoberto Mayorga-Luna, Chandler Hutton, Wilhelmus J. Geerts, "Algorithm to Diagnose Problematic Wires or Contacts of Four Point Probe Measurement Setup", Wise conference March 8, 2019, Texas State University.

16. Selena Rose Najar, *Joselyn Lesikar*, Binod D.C., Luisa Scolfaro, Wilhelmus J. Geerts, "Studying the Temperature Dependent Magnetic Properties of Reactive RF Co-sputtered NiFeO Thin Films Using VSM", Wise conference March 8, 2019, Texas State University.
17. **Shankar Acharya**, Luisa Scolfaro, Wilhelmus J. Geerts, "Dual Beam Detection Technique to Study MOKE", Wise conference March 8, 2019, Texas State University.
18. **Samuel Cantrell**, Luisa Scolfaro, Wilhelmus J. Geerts, "Stability of transition metal impurities in nickel oxide via formation energy calculations, Wise conference March 8, 2019, Texas State University.
19. Selena Rose Najar, *Joselyn Lesikar*, **Binod D.C**., Luisa Scolfaro, Wilhelmus J. Geerts, "Temperature Dependence of the Magnetic Properties of Reactive RF Sputtered NiFeO Thin Films", Fall-2018 TSAPS presentation, October 15, Houston.
20. Noel Gamez, Wilhelmus Geerts, Luisa Scolfaro, William Spencer, Giri Joshi, "Iron Gallium Magnetostriction Measurement Setup", Fall-2018 TSAPS presentation, October 15, Houston.
21. Selena Rose Najar, *Joselyn Lesikar*, **Binod D.C.**, Luisa Scolfaro, Wilhelmus Geerts, "Preliminary Temperature Dependence of the Magnetic Properties of Reactive RF Sputtered NiFeO Thin Films", Symposium for Undergraduate Research Exploration 2018, University of Texas at Austin, October 4, 2018.
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23. Clint Boldt, **Md. Abdul Ahad Talukder**, **James Nick Talbert**, Luisa Scolfaro, Wilhelmus J. Geerts, "Properties of carrier traps in diode and RRAM devices via DLTS", Fall-2018 TSAPS presentation, October 15, Houston.
24. **Binod D.C**., Andres Oliva, **Anival Ayala**, **Shankar Acharya**, **Fidele Twagirayezu**, **James Nick Talbert,** Luisa Scolfaro, Wilhelmus Geerts, "Magnetic Properties of reactive sputtered NiFe-oxide samples", International Conference on Magnetism 2018, July 18, San Francisco.
25. **Shankar Acharya**, Brian Collier, **Md. Abdul Ahad Talukder**, Wilhelmus Geerts, "Dual Beam Modulated Magneto-Optical Measurement Setup", poster presentation International Conference on Magnetism 2018, July 19, 2018, San Francisco.
26. Samuel W. Kimmel, **Fernando Godinez-Salomon**, Wim Geerts, Christopher P. Rhodes, "Investigation of Iron Substitution on the Structure and Magnetization of Nickel Hydroxide and Nickel Oxide", poster presentation Texas State undergraduate research conference, Texas State University at San Marcos, April 18, 2018.
27. **Samuel Cantrell**, Luisa Scolfaro, Pablo Borges, Wilhelmus J. Geerts, "Study of p-type behavior in NiO doped CU and AG using ab initio calculations", poster at the Spring-2018 TSAPS at Tarleton State University in Stephenville, March 23, 2018.
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30. **Amanda Gregory**, Wilhelmus Geerts, Sudarshan Luitel, Davide Prosperi, Alex Bevan, Oana Catalina Tudor, Stephen Dove, Miha Zakotnik, "Magnetic viscosity measurements on NdFeB permanent magnet materials, poster Wise-2017 conference, Texas State University, San Marcos, April 2017.

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34. Gabriel Leitao, **Fidele Twagirayezu**, Pablo D. Borges, Luisa Scolfaro, Wilhelmus Geerts, Band structure and density of states of anti-ferromagnetic and ferromagnetic iron (II) oxide by ab initio simulations, presentation at the Fall 2015 Joint Meeting of the Texas Section of the AAPT, Texas Section of the APS and Zone 13 of the Society of Physics Students, October 29 -31, 2015; Waco, Texas.

35. Joshua Thompson, **Jonathan Preiss**, Wilhelmus J. Geerts, Madhavrao Govindaraju, Design and construction of magnetic coils for in-situ Kerr measurements in an Instron Materials Tester, Undergraduate Research Conference and Honors Thesis Forum, Texas State University April 24, 2015.

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37. Wilhelmus J. Geerts, **Nelson Simpson**, **Maclyn S. Compton**, **Alan Woodall**, Indium Tin Oxide thin films deposited at low temperature using Dual Ion Beam Sputtering, 2014 MRS Spring meeting, San Francisco, California.

38. Michael A. Robinson, **Maclyn Compton**, Wilhelmus Geerts, Optical Properties of oxidized Ni-Fe films, Wise Conference, October 2013, Texas State University, San Marcos.

39. Elizabeth Leblanc, **Maclyn Compton**, Wilhelmus Geerts, The Dielectric Properties of Permalloy-Oxide, Wise Conference, October 2013, Texas State University, San Marcos.

40. Kaleb Gilbert, Kunal Bhatnagar, Steve Jackson, Ravi Droopad, Wilhelmus Geerts, "Spectroscopic Ellipsometry of Gadolinium Gallium Oxide Multilayers", poster presentation March 2011 meeting APS, Dallas.

41. Alan Woodall, Wim Geerts, Anup Bandyopadhyay, "Electrical and Optical Properties of ITO films prepared by Dual Ion Beam Sputtering, poster presentation March 2011 meeting APS, Dallas.

42. **Daniel Frasier**, Greg Spencer, Anup Bandyopadhyay, Wim Geerts, "Silicon Nanoparticle Formation Analysis and Optical Properties", poster presentation March 2011 meeting APS, Dallas.

43. **Hector Valdez**, Wilhelmus Geerts, Larry Larson, "Losses in Particle Photovoltaics", poster presentation TSAPS Fall meeting October 2009, Texas State University.

44. Martin J. Sablik, Wilhelmus J. Geerts, Fernando J.G. Landgraf, Marcos F. De Campos, „Modeling of plastic deformation in ferromagnetic thin films", 19th Soft Magnetic Materials Conference, Torino Italy, September 2009.

45. Anup Bandyopadhayay, Wim Geerts, Kyle Smith, Amanda Gregory, Clayton Moore, Daniel Palmer, Jitendra Tate, Martin Sablik, "Plastic deformation of thin ferromagnetic films on nitinol sheet metal", poster presentation MMM-2008, Austin, November 2008.

46. Clayton Moore, Conrad Newton, Wilhelmus Geerts, Daniel Palmer, Dan Tamir, "Optical Lithography on non-flat surfaces; A Case Study.", poster presentation combined 4CS-TS APS Fall meeting October 2008, UTEP.

47. Amanda Gregory, Kyle Smith, Clayton Moore, Daniel Palmer, Anup Bandyopadhyay, Wim Geerts, Martin Sablik, "The Effect of Plastic deformation on the Magnetic Properties of thin Iron and Permalloy Films", Poster Presentation combined 4CS-TS APS Fall meeting October 2008, UTEP.

48. Amanda Gregory, Kyle Smith, Clayton Moore, Daniel Palmer, Anup Bandyopadhyay, Wilhelmus J. Geerts, M.J. Sablik, The Effect of Plastic Deformation on the Magnetic Properties of Thin Iron and Permalloy Films, poster presentation Texas State Undergraduate Research Conference and Honor's Thesis Forum, November 30, 2007.

49. Daniel Fenter, **Elaine Tennant**, Wilhelmus Geerts, "Non Invasive Optical Imaging by Speckle ensemble: Light Scattering of frosted glass, paper, and chicken meat", poster presentation at Texas State Undergraduate Research Conference & Mitte Honors Thesis Forum, Nov. 2006.

50. Wilhelmus J. Geerts, **Claude Garrett**, Greg Spencer, Carlos Gutierrez, **Jett Hendrix**, Casper S. Doppen, Leon Abelmann, **Hans-Willem Ten Brinke**, **Nelson White**, Magnetic Reversal in NiFe Patterned Thin Films, poster presentation MMM conference (October 2005) San Jose.

51. Gregory Spencer, Wilhelmus Geerts, Gregory Kidd, Gene Stouder, *Bonnie Marshall*, *John Sarsoza*, "Exposing High School Students to High Technology", Poster Presentation at the APS national Spring Meeting, Austin Texas, March 3-7 2003.

52. **Jett Hendrix**, Wilhelmus Geerts, Arun Vijayakumar, "Ellipsometry on magnetic gratings of NiFe", Poster at the first annual central Texas workshop on contamination control and chemical metrology, October 2002, San Marcos, TX.

53. Jacob Grimes, Wilhelmus Geerts, **Patrick Holland**, Anup Bandyopadhyay, Carlos Gutierrez, John Givens, Ted Oyama, Kevin Radican, Nazul Rivera, "Optical Properties of Mo_2C", Poster at the first annual central Texas workshop on contamination control and chemical metrology, October 2002, San Marcos, TX.

54. **Claude Garrett**, Wilhelmus Geerts, Greg Spencer, "Using a laserwriter system for maskless photolithography", Poster at the first annual central Texas workshop on contamination control and chemical metrology, October 2002, San Marcos, TX.

55. Y. Suzuki, T. Katayama, W. Geerts, P. Bruno, S. Yuasa, T. Yori, "Magneto-optical effects in bcc-Fe ultrathin films", International Symposium on Physical Problems of Magnetic Materials 1998, Sendai, Japan.

Presentations:

56. **Samuel Cantrell**, Eric Welch, Wilhelmus Geerts, Luisa Scolfaro, "Optoelectronic Properties induced by Carbon Doping in NiO", 2022-TSAPS, Rice University Houston, October 13-15, 2022.

57. **Selena Rose Najar**, **Nischal Khakurel**, **Drew Amyx**, Alex Zakhidov, Wilhelmus J. Geerts, "Wide Range Optical Stability Study of Ionic Based Hybrid Perovskites for Solar Cells", 2022-TSAPS, Rice University Houston, October 13-15 2022.

58. **Tanjina N. Ahmed**, Christopher Selsor, Jitendra S. Tate, Wilhelmus J. Geerts, "Magnetic Behavior and Chaining of Strontium Ferrite-Nylon Composite Above the Melting Temperature", oral presentation, accepted for 2022-MMM conference, Minneapolis, MN October 31-November 4, 2022.

59. **Tanjina N. Ahmed**, **Camila Belduque**, Maggie Y. Chen, Jitendra S. Tate, Wilhelmus J. Geerts, "Time dependence analysis as a function of temperature of magnetic polymer composite filaments", oral presentation, joint MMM-Intermag 2022, January 2022, New Orleans.

60. **Amanda Oliveira**, **Md Nayeem Hasan Kashem**, Danny Luna, Wilhelmus J. Geerts, Wei Li, James Yang, "Magnetic Properties of PDMS Embedded with Strontium Ferrite Particles Cured Under Different Magnetic Field Conditions", oral presentation, joint MMM-Intermag 2022, January 2022, New Orleans.

61. Danny Luna, **Camila Belduque**, Harrison Thramann, Subash Panta, Liam Omer, Tanjina N. Ahmed, Jitendra Tate, Wilhelmus J. Geerts, "Magnetic 3D Printing Filament Development and Printing Methods", 2021-Fall TSAPS Meeting October 21-23, University of Houston, Clear Lake.

62. **Camila Belduque**, **Tanjina Ahmed**, Wilhelmus Geerts, Subash Panta, Harrison Thramann, Liam Omer, Jitendra Tate, "Mechanical Properties of re-extruded SrFe12O19(OP-71)/PA12 Filaments via twin-screw extrusion for fused filament fabrication", oral presentation CAMX, October 2021, Dallas.

63. **Camila Belduque**, Ryan Robinson, Adrian Medina, **Tanjina Ahmed**, **Rijul Kala**, Wilhelmus Geerts, Jitendra Tate, "Magnetic and Mechanical Characterization of additive manufactured strontium ferrite/polyamide 12 composites using twin-screw and single-screw extrusion", SAMPE 2021 conference, Long Beach, CA, May 24-27, 2021.

64. **Lauren Henderson**, **Tanjina N. Ahmed**, **Camila Belduque**, Jitendra Tate, Maggie Chen, Wilhelmus J. Geerts, Altering Magnetic Properties of Iron Filament PLA Using Magnetic Field Assisted Additive Manufacturing, APS March-2021 meeting, March 15-19, 2021.

65. **Tanjina Nasreen Ahmed**, **Maria Camila Belduque**, Jitendra S. Tate, Wilhelmus J. Geerts, "Magnetic Anisotropy and Torque Analysis of Strontium Ferrite/PA12 composite filament and 3D printed sample under a magnetic field", APS March-2021 meeting, March 15-19, 2021.

66. **Tanjina N. Ahmed**, **Lauren Henderson**, **Camila Belduque**, Maggie Chen, Jitendra S. Tate, Wilhelmus J. Geerts, "Magnetic Field Assisted Additive Manufacturing (MFAAM) of magnetic polymer composite filaments", International Polyolefins Conference, February 23-24, 2021, SPE South Texas Section.

67. **Lauren Henderson**, **Tanjina N. Ahmed**, **Camila Belduque**, Jitendra Tate, Maggie Chen, Wilhelmus J. Geerts, Altering Magnetic Properties of Iron Filament PLA Using Magnetic Field Assisted Additive Manufacturing, TSAPS Fall-2020 meeting UT Arlington.
68. **Kolton Dieckow**, **Chandan Howlader**, **Tanjina Ahmed**, **Maria Camila Belduque**, Jitendra Tate, Wilhelmus Geerts, "Effect of Field Orientation and Infill Percentage on the VSM calibration factor of FFM 3D printed samples", MMM 2020 conference, oral presentation, Palm Beach Florida, November 2-6, 2020.
69. **Samuel R Cantrell,** Luisa Scolfaro, Pablo Borges, Wilhelmus J. Geerts, "GGA+U and hybrid functional calculations of intrinsic defects and transition metal doping in NiO", oral presentation at APS April meeting in Denver Colorado, April 13-16, 2019.
70. **James Nick Talbert**, Wilhelmus J. Geerts, Luisa Scolfaro, "Electrical Characterization of Nickel oxide and Nickel Iron Oxide Thin Films and Resistive Random Access Memory Devices grown by Radio Frequency Sputtering", Fall-2018 TSAPS presentation, October 15, Houston.
71. **Sam Cantrell**, Luisa Scolfaro, Pablo Borges, Wilhelmus Geerts, "Copper-induced features in rocksalt NiO using ab initio calculations", Fall-2018 TSAPS presentation, October 15, Houston.
72. **Shankar Acharya**, Brian Collier, **Abdul Ahad Talukder**, Wilhelmus J. Geerts, "Dual Beam MOKE Detection to Suppress the Effect of Modulated Interference Effects in PEM", Oral presentation 2018-TSAPS spring meeting at Tarleton State University in Stephenville, March 23 2018.
73. **Shankar Acharya**, *Mariah Chappell*, Mayuko Stauffeneger, Wilhelmus Geerts, "Study of different oxide concentrated Nickel oxide thin films using Scanning Probe microscopy", oral presentation ninth international research conference for graduate students, Texas State University San Marcos, November 8, 2017.
74. **Binod D.C.**, Wilhelmus J. Geerts, Aaron Medina, "Calculation of distribution of temperature and potential on RRAM using finite element method", presentation at the Fall-2017 meeting of the TSAPS, Dallas, October 20-21, 2017.
75. Brian Collier, Wilhelmus Geerts, Ahad Talukder, James Nick Talbert, Aaron Medina, Andres Oliva, "Magneto-Optical Faraday Effect in NiO and NiFeO Thin Films", presentation at the Fall-2017 meeting of the TSAPS, Dallas, October 20-21, 2017.
76. **Md Abdul Ahad Talukder**, Wilhelmus J. Geerts, Interference effects in Photo-elastic modulator when using highly coherent light, oral presentation at the Fall-2016 Joint meeting of the four corners and Texas Sections of the American Physical Society, Las Cruces, New Mexico.
77. **John Petersen**, **Fidele Twagirayezu**, Luisa Scolfaro, Pablo Borges, Wilhelmus Geerts, "Electronics and Optical properties of antiferromagnetic Iron doped NiO – A first principles study", oral presentation MMM conference New Orleans, October 2016.
78. **John Petersen**, **Fidele Twagirayezu**, Pablo Borges, Luisa Scolfaro, Wilhelmus Geerts, First Principles study of oxygen vacancies and iron impurities on electrical and optical properties of NiO, National APS-March meeting March 14-16, 2016, Baltimore, Maryland.
79. Luisa Scolfaro, **John Petersen**, **Fidele Twagirayezu**, Gabriel Leitao, Pablo Borges, W. Geerts, Electronic, Optical and Magnetic Properties of Iron doped Nickel Oxide, oral presentation, Symposium NT2 – Oxide and Chalcogenide-Based Thin Films and

Nanostructures for Electronics and Energy Applications, MRS Spring Meeting, March 28-April 1 2016, Phoenix, Arizona.

80. **Fidele Twagirayezu**, Gabriel Leitao, Pablo D. Borges, Luisa Scolfaro, Wilhelmus Geerts, Study of electronic structure of Fe-doped NiO using first principle calculations, oral presentation at the Seventh International Conference for Graduate Students at Texas State University, November 17 - 18, 2015; San Marcos, Texas.
81. James Shook, **Yubo Cui**, **Md Abdul Ahad Talukder**, **Tang Xi**, **Greg McClendon**, Alex Zakhidov, Luisa Scolfaro, Wilhelmus Geerts, Sheet resistance measurements on a Fe-doped NiO ReRam Test Chip, oral presentation 2015 TSAPS-Fall meeting Baylor University, October 29-31, Texas.
82. **Yubo Cui**, **Md Abdul Ahad Talukder**, **Greg McClendon**, **Xi Tang**, Wilhelmus Geerts. Iron Doped NiO Based Resistive RAM Test Chip, oral presentation 7th international research conference for graduate students, Texas State University, Nov. 17-18, 2015.
83. **Md Abdul Ahad Talukder**, **Yubo Cui**, Wilhelmus J. Geerts, Study of the Crystal Properties of Iron Doped NiO using an X-ray Diffactormeter, oral presentation 7th international research conference for graduate students, Texas State University Nov. 17-18, 2015.
84. **Yubo Cui**, Wilhelmus Geerts, **Fidele Twagirayezu**, Stefan Zollner, IR Ellipsometry on RF sputtered Permalloy Oxide thin films, National APS-March Meeting, 2015, San Antonio, Texas.
85. **Fidele Twagirayezu**, Wilhelmus Geerts, **Yubo Cui**, Optical Properties of Magnetron Sputtered Nickel Thin Films, National APS-March Meeting, 2015, San Antonio, Texas.
86. **Yubo Cui**, Wilhelmus J. Geerts, "The Influence of the Deposition Parameters on the Film Thickness of RF sputtered Permalloy Oxide Thin Films, 6h. International Research Conference for Graduate Students, Texas State University, November 5-6, 2014.
87. **Yubo Cui**, **Fidele Twagirayezu**, Wilhelmus Geerts, Optical Properties of Permalloy Oxide Grown by reactive RF magnetron sputtering, presentation at the 2014-Fall meeting of the Texas Section of the American Physical Society, October 17-19, College Station, 2014.
88. **Maclyn Compton**, **Nelson Simpson**, Elizabeth Leblanc, Michael A. Robinson, Wilhelmus J. Geerts, Electrical and Optical Properties of Permalloy Oxide grown by dual ion beam sputtering, 2014 MRS Spring meeting, San Francisco, California.
89. Wilhelmus J. Geerts, **Nelson Simpson**, **Maclyn S. Compton**, **Alan Woodall**, The influence of Atomic Oxygen on the Figure of Merit of Indium Tin Oxide thin Films grown by reactive Dual Ion Beam Sputtering, National APS-March Meeting, 2014, Denver, Colorado.
90. **Maclyn S. Compton**, Elizabeth LeBlanc, **Nelson Simpson**, Michael A. Robinson, Wilhelmus J. Geerts, The Electric, Magnetic, and Optical Characterization of Permalloy Oxide Grown by Dual-Ion Beam Sputtering, National APS-March Meeting, 2014, Denver, Colorado.
91. **Javad R. Gatabi**, **Bill McKenna**, Kumar Pandey, Dan Tamir, Wilhelmus J. Geerts, Projection on tilted screens using a phase only spatial light modulator, APS March Meeting 2014, Denver, Colorado.
92. **Javad R. Gatabi**, Wilhelmus Geerts, Dan Tamir, Kumar Pandey, "Laser Beam Shaping For Lithography on Inclined and Curved Surfaces Using a liquid crystal Spatial Light

Modulator", oral presentation national APS March meeting March 18–22, 2013 Baltimore, Maryland.

93. **Javad R. Gatabi**, Wilhelmus Geerts, Dan Tamir, "Challenging subjects behind using a liquid crystal display as an optical lens", oral presentation APS fall meeting of the Texas Section of the American Physical Society, October 25-27, 2012, Lubbock, Texas.

94. Hanu Arava, Wim Geerts, "Thermally Stimulated Impedance Spectroscopy: Setup And Analysis", oral presentation APS fall meeting of the Texas Section of the American Physical Society, October 25-27, 2012, Lubbock, Texas.

95. Bryant Aaron, Dan Tamir, **Javad Gatabi**, Wilhelmus Geerts, R.K. Pandey, "Sample topography measurements by a novel image processing algorithm", oral presentation APS spring meeting of the Texas Section of the American Physical Society, March 22-24, 2012, San Angelo, Texas.

96. **Nelson Simpson**, Wilhelmus Geerts, Anup Bandyopadhyay, "Optical Properties of Dual Ion Beam Sputtered Indium Tin Oxide Films on Glass and Silicon", oral presentation APS spring meeting of the Texas Section of the American Physical Society, March 22-24, 2012, San Angelo, Texas.

97. **Javad R. Gatabi**, Wilhelmus Geerts, Bryant Aaron, Dan Tamir, R.K. Pandey, "Three-dimensional Topography Using LCD Pattern Transfer Method", oral presentation APS spring meeting of the Texas Section of the American Physical Society, March 22-24, 2012, San Angelo, Texas.

98. Cynthia Montgomery, Wilhelmus Geerts, "Simulation of a Null ellipsometer and a modulating ellipsometer using Mathcad" oral presentation SPS session, Fall-meeting of the Texas Section of the American Physical Society, October 6-8, 2011, Commerce TX.

99. **Geoffrey Miller**, Wilhelmus Geerts, Dan Tamir, "A Fast Algortihm to determine Photoresist film thickness from the reflection spectrum", oral presentation 2011 spring-meeting of the Texas Section of the American Physical Society, March 3-5, Nacogdoches.

100. Brandon Dillard, Wilhelmus Geerts, **Hector Valdez**, Greg Spencer, "Two-dimensional finite element calculation of the charge distribution within a Si particle with a planar diffusion profile", oral presentation 2011 spring-meeting of the Texas Section of the American Physical Society, March 3-5, Nacogdoches.

101. Alan Woodall, Wilhelmus J. Geerts, "Estimating the sheet resistance of a thin film with an Ohm-meter", oral presentation Texas Section APS Fall meeting, UTSA, 2010.

102. Kaleb Gilbert, Kunal Bhatnagar, Steve Jackson, Ravindranath Droopad, Wilhelmus Geerts, Toni Sauncy, "Spectroscopic Ellipsometry of Gadolinium Gallium Oxide thin films", oral presentation Texas Section APS Fall meeting, UTSA, 2010.

103. **Amanda Gregory**, Wilhelmus J. Geerts, Anup Bandyopadhyay, Magneto-Plastic Properties of Ion Beam Sputtered Thin Films on Nitinol Sheet Metal, oral presentation Texas Section APS Fall meeting, UTSA, 2010.

104. **Justin Frasier**, Gregory Spencer, Anup Bandyopadhyay, Wilhelmus Geerts, Using Spectroscopic Ellipsometry to Distinguish Between Si and SiO2 Nanoparticles, oral presentation Texas Section APS Fall meeting, UTSA, 2010.

105. R.K. Pandey, P. Padmini, P. Kale, J. Dou, C. Lohn, R. Schad, R. Wilkins and W. Geerts, "Multifunctional Nature of Modified Iron Titanates and Their Potential Applications",

Electronic and Magnetic Materials Symposium, MS&T'10 and 2010 ACerS Conference and Exhibition Houston, TX, October 17-21, 2010.

106. Dan Tamir, Natan Tzvi Shaked, Wilhelmus J Geerts and Shlomi Dolev, "Combinatorial Optimization Using Electro-Optical Vector by Matrix Multiplication Architecture", OSC November 2009, 2nd international workshop on SuperComputing in Betinoro.

107. **Amanda Gregory**, Martin Sablik, Wilhelmus Geerts, **Kyle Smith**, Anup Bandyopadhyay, Fernando Landgraf, Marcos de Campos, "Magnetoplastic Properties of Thick Films on Nitinol Substrate", oral presentation TSAPS Fall meeting October 2009, San Marcos.

108. Daniel Palmer, **Patrick Read**, Dan E. Tamir, Conrad Newton, Wilhelmus J. Geerts, "Optical Lithography on 3D surfaces", Texas Academy of Science March 2009, Texas Tech, Junction City.

109. Daniel Palmer, **Patrick Read**, Dan E. Tamir, Conrad Newton, and Wilhelmus J. Geerts, "Optical Lithography on Non-flat Surfaces", oral and poster presentations at Texas State Undergraduate Research Conference and Honor's Thesis Forum, December 2008.

110. R.K. Pandey, H. Stern, W. Geerts, P. Padmini, P. Kale, J. Dou, R. Schad, "Room Temperature Magnetic-Semiconductors in Modified Iron Titanates: Their Properties and Potential Microelectronic Devices", invited oral presentation International Congress on Smart Materials and Micro/Nanosystems (CIMTEC 2008) held in Acireale, Sicily, Italy, June 2008.

111. R.K Pandey, P. Padmini, R. Schad, J. Dou, H. Stern, R. Wilkins, R. Dwivedi, W.J. Geerts, and **C.O'Brien**, "Novel Magnetic-Semiconductors in Modified FeTiO3 for Radhard Electronics", invited oral presentation at the International Conference on Electroceramics, July 2007, Tanzania.

112. **Christopher Lohn**, Wilhemus J. Geerts, **Chris B. O'Brien**, J. Dou, P. Padmini, K. Pandey, R. Schad, "IV AND CV CHARACTERISTICS OF MULTIFUNCTIONAL ILMENITE-HEMATITE $0.67FeTiO_3$-$0.33Fe_2O_3$", oral presentation "Functionalized Nanoscale Materials, Devices, and Systems for chem.-bio Sensors, Photonics, and Energy Generation and Storage" NATO-Advanced Study Institute, June 4-15, 2007, Sinaia, Romania.

113. **Elaine Tennant**, Wilhelmus J. Geerts, Zvi Yaniv, Donald Schropp, "N-IR-NOISE: Near Infrared Non-Invasive Optical Imaging on an object hidden in a chicken breast", oral presentation Texas Section APS spring meeting, 2007.

114. R.K. Pandey, P. Padmini, L.F. Deravi, N.N. Patil, P. Kale, J. Zhong, J. Dou, L. Navarrete, R. Schad, M. Shamsuzzoha, **C. O.Brien**, W.J. Geerts, "Magnetic-Semiconductors in Fe-Ti-Oxide Series and their Potential Applications", invited oral presentation at the 8th International Conference on Solid-State and IC Technology, October 23-24 2006, Shanghai, China.

115. **Joel Dunn**, Wilhelmus Geerts, Gregory Spencer, **Claude Garrett**, **Jett Hendrix**, Magnetic Reversal in NiFe Gratings, oral presentation at the TSAPS meeting Fall 2005, Houston.

116. **Jonathan Garrett**, Wilhelmus Geerts, A Measurement Setup to Study the Magnetostriction of Sputtered NiFe thin films, Fall 2004 meeting Texas Section of the American Physics Society, Baylor University, Waco, Texas, 2004.

117. **McDonald, James S**.; Martinez, Casey; **Radican, Kevin**; **Botello, Eric**; Koeck, Deborah C.; Donnelly, David; Geerts, Wilhelmus; Spencer, Gregory; Galloway, Heather C., "Reactive Ion Etching of SiC and SiCN using Tetrafluoroethane and Oxygen", Fall 2004 meeting Texas Section of the American Physics Society, Baylor University, Waco, Texas.

118. Sonny Garcia, **Hans-Willem ten Brinke**, Wilhelmus Geerts, A Scanning Magneto-Optical Kerr Microscope to study the Domain Pattern of Stressed Magnetic Thin Films, Fall 2004 meeting Texas Section of the American Physics Society, Baylor University, Waco, Texas.

119. Wendy Avila, Wilhelmus Geerts, A.K. Bandyopadhyay, Carlos Gutierrez, Haichun Yang, M. Levy, "Magnetic Characterization of Bi-YIG", Presented at the Spring Meeting of the Texas section of the Society of Physics Students, May 7 2003, San Marcos, TX.

120. **Jett Hendrix**, Wilhelmus Geerts, "Kerr Magnetometry on NiFe gratings", Oral Presentation at the Spring Meeting of the Texas section of the Society of Physics Students, May 7 2003, San Marcos, TX.

121. **Gabriel Monreal**, Mike Blanda, Wilhelmus Geerts, Greg Spencer, "3-angle Ellipsometric Thickness Measurement of 2 Novel Calixarene Electron Beam Negative Resists", Presented at the Spring Meeting of the Texas section of the Society of Physics Students, May 7 2003, San Marcos, TX.

122. **James McDonald**, **Kevin Radican**, Wilhelmus Geerts, Greg Spencer, David Donnelly, Heather Galloway, "Photolithography to Prepare Waveguides on low-k Dielectrics on SiC Underlayers", Presented at the Spring Meeting of the Texas section of the Society of Physics Students, May 8 2003, San Marcos, TX.

123. **Kevin P. Radican**, Deborah C. Koeck, Wilhelmus Geerts, Gregory Spencer, David Donnelly, Heather C. Galloway, "Microwave Characterization of Low-k Dielectric Thin Films using a Coplanar Waveguide", Presented at the National Spring Meeting of the American Physical Society, March 2003, Austin, TX.

124. Jacob Grimes, W. Geerts, A. Bandyopadhyay, Gutierrez, **K. Radican**, N. Rivera, **P. Holland**, J. Givens, Ted Oyama, "Optical Characterization of polished Mo2C foil", Presented at the national Spring Meeting of the American Physical Society, March 2003, Austin, TX.

125. **Claude Garrett**, Wilhelmus Geerts, Greg Spencer, Fabrication and Magnetic Properties of Patterned Thin NiFe-35% Films, oral presentation 2002 TSAPS spring meeting, Stephen F. Austin State University Nacogdoches, Texas.

126. **Claude Garrett**, **Patrick Holland**, Dustin Ragan, Wilhelmus J. Geerts, Archana Dubey, Steve Rios, Anup K. Bandyopadhyay, "The Magnetic Hysteresis of NiFe-31% Films as a Function of an Applied Isotropic In-plane Stress", Presented at the Magnetism and Magnetic Materials Conference, November 2002, Tampa, FL.

127. Wim Geerts, "Ellipsometry for contamination control or chemical metrology?", Workshop on Semiconductor Contamination Control and Chemical Metrology, October 2002, San Marcos, TX.

128. Brenda K. Wilson, Archana Dubey, Wilhelmus Geerts, "Magnetic Domain imaging using the Bitter Colloid Technique", 2001 Annual meeting Texas Academy of Science, March 1-3, Southwest Texas State University.

129. **Brian Donehew**, Wilhelmus Geerts, "Investigating the MO Kerr effect of Metals under high pressure", 2001 Annual meeting Texas Academy of Science, March 1-3, Southwest Texas State University.

130. **Brian Donehew**, Wilhelmus Geerts, Experimental Setup to measure the Magneto-Optical Kerr Effect under High Pressure", 2001-Fall Texas Section SPS meeting, Fort-Worth, TX.

131. Chris Brown, Wilhelmus J. Geerts, Spreading Resistance Probe Measurements, Fall-2001 meeting Texas section of SPS, Fort Worth.

132. *Ena S. Bichsel*, Wilhelmus J. Geerts, Magnetic Domain Imaging of Floppy disks and Credit-cards with copying toner, national AAPT winter-meeting, Kissimi (FL) January 2000.

133. *Ena S. Bichsel*, Magnetic Domain Imaging, State Conference of the Texas Middle School Association, Austin, February 25, 2000, 2:00-2:45.

134. *Ena S. Bichsel*, Wilhelmus J. Geerts, Visualizing Recorded Bit Patterns on Credit Cards and Floppy Disks using Copying Toner, Texas Section AAPT spring-meeting, College Station March 2000.

135. **Patrick Holland**, Archana Dubey, Wilhelmus J. Geerts, Magnetic Hysteresis Measurements of thin films under isotropic stress, Texas Section APS fall-meeting, Houston, Rice University, October 2000.

136. Philip Smith, Christie Weidner, Gene Stouder, Wilhelmus J. Geerts, Microstructuring Magnetic Thin Films Using a Converted Optical Microscope, Texas Section SPS spring-meeting, College Station March 2000.

137. **Charlie Watts**, **Anita Acevedo**, Wilhelmus J. Geerts, Biaxial Kerr Magnetometry on Fe/Al_2O_3 Multilayers, Texas Section APS spring-meeting, College Station March 2000.

138. *Andrew Shuetze* and Wilhelmus J. Geerts, "Four Probe Sheet Resistivity Measurements of a Water Model", Presented at the Spring Meeting of the Texas Section of the American Association of Physics Teachers, March 4-6, 1999, Tyler, TX.

139. Wilhelmus J. Geerts, "A new probe to perform magneto-optical Kerr measurements on thin films and multilayers", Presented at the APS National Spring Meeting, 1998, Los Angeles, CA.

2. Invited Talks, Lectures, and Presentations:

NOTE: undergraduate students are underlined, **graduate students** are printed in bold; *high school teachers* are italicized and underlined.

140. Wilhelmus Geerts, "Characterization of Magnetic Materials using biaxial vibrating sample magnetometry", MSEC seminar Texas State University San Marcos, October 18, 2019.

141. Wilhelmus Geerts, "Novel Transition metal oxides for application in Resistive RAM", September 20 2019, ST. Edwards University, Institute of Interdisciplinary Science, Austin, Texas.

142. Wilhelmus Geerts, "Novel transition metal oxides for application in non-volatile Resistive RAM memory chips", presentation to San Marcos chapter of SPS, spring 2016.

143. Wilhelmus Geerts, "Novel transition metal oxides for application in non-volatile Resistive RAM memory chips", Physics Colloquium Texas State, October 2015.

144. Wilhelmus J. Geerts, Hanu Arava, Michael Robinson, Elizabeth Le Blanc, Maclyn Compton, Nelson Simpson, Yubo Cui, "Optical Properties of Permalloy Oxide thin films in the Infrared (IR), Trinity University, San Antonio, February 2015 (invited).

145. Wilhelmus J. Geerts, Hanu Arava, Michael Robinson, Elizabeth Le Blanc, **Maclyn Compton**, **Nelson Simpson**, **Yubo Cui**, "Optical Properties of Permalloy Oxide Grown by Reactive RF Magnetron Sputtering, Baylor University, Waco November 2014 (invited).

146. Wilhelmus J. Geerts, "Electrical and Optical Properties of Permalloy Oxide grown by dual ion beam sputtering", Texas Tech University, Lubbock May 2014 (invited).

147. Wilhelmus J. Geerts, "Magneto-elastic and Magneto-plastic properties of thin ferromagnetic thin films", University of Texas San Antonio, August 2009 (invited).

148. Wilhelmus Geerts, "Perpendicular Magnetic Recording: The influence of the surface", Presented at the Department of Physics, April 3 2008, Sam Houston State University, Huntsville, TX (invited).

149. Wilhelmus Geerts, **Elaine Tennant**, Joseph Rosen, "Optical Imaging of objects hidden in a scattering medium", NAC presentation from Winstead's Austin Office, April 24, 2006 (invited).

150. Joseph Rosen, Wilhelmus J. Geerts, Zvi Yaniv, "Reconstruction of objects hidden in scattering medium using MLA, presentation at Applied Nanotech Incorporation, Austin, Texas, Spring 2006 (invited).

151. Wilhelmus J. Geerts, "Magnetic Recording Materials", Presented at San Antonio Community College, Spring, 2001, San Antonio, TX (Bridges Program).

152. Wilhelmus J. Geerts, "On the surface properties of Co-Cr films", Presented at the Department of Physics, 1998, Trinity University, San Antonio, TX (invited).

3. Consultancies:

N/A

4. Workshops:

1. Cleanroom Photovoltaic Workshop for a group of 18 students of Taylor High School June 14 and 15, 2012 together with Dr. Larry Larson, Dr. Greg Spencer, and Jason Wagner, in collaboration with Lonny Stern of Skillpoint Alliance, Austin.
2. TSAPS Short tutorial on photovoltaics: 3 hour state wide workshop taught at the Fall-2009 TSAPS meeting together with Dr. Larry Larson and Dr. Byounghak Lee.
3. MicroFab/Electronics: a one-day workshop that illustrates how subjects taught in chemistry, physics, mathematics, and technology high school classes work together in a complex manufacturing process, Taught in two sections to the AP Physics students of San Marcos High School (together with Dr. Greg Spencer and Greg Kidd).
4. Robot Workshop Edgewood School district San Antonio (together with Greg Hall in collaboration with Andrew Schuetze).

5. Other:

N/A

C. Grants and Contracts

1a. Pending proposals (2/12/2022):

1b. Funded External Grants and Contracts (indicated amounts include indirect cost but not cost-share):

1. PI on "MRI: Development of Full Vector Vibrating Sample Magnetometry for Materials Research and Education", (Wim Geerts, Jitendra Tate, Maggie Chen, Ravi Droopad, Chris Rhodes), 09/01/2022 – 08/31/2024, NSF-MRI ($121,364).

2. Senior investigator on (PI Dr. Maggie Chen) "Acquisition of Wide Frequency Band Characterization System for Electronic Devices, Antennas, and Intelligent Materials", 08/01/2022-07/31/2023, HBCI/MI program Department of Army ($540,370).

3. Pi on "High-Bandgap Hybrid Perovskites for Efficient Underwater Solar Cells", 07/01/2019 – 06/30/2022 (former PI: Dr. Alex Zakhidov).

4. Senior investigator on "Manufacturing 27%-efficient perovskite/silicon tandem photovoltaic cells using slot die coating at > 5,000 wafers per hour", (SETO-DOE, Greg Gibson, (CTO FAS holdings group, Dallas), former senior investigator: Dr. Alex Zakhidov), $355,000, October 2021 – September 2024.

5. Senior investigator on "STTR Phase II: Scalable fabrication of stable perovskite solar panels using slot-die coating technique", (NSF-STTR Phase II, Greg Gibson (CTO FAS holdings group, Dallas), former senior investigator: Dr. Alex Zakhidov), $225,000, April 2020-March 2022.

6. "Collaborative Research: Levering a Solvent Toolkit for Doping and Characterizing Hybrid Perovskite Solar Cells", (NSF, PI, former PI: Dr. Alex Zakhidov), $200,512, Spring 2019-May 2022.

7. Senior investigator on "Enhanced Optical, Electrical and Magnetic Measurement capabilities for Materials and Device Studies in Research and Education, $287,777, DOD Instrumentation grant, HBCU/MI Department of Army, Dr. Nikoleta Theodoropoulou, August 2021-July 2023.

8. Co-Pi on: "Ultrawide Bandgap Hetero-structures: Growth Characterization and Modeling", together with Dr. Ravi Droopad (PI) and Dr. Luisa Scolfaro (co-PI), HBCU/MI grant W911NF2010298, $656,949.-, 31 July 2020 to 30 July 2023.

9. PI on "MRI: Vibrating Magnetometer for Materials Research and Education", NSF MRI acquisition proposal, ($225,330), September 15 2017 through August 31 2021, PI together with Drs. Chris Rhodes, Ravi Droopad, Nikoleta Theodoropoulou, Maggie Chen, Greg Spencer, Jitendra Tate, Hui Fang, Miha Zakotnik, and Alex Bevan.

10. PI on URAP/HSAP -2019 request in support of Optical and Electrical Characterization of NiFe-oxide thin films Research, PI together with Dr. Luisa Scolfaro (Army Research Office) ($7,500) summer 2019.

11. PI on URAP/HSAP -2018 request in support of Optical and Electrical Characterization of NiFe-oxide thin films Research, PI together with Dr. Luisa Scolfaro (Army Research Office) ($7,500), summer 2018.

12. Senior investigator (contributed one scientific topic) on " Integrated Characterization of Electronic Devices and Materials for Research and Education" (70479-RT-REP), DOD proposal of Dr. Jian Li ($332,086), Fall 2017.

13. PI on URAP/HSAP -2017 request in support of Optical and Electrical Characterization of NiFe-oxide thin films Research, PI together with Dr. Luisa Scolfaro (Army Research Office) ($6,000), summer 2017.

14. Senior investigator (contributed one scientific topic) on the instrumentation grant of Dr. Stefan Zollner (PI) from New Mexico State University, "Acquisition of a Fourier- Transform Infrared Ellipsometer with Cryostat for Research and Education" (68840-RT-REP), Army Research Office, 06/02/2016 – 06/01/2017 ($274,363).

15. Senior investigator (contributed one scientific topic) on instrumentation grant of Dr. Alex Zakhidov (PI) from Texas State University, "Scanning Probe Microscope for Materials Research and Education" (68869-RT-REP), Army Research Office, 06/02/2016 – 06/01/2017, ($358,558.-)

16. PI on HSAP and URAP extension for Electric and Optical Properties NiFe-oxide thin films, PI together with Dr. Luisa Scolfaro, Department of Defense (Army Research Office), ($6,000), summer 2016.

17. "Optical and Electrical Properties of NiFe-oxide Thin Films, PI together with Dr. Luisa Scolfaro, Department of Defense (Army Research Office) Research and Education Program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI), $387,691.- (09/2015-09/2019).

18. Two white papers submitted to TI resulted in an equipment donation of two LightCrafters, "DMD based Light Pattern Illuminator for Topography Monitor" and "DMD based Scanning Magneto-Optical Kerr microscope for studies of the magneto-plastic properties of thin ferromagnetic films", $1195.- (together with Dr. Vishu Visnawathan, EE-TxState) (2012-2013).

19. "Chemistry and Physics of n-Doping Electroactive Polymers: Computationally Directed Synthesis for Improved Performance.", Research Corporation 10775, Cottrell College Science Award, co-PI together with Jennifer Irvin (Chem) and Byounghak Lee (Phys), $100,000, (2010-2013).

20. "MRI: Development of a Complex Topography Photolithography Tool for Micro-Patterning on Non-Flat Substrates", NSF-MRI 0923506 grant, $99,263 (PI together with Dan Tamir (CS) and Kumar Pandey (EE)), (2010-2013).

21. "Measurements of semiconductors in support of MPA-11 organic materials", Contract for Los Alamos National Laboratory, Summer 2008, $32,613.

22. "Inter-American Materials Collaboration: Modeling and Testing the Effects of Texture and Plastic Deformation on the Magnetic Properties of Polycrystalline Ferromagnetic Materials", $28,000, (NSF, co-PI together with Martin Sablik), Fall 2006.

23. "Effects of Athermal Annealing on High-k Gate stacked MosCAPs and MosFets", $100,000 (THECB-ARP, co-PI together with Dave Donnelly and Jack Lee), 2006-2007.

24. "NOISE2: Real time Noninvasive Optical Imaging by Speckle Ensemble (=NOISE) on biological tissues", $20,000, (PI: contract with Advanced Incubator Inc. Austin).

25. "Solar simulator equipment proposal", 2004, estimated value equipment 10K, DOE, ERLE program (PI).

26. "Delsa Particle Analyzer", 2004, estimated value equipment 10K, DOE, ERLE program (PI).

27. "Microscopic analysis of magneto-resistive sensors for probe recording", (together with Cock Lodder and Leon Abelmann), 7,687, STW-werkbezoek-regeling (PI, Dutch NSF).

28. "Effects of Chemical Mechanical Planarization on Electrical Properties of Low-k Materials", $130,000, THECB-ARP, (co-PI together with Heather Galloway), Fall 2001.

29. "Research of the Optical Properties of Mo_2C", $2,160, (PI: contract with Innovative Materials Group Inc., 1 Linquist, San Antonio, TX 78248) Summer 2002.

30. Travel and lodging grant, NHMFL, Summer 2001.

31. "The Elasto-Magneto-Optical Properties of Nickel and NiFe Alloys", $37,878, Research Corporation, Spring 1999 – Fall 2003.

32. Travel and lodging grant, NHMFL, Summer 1998.

2. Submitted, but not Funded, External Grants and Contracts:

Available upon request.

3. Funded Internal Grants and Contracts:

1. "Materials with intelligence: Magnetic Field Assisted Additive Manufacturing", $16,000, Research Enhancement grant TxState University (together with Jitendra Tate (Manufacturing Engineering) and Maggie Yihong Chen (Electrical Engineering), January 2021, May 2022.
2. "An Augmented Reality Platform Technology for Eye Tracking-Based Human State Assessment", Henry Griffith, Wim Geerts, Oleg Komogortsev, iState, $10,000.
3. "Optical and Electrical Properties of Permalloy Oxide", $13,443.-, Research Enhancement grant (together with Dr. Luisa Scolfaro), 2015.

4. White paper to Dr. Covington resulted in an TxState insurance for an equipment loan for 2 or 2 years from Angelo State University. The Horiba spectroscopic ellipsometer complements the Woollam spectroscopic ellipsometer in the MBE lab as it allows for measurements in the NIR (together with Dr. Toni Sauncy, Angelo State University).
5. Half year supplement for sabbatical at LANL 2008-2009.
6. "Lehman internship Daniel Palmer", Summer 2007.
7. "Laser Beam Shaping using Imaging Techniques", $16,000, Research Enhancement, 2008, (together with Dan Tamir (CS)).
8. "Unidirectional Doping of Silicon Particles for Solar Cells", $7,400, TxState Research Enhancement Program, Spring 2005-Summer 2006.
9. "Device and Process Simulator for semiconductor education and research", $14,000, 2005, (9K from line-item budget Prof. Gene Stouder, and 5K from Department of Physics).
10. "A Deep Level Transient Spectroscopy Setup for the characterization of Semiconductor Materials and Devices", $29,910, 2005, TxState Semiconductor Manufacturing Education and Research (line-item budget Prof. Gene Stouder).
11. "Calibration Sources and Remote Input Coupler for CV setup", $6,325, 2005, TxState Semiconductor Manufacturing Education and Research (line-item budget Prof. Gene Stouder).
12. "Hall card, switching unit, nanovoltmeter, and current source for Van der Pauw electric transport measurement", 2005, $13,142, TxState Semiconductor Manufacturing Education and Research, (line-item budget Prof. Gene Stouder).
13. "Influence of Stress on Magnetic Sub-Micron Structures", $8,000, TxState Research Enhancement Program, 2000.
14. "Construction of an Ellipsometer suitable for Magneto-Optical Spectroscopy", $8,000, TxState Research Enhancement Program, 1999.
15. "Ellipsometry and Kerr Spectroscopy", $4,000, TxState College of Science, 1998.

4. Submitted, but not Funded, Internal Grants and Contracts:

Available upon request

D. Fellowships, Awards, Honors:

1. Student under my co-supervision that received a presentation award at the TxSTate REU-2022 poster presentation event: Chris Selsor.
2. Student under my co-supervision that received a presentation award at SAMPE-2020 conference: Maria Camila Belduque.
3. 2020 Alumni Teaching award of honor (together with all other TxState Spring 2020 instructors).
4. Student under my supervision that received a presentation award at the TSAPS Fall-2017 meeting in Dallas: Brian Collier.
5. Student under my supervision that earned honorable mention cash prize at undergraduate research conference at Texas State (Spring 2015): Josh Thompson.

6. Student under my supervision that received a Thesis Research Support Fellowship of the Graduate College: Maclyn Compton, Yubo Cui, Fidele Twagirayezu, Ahad Talukder.
7. Student under my supervision that received an honorable mention for her poster at the Wise-2013 conference: Elizabeth Leblanc.
8. 2012: Outstanding and exceptional referee for papers submitted to and/or published in Review of Scientific Instruments during 2011.
9. Sigma Pi Sigma Scholarship award.
10. Students under my supervision that received the first prize poster presentation at Texas State Undergraduate Research Conference and Mitte honors thesis form, Amanda Gregory, Kyle Smith, and Clayton Moore.
11. Finalist for the Presidential Award for Excellence in Scholarly Activities (2003)
12. Students under my supervision that received a prize for their poster presentation at TS/4CS-APS Fall meeting in October 2008: Amanda Gregory, Kyle Smith, and Clayton Moore.
13. Students under my supervision that received poster awards from the Central Texas Workshop on Semiconductor Contamination Control and Chemical Metrology: Jett Hendrix, Jacob Grimes, Fall 2002.
14. College of Science Bonus Award, 2000.
15. Student under my supervision that received a TSAPS Travel Award: Claude Garrett. Jonathan Garrett.
16. Humboldt Research Fellowship, 1995.
17. STA Fellowship, 1993 - 1995.
18. Best poster presentation, Magnetic Recording Session, International Conference on Magnetism, 1991, Edinburgh, UK.

IV. SERVICE

A. University:

1. Member Search Committee dean COSE (2022-2023).
2. Member Summative Review committee dean Hailey (2022).
3. Library Committee MSEC (2021-current).
4. Chair graduate college scholarship committee (2021-current).
5. Participant Focus Group discussion "Role of funded undergraduate research fellowship program on undergraduate retention in the College of Science and Engineering", March 2, 2020.
6. Chair curriculum committee COSE (2009-2016)
7. Member College Review group COSE (2005, 2008, 2010, 2011, 2022)
8. Representative Research Enhancement program for physics: (2013 ,2018, 2019, 2022)
9. External member faculty search committee (Technology, Engineering (2x))
10. Chair chair-search committee Physics (2006)
11. Author self-study department of Physics (2010-2011)
12. Member search committee of the director of the School of Engineering (2006)
13. Member scholarship committee graduate college (2017-current)
14. Member graduate scholarship committee College of Science and Engineering (2018-2021)
15. Member undergraduate scholarship committee College of Science and Engineering (2017-2019)

B. Departmental:

1. Chair Search committee for physics tenure-line faculty (Fall-2022).
2. Guest lecture Phys 2150, Resume Building; guest lecture PHYS5200 scholarships (2020).
3. Chair Scholarship Committee (2017-current).
4. Physics Alumni director (2017-current).
5. Member Personnel committee Physics (2005-current).
6. Member graduate committee Physics (2017-current).
7. Organizer to secure external talks for our graduate faculty at other institutes (2018-current).
8. Departmental representative curriculum committee (2005-2016)
9. Graduate Advisor (2013-2017) Physics responsible for recruiting, advising, comprehensive exams, and contact with graduate college.
10. Chair faculty-search committee (2010).
11. Member faculty search committees: (2002, 2006, 2007,2009, 2010, 2014, 2017).
12. Bobcat days: (substitute for Dave).
13. Member LA prep (when teaching introductory physics).

C. Community:

1. Participant Panel Discussion Bowie High-school, February 14, 2020, "How to prepare Bowie Highschool graduates better for College" (together with Dr. Hunter Close).
2. Physics demos STEAM and STEM night Baranoff elementary Austin (2013-current).
3. Physics demos Math and Science high Menchaca elementary Austin (2020).
4. Outreach to Dripping Springs High School (2017).

5. Workshops for high school students: Cleanroom photovoltaics for Taylor high school (2012), Robotics for Edgewood Academy (2003), Lab-Fab course for San Marcos high school (2000).
6. Organizer Science pep-rallies at the Math and Science Academy in San Antonio (1999, 2000, 2001).
7. Member of the San Marcos High School Academies Advisory Board (2001).

D. Professional:

1. Graduate fair APS, March 2021.
2. Session-chair additive manufacturing session SAMPE-2021.
3. Reviewer for various scientific journals (1997-current).
4. Reviewer for various programs including: NSF-reviewer (2023), NSF-reviewer (2022), NSF reviewer (2021), Reviewer NSF-MRI program (2020), Panel reviewer DOE SBIR program, Reviewer DOE (2015), Reviewer BPA Technology Innovation program (2015), External reviewer for DOE Photovoltaic Study (2011), NSF NER (2007), NSF Nanomanufacturing panel (2008), DOE panel review for Advanced Energy Manufacturing Tax Credit program (2009, 2010), RIDPP (2004).
5. Presenter at Physics colloquia at other institutes (11 talks from 1998-current).
6. Active participant in TSAPS meetings including member of the local organization committee, judge, session chair (1998-current).
7. Executive committee TSAPS 2008-2012 (chair-line).
8. TSAPS newsletter and TSAPS website editor (including Hyer award pages).
9. Executive committee GIMS-APS 2011-2014 (chair-line).
10. GIMS newsletter and GIMS website editor (including Keithley award pages).
11. Program committee member APS March meeting Boston-2012: organized 10 sessions and two symposia at APS-March meeting.
12. Advising and recruiting graduate fair APS march meetings (2012, 2014).
13. Member organization Committee TSAPS Fall-2009 meeting.
14. Member organization Committee TSAPS Fall-2008 meeting.
15. Member nanotechnology STATT Technology Workgroup of the State of Texas (2005).

E. Organizations:

1. Honorary:

N/A

2. Professional:

Member American Physical Society
Member of GIMS

F. Services Honors and Awards:

1. 2012: Recognized for service at departmental and college level.
2. 2011: Recognized for service at department and college level.
3. 2007: Dean Nominee for the Presidential Award for Excellence in Service.