SARATH WITANACHCHI

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Present Rank: Professor & Chair

Education:

Ph.D.	in Electrical Engineering	Advisor: Prof. David T. Shaw, State University of New York at Buffalo	1990
MS	in Physics	State University of New York at Buffalo	1984
BS	in Natural Science	University of Colombo, Sri Lanka	1978

Employment:

Aug. 2019-Present	Professor & Chair, Department of Physics, University of South Florida
Aug. 2015-Aug. 2019	Professor, Department of Physics, University of South Florida
Aug. 2009-2015	Professor & Associate Chair, Department of Physics, University of South Florida
Aug. 2008-Aug. 2009	Professor, Department of Physics, University of South Florida
Aug. 1995-Aug. 2008	Associate Professor, Department of Physics, University of South Florida
Aug. 1990-Aug.1995	Assistant Professor, Department of Physics, University of South Florida
Aug. 1989-July 1990	Visiting Assistant Professor, Department of Electrical Engineering State Univ. of New York at Buffalo
Aug. 1988-Aug.1989	Research Associate, Institute on Superconductivity State University of New York at Buffalo

Grants and Awards:

Fulbright Specialist Award, 2015-2016, Institute of International Education, US Department of State, Completed a project at University of Dar Es Salaam, Tanzania.

USF Presidential Excellence Award (2003)

US Patent # 5,660,746 for "Dual-Laser Process for Film Deposition".

US Patent #4,874,741 for "Plasma Assisted Laser Deposition of Superconducting Films"

US Patent # 6,697,557 B2: "Two-dimensional Optical Filter with High Spectral, Temporal, and Spatial Resolution"

US Patent # 20080226836: "Clathrate compounds and method of manufacturing"

US Patent pending: “Electroluminescent light source with high emission intensity”

US Patent pending: “Photovoltaic-Thermoelectric hybrid device for enhanced renewable energy harvesting”

Federal Funding (NSF, DOE and DOD):

1. NSF, Grant # ECCS-2029800 , **$449,992** (9/15/2020-8/31/2023), “Unveiling intrinsic functionality of two-dimensional organic-inorganic ferroelectrics for energy storing/converting devices: integrated computational-experimental approach”

2. NSF, Grant # OISE-1826980, **$299,700** (9/1/2018-8/31/2023), International Research Experience for Students (IRES), “USA-Botswana collaborative research towards portable power generation in rural Africa,"

3. NSF, Grant # DMR-1263066, **$380,000** (4/15/2016-4/14/2022). “REU Site in Applied Physics at University of South Florida”

4. NSF, Grant # DMR-1263066, **$315,000** (4/15/2013-4/14/2016). “REU Site in Applied Physics at University of South Florida”

5. DOD, Grant # W81XWH-07-1-0708, **$3,532,000** (8/20/07-9/19/15), “Design, Fabrication, Characterization and modeling of Integrated Functional Materials”

6. DOE, **$495,457** (8/15/04-8/14/08). “A Fundamental Study of Bulk and Thin Film Type II Clathrate Materials”

7. NSF, DMII-Nanomanufacturing: **$378,972** (9/1/2002-8/31/2005). “Pulsed Thermal Excitation of Self-Assembled Nanotemplates for Manufacturing Dimensionally Controlled Nanostructured Films.

8. NSF International Grant # INT-0080571, **$23,320** (8/15/2000-7/31/2002), “US-Sri Lanka cooperative research: Low-cost fabrication of thin film solar cells.

9. NSF/DOE Grant # DMI-0078917, **$347,431**, (9/1/2000-8/31/2003), “ A Fundamental study of laser-triggered hollow-cathode transient plasma for a multi-component film manufacturing process”

10. NSF Grant # DMI-9978738, **$365,924** (8/15/1999-8/14/2002), “ In-situ fabrication of diamond structures for microelectromechanical systems (MEMS) using a novel pulsed laser process”

11. DOE, DE-FG02-96ER12199, **$368,541** (8/15/96 to 8/14/99). "Experimental and Theoretical Investigation of Dual-laser Ablation for Stoichiometric Large-area Multicomponent CuInGaSe2 Film Growth".

12. NSF, Grant # DMI-9622114, **$258,735** (12/1/96 to 11/30/99), "Pulsed Laser Ablation for Manufacturing: A Novel Dual-laser Film Growth Process".

13. NSF Research Initiation Award, **$100,000** (Aug. 1993-Aug. 1996)

Professional Societies:

Charter Members, Academy of Inventors at USF
Materials Research Society (MRS)

Publications

102 refereed papers and 135 conference presentations

List of Publications

Publications

1. A. Chanda, D. Rani, D. DeTellem, N. Alzahrani, D. A. Arena, S. Witanachchi, R. Chatterjee, M.H. Phan, and H. Srikanth, "Large thermo-spin effects in Heusler alloy-based spin-gapless semiconductor thin films", ACS Applied Materials and Interfaces 2023;15:53697

2. C.M. Hung, D.T.X. Dang, A. Chanda, D. Detellem, N. Alzahrani, N. Kapuruge, Yen T. H. Pham, M.Z. Liu, D. Zhou, H.R. Gutierrez, D.A. Arena, M. Terrones, S. Witanachchi, L.M. Woods, H. Srikanth, and M.H. Phan, " Enhanced Magnetism and Anomalous Hall Transport through Two-dimensional Tungsten Disulphide Interfaces", Nanomaterials 2023;13:771

3. M.-H. Phan, V. Kalappattil, V. O. Jimenez, Y. Thi Hai Pham, N. W. Y. A. Y. Mudiyanselage, D. Detellem, C.-M. Hung, S. Witanachchi, A. Chanda, and T. Eggers, "Exchange Bias and Interface-Related Effects in Two-Dimensional van Der Waals Magnetic Heterostructures: Open Questions and Perspectives", J Alloys Compd 937, 168375 (2023).

4. B. Muchharla, R. P. Madhogaria, D. Detellem, C. M. Hung, A. Chanda, N. W. Y. A. Y. Mudiyanselage, A. T. Duong, M. T. Trinh, S. Witanachchi, and M. H. Phan, "Intergranular Spin Dependent Tunneling Dominated Magnetoresistance in Helimagnetic Manganese Phosphide Thin Films", Nanomaterials 13, (2023).

5. Derick DeTellem*, Nivarthana WYAY Mudiyanselage, Richa Pokharel Madhogaria, Sarath Witanachchi, and Manh-Huong Phan, "Enhanced Ferromagnetic Interaction at MnP/Fe Interface: A Bloch Law Based Study for Temperature and Magnetic Field Evolution of Magnetization", To appear in Physica B: Physics of Condensed Matter (2022).

6. Amit Chanda, Derick DeTellem, Yen Thi Hai Pham, Jenae E. Shoup, Anh Tuan Duong, Raja Das, Sunglae Cho, Dmitri V. Voronine, M. Tuan Trinh, Dario A. Arena, Sarath Witanachchi, Hariharan Srikanth, and Manh-Huong Phan, "Spin Seebeck Effect in Iron Oxide Thin Films: Effects of Phase Transition, Phase Coexistence, And Surface Magnetism", ACS Appl. Mater. Interfaces, **14** (11), 13468–13479 (2022).

7. P. S. Ghosh, D. DeTellem, J. Ren, S. Witanachchi, S. Ma, S. Lisenkov, and I. Ponomareva Unusual Properties of Hydrogen-Bonded Ferroelectrics: The Case of Cobalt Formate *Phys. Rev. Lett.* ***128****, 077601 (2022)*.

8. C.M. Hung, R.P. Madhogaria, B. Muchharla, E.M. Clements, A.T. Duong, R. Das, P.T. Huy, S.L. Cho, S. Witanachchi, H. Srikanth, and M.H. Phan, "MnP films with desired magnetic, magnetocaloric and thermoelectric properties for a perspective magneto-thermo-electric cooling device". Physica Status Solidi A: Applications and Materials Science Volume219, Issue3 (2022).

9. Richa Pokharel Madhogaria , Chang-Ming Hung , Baleeswaraiah Muchharla , Anh Tuan Duong, Raja Das, Pham Thanh Huy, Sunglae Cho , Sarath Witanachchi , Hariharan Srikanth, and Manh-Huong Phan, "Strain-modulated helimagnetism and emergent magnetic phase diagrams in highly crystalline MnP nanorod films", Physical Review B **103**, 184423 (2021).

10. Domingo J. Mateo-Feliciano, Derick DeTellem, Pritish Mukherjee & Sarath Witanachchi, "Zinc oxide nanocolumns grown on self-assembled silica nanosphere monolayer templates", Journal of Materials Research Vol. **36**, pages361–367 (2021).

11. Daniel J. Denmark, Robert H. Hyde, Charlotte Gladney, Manh-Huong Phan, Kirpal S. Bisht, Hariharan Srikanth, Pritish Mukherjee & Sarath Witanachchi, "Photopolymerization-based synthesis of iron oxide nanoparticle embedded PNIPAM nanogels for biomedical applications", Drug Delivery, 2017 Vol. 24 (1), 1317–1324.

12. Devajyoti Mukherjee, Mahesh Hordagoda, David Pesquera, Dipankar Ghosh, Jacob L. Jones, Pritish Mukherjee, and Sarath Witanachchi, "Enhanced ferroelectric polarization in epitaxial (Pb1−xLax)(Zr0.52Ti0.48)O3 thin films due to low La doping", Phy. Rev. B 95, 174304 (2017)

13. D. J. Denmark, J. Bradley, D. Mukherjee, J. Alonso, S. Shakespeare, N. Bernal, M. H. Phan, H. Srikanth, S. Witanachchi and P. Mukherjee, "Remote triggering of thermoresponsive PNIPAM by iron oxide nanoparticles", Royal Society of Chemistry Advances, 6, 5641 (2016)

14. Chaminda Hettiarachchi, Nicholas Valdes, Pritish Mukherjee and Sarath Witanachchi*, "A Novel Single-Step Growth Process for the Deposition of CH3NH3PbI3-xClx Perovskite Films from CH3NH3Cl and PbI2 Precursors", Journal of Materials Science and Engineering A, Volume 6, Number 5, Sep.-Oct. 2016.

15. D. Mukherjee, S. Witanachchi, P. Mukherjee, “Laser ablation for multiferroic heterostructures”, Laser Ablation: Fundamentals, Methods, and Applications”, Chapter 3, p45, Edit. Christoph Gerhard, Stephan Wieneky, and Wolfgang Vilo, Nova publishers, NY 2015.

16. D. Mukherjee, M. Hordagoda, P. Lampen, M. H. Phan, H. Srikanth, S. Witanachchi, and P. Mukherjee, “Simultaneous enhancements of polarization and magnetization in epitaxial $Pb(Zr_{0.52}Ti_{0.48})O_3/La_{0.7}Sr_{0.3}MnO_3$ multiferroic heterostructures enabled by ultrathin $CoFe_2O_4$ sandwich- layers”, ***Physical Review B*** 91, 054419 (2015).

17. D. Mukherjee, A. Datta, C. Kons, M. Hordagoda, S. Witanachchi and P. Mukherjee, “Intrinsic Anomalous Ferroelectricity in Vertically-Aligned $LiNbO_3$-type $ZnSnO_3$ Hybrid Nanoparticle-Nanowire Arrays”, ***Applied Physics Letters*** 105, 212903 (2014).

18. A. Datta, D. Mukherjee, C. Kons, S. Witanachchi and P. Mukherjee, “Evidence of Superior Ferroelectricity in Structurally Welded $ZnSnO_3$ Nanowire Arrays”, ***Small*** 10, 4093 (2014).

19. D. Mukherjee, J. Devkota, A. Ruiz, S. Witanachchi, P. Mukherjee, H. Srikanth, and M.H. Phan “Impact of coating amorphous and crystalline cobalt ferrite films on the magneto-impedance response of a soft ferromagnetic amorphous ribbon”, ***Journal of Applied Physics*** 116, 123912 (2014).

20. A. Datta, D. Mukherjee, S. Witanachchi and P. Mukherjee, "On-the-surface photoconductive response of pelletized thin In_2S_3 nanosheets", ***Materials Research Bulletin*** 55, 176-181 (2014).

21. A. Datta, D. Mukherjee, S. Witanachchi and P. Mukherjee, “Hierarchically-Ordered Nano-Heterostructured PZT Thin Films with Enhanced Ferroelectric Properties”, Advanced Functional Materials **24**, 2638-2647 (2014).

22. D. Mukherjee, M. Hordagoda, P. Lampen, M. H. Phan, H. Srikanth, S. Witanachchi, and P. Mukherjee, "Enhanced magnetism and ferroelectricity in epitaxial $Pb(Zr_{0.52}Ti_{0.48})O_3/CoFe_2O_4/La_{0.7}Sr_{0.3}MnO_3$ multiferroic heterostructures grown using dual-laser ablation technique", Journal of Applied Physics **115**, 17D707 (2014).

23. D. Mukherjee, M. Hordagoda, R. Hyde, N. Bingham, H. Srikanth, S. Witanachchi, and P. Mukherjee, "Nano-columnar Interfaces and Enhanced Magnetic Coercivity in Preferentially-oriented Cobalt ferrite Thin Films grown using Oblique-angle Pulsed Laser Deposition", *ACS Applied Materials and Interfaces*, 5(15), 7450 (2013). DOI: http://dx.doi.org/10.1021/am401771z

24. A. Datta, D. Mukherjee, M. Hordagoda, S. Witanachchi, and P. Mukherjee, "Controlled Ti Seed Layer Assisted Growth and Field Emission Properties of $Pb(Zr_{0.52}Ti_{0.48})O_3$ Nanowire Arrays", *ACS Applied Materials and Interfaces*, 5(13), 6261 (2013). DOI: http://dx.doi.org/10.1021/am4012879

25. A. Ruiz, D. Mukherjee, J. Devkota, M. Hordagoda, S. Witanachchi, P. Mukherjee, H. Srikanth, and M.H. Phan, "Enhanced GMI effect in soft ferromagnetic amorphous ribbons with pulsed laser deposition of cobalt ferrite", *Journal of Applied Physics*, 113, 17A323 (2013). DOI: http://dx.doi.org/10.1063/1.4795802

26. A. Datta, D. Mukherjee, S. Witanachchi, and P. Mukherjee, "Low temperature synthesis, optical and photoconductance properties of nearly monodisperse thin In_2S_3 nanoplatelets", *RSC Advances* 3, 141 (2013). DOI: http://dx.doi.org/10.1039/C2RA22035K

27. A. Ruiz, D. Mukherjee, J. Devkota, M. Hordagoda, S. Witanachchi, P. Mukherjee, H. Srikanth, and M.H. Phan, "Enhanced GMI effect in soft ferromagnetic amorphous ribbons with pulsed laser deposition of cobalt ferrite", *Journal of Applied Physics*, 113, 17A323 (2013). DOI: http://dx.doi.org/10.1063/1.4795802

28. D. Mukherjee, N. Bingham, M. Hordagoda, M. H. Phan, H. Srikanth, S. Witanachchi, and P. Mukherjee, "Influence of microstructure and interfacial strain on the magnetic properties of epitaxial $Mn_3O_4/La_{0.7}Sr_{0.3}MnO_3$ layered-composite thin films", *Journal of Applied Physics* 112, 083910 (2012).

29. D. Mukherjee, M. Hordagoda, N. Bingham, H. Srikanth, P. Mukherjee and S. Witanachchi, "Challenges in the polycrystalline and epitaxial growth of stoichiometric $PbZr_{0.52}Ti_{0.48}O_3/La_{0.7}Sr_{0.3}MnO_3$ multiferroic heterostructures using pulsed laser ablation", *Journal of Applied Physics* 112, 064101 (2012).

30. D. Mukherjee, S. Witanachchi, R. Hyde, and P. Mukherjee, "Advantages of Dual-laser Ablation in the Growth of Multicomponent Thin Films", *American Institute of Physics Conference Proceedings* 1464, 325 (2012).

31. D. Mukherjee, R. Hyde, P. Mukherjee, H. Srikanth, and S. Witanachchi, "Role of dual-laser ablation in controlling the Pb depletion in epitaxial growth of $Pb(Zr_{0.52}Ti_{0.48})O_3$ thin films with enhanced surface quality and ferroelectric properties", *Journal of Applied Physics* 111, 064102 (2012).

32. D. Mukherjee, N. Bingham, M. –H. Phan, H. Srikanth, P. Mukherjee, and S. Witanachchi, "Ziz-zag interface and strain-influenced ferromagnetism in epitaxial Mn3O4/La0.7Sr0.3MnO3 thin films grown on SrTiO3 (100) substrates", J. Appl. Phys. **111**, 07D730 (2012).

33. D. Mukherjee, P. Mukherjee, H. Srikanth, and S. Witanachchi, "Carrier-mediated Interaction of Magnetic Moments in Oxygen Vacancy Controlled Epitaxial Mn doped ZnO Thin Films.", J. Appl. Phys. **111**, 07C318 (2012).

34. S. Witanachchi, M. Merlak, and P. Mahawela, "Nanotechnology Solutions to Greenhouse and Urban Agriculture", Technology and Innovation, **Vol. 12**, 1-9 (2012).

35. Dino Ferizovic´, Le Peng, Humara Sultana, Pritish Mukherjee, Sarath Witanachchi, Marı´a C. Tamargo, and Martı´n Mun˜oz, "Photoreflectance spectroscopy study of a strained-layer CdTe/ZnTe superlattice" *J. Appl. Phys.* **110**, 093703 (2011).

36. T. Wangensteen, T. Dhakal, M. Merlak, P. Mukherjee, M. H. Phan, S. Chandra, H. Srikanth, S. Witanachchi, "Growth of uniform ZnO nanoparticles by a microwave plasma process", *J. Alloys & Compounds* 509, 6859 (2011).

37. Ted Wangensteen, Marek Merlak, Tara Dhakal, Pritish Mukherjee, and Sarath Witanachchi (University of South Florida), Bed Poudel and Giri Joshi (GMZ Energy, Inc., Waltham, Massachusetts), "Growth of nanoparticulate films of $Ca_3Co_4O_9$ by a microwave plasma–assisted spray process" J. Mater. Res., Vol. 26 (15), 1940-1945 (2011).

38. Devajyoti Mukherjee, TaraDhakal, Manh-HuongPhan, HariharanSrikanth, Pritish Mukherjee, Sarath Witanachchi, "Role of crystal orientation on the magneticproperties of $CoFe_2O_4$ thin films grown on Si(100) and Al2O3 (0 001) substrates using pulsed laser deposition", *Physica B* 406, 2663–2668 (2011).

39. D. Mukherjee, T. Dhakal, R. Hyde, P. Mukherjee, H. Srikanth, and S. Witanachchi, "Role of Epitaxy in Controlling the Magnetic and Magnetostrictive Properties of Cobolt Ferrite-PZT Bilayers", *Journal of Physics D: Applied Physics,* Vol. 43, pg. 485001 (2010).

40. A. Chaturvedi, T.P. Dhakal, S. Witanachchi, A.T. Le, M.H. Phan, and H. Srikanth "Critical Length and Giant Magnetoimpedance in $Co_{69}Fe_{4.5}Ni_{1.5}Si_{10}B_{15}$ Amorphous Ribbons", *Materials Sci. Eng. B-Advanced Functional Solid-state Materials,* Vol. 172, No. 2, pg. 146-150 (2010).

41. T. Dhakal, D. Mukherjee, R. Hyde, P. Mukherjee, M.H. Phan, H. Srikanth, and S. Witanachchi. "Magnetic Anisotropy and Field-Switching in Cobalt Ferrite Thin Films Deposited by Pulsed Laser Ablation", *Journal of Applied Physics*, Vol. 107, No. 5, pg. 053914 1-6 (2010).

42. A. Chaturvedi, T.P. Dhakal, S. Witanachchi, A.T. Le, M.H. Phan, and H. Srikanth, "Correlation Between Magnetic Softness, Sample Surface and Magnetoimpedance in $Co_{69}Fe_{4.5}X_{1.5}Si_{10}B_{15}$ (X=Ni, Al, Cr) Amorphous Ribbons", *Physica B-Condensed Matter,* Vol. 405, No. 13, pg. 2836-2839 (2010).

43. D. Mukherjee, T. Dhakal, H. Srikanth, P. Mukherjee, and S. Witanachchi, "Evidence of Carrier-Mediated Magnetism in Mn-Doped ZnO Thin Films", *Physical Review B*, Vol. 81, No. 20, pg. 205202 (2010).

44. T. Dhakal, D. Mukherjee, P. Mukherjee, M. Phan, H. Srikanth, and S. Witanachchi, "Magnetic Anisotropy and Field-Switching in Cobalt Ferrite Thin Films Deposited by Pulsed Laser Ablation", *Journal of Applied Physics*, Vol. 107, No. 5, pg. 053914 (2010).

45. H. Verma, D. Mukherjee, S. Witanachchi, P. Mukherjee, and M. Batzill, "Comparative Study of ZnO Thin Film and Nano-Pillar Growth on YSZ(111) and Sapphire (0001) Substrates by Pulsed Laser Deposition", *Journal of Crystal Growth*, Vol. 312, pg 2012-2018 (2010).

46. D. Mukherjee, R. Hyde, T. Dhakal, H. Srikanth, P. Mukherjee, and S. Witanachchi. "Investigation of the Pb Depletion in Single and Dual Pulsed Laser Deposited Epitaxial PZT Thin Films and Their Structural Characterization", in *Multiferroic and Ferroelectric Materials* (A. Gruverman, C.J. Fennie, I. Kunishima, B. Noheda, T.W. Noh, eds.) 2009 *Materials Research Society Symposium Proceedings*, Vol. 1199E, pg. 1199-F03-37, Warrendale, PA (2010).

47. T. Dhakal, D. Mukherjee, R. Hyde, H. Srikanth, P. Mukherjee, and S. Witanachchi. "Enhancement in Ferroelectricity in V-Doped ZnO Thin Film Grown Using Laser Ablation", in *Multiferroic and Ferroelectric Materials* (A. Gruverman, C.J. Fennie, I. Kunishima, B. Noheda, T.W. Noh, ed.) 2009 *Materials Research Society Symposium Proceedings*, Vol. 1199E, pg. 1199-F03-44, Warrendale, PA (2010).

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49. G. Dedigamuwa, J. Lewis, J. Zhang, X. Jiang, P. Mukherjee, and S. Witanachchi, "Enhanced charge transport in surfactant-free PbSe quantum dot films grown by a laser-assisted spray process", Appl. Phys. Lett. **95**, 122107 (2009).

50. D. Mukherjee, T. Dhakal, H. Srikanth, P. Mukherjee, and S. Witanachchi, " Growth of ZnO:Mn/ZnO:V heterostructures and ferroelectric-ferromagnetic characterization", Proc. Materials Res. Soc. Symp. Vol 1161, 102-02 (2009).

51. S. Witanachchi, H. Abou Mourad, H. Srikanth, and P. Mukherjee, "Anomalous conductivity and positive magnetoresistance in FeSi- SiO_2-Si structures in the vicinity of a resistive transition", App. Phys. Letts. **90**, 052102 (2007).

52. S. Witanachchi, G. Dedigamuwa, and P. Mukherjee, "Laser-assisted spray pyrolysis for the growth of TiO_2 and Fe_2O_3 nanoparticle coatings", J. Materials Research **22**, 649 (2007).

53. R. Heindl, H. Srikanth, S. Witanachchi, P. Mukherjee , A. Heim, G. Matthews, S. Balachandran, S. Natarajan, and T. Weller, "Multifucnctional ferromagnetic-ferroelectric thin films for microwave applications", Appl. Phys. Letts. **90**, 252507 (2007).

54. R. Heindl, H. Srikanth, S. Witanachchi, P. Mukherjee , T. Weller, A. S.Tatarenko, G. Srinivasan**, "**Structure, magnetism and tunable microwave properties of pulsed laser deposition grown barium ferrite/barium strontium titanate bi-layer films", J. Appl. Physics **101**, 503 (2007).

55. R. Hyde, M. Beekman, D. Mukherjee, G. Nolas, P. Mukherjee, and S. Witanachchi, "Growth and characterization of germanium-based type I clathrate thin films deposited by pulsed laser ablation", Advances in Electronic Ceramics, Ceramic Engineering and Science Proceedings, Edited by: C. Randal, Hua-Tay Lin, K. Koumoto, and P. Clem, Vol. **28**, (2007).

56. G. S. Dedigamuwa, P. Mukherjee, H. Srikanth, and S. Witanachchi, "Growth and magnetic characterization of barium ferrite nanoparticle coatings", Advances in Electronic Ceramics, Ceramic Engineering and Science Proceedings, Edited by: C. Randal, Hua-Tay Lin, K. Koumoto, and P. Clem, Vol. **28**, (2007).

57. S. Witanachchi, H. Abou Mourad, and P. Mukherjee, "Anomalous metal-to-insulator transition in FeSi films deposited on SiO_2/Si substrates", J. Appl. Phys. **99**, 73710-73711-5 (2006).

58. Sarath Witanachchi, Robert Hyde, Matt Beekman, Devajyoti Mukherjee, Pritish Mukherjee, and George S. Nolas, "Synthesis and Characterization of Bulk and Thin Film Clathrates for Solid State Power Conversion Applications", IEEE Proceedings of the 25th International Conference on Thermoelectrics, Viena, Austria, Aug. 2006, p45.

59. S. Witanachchi, R. Hyde, H. S. Nagaraja, M. Beekman, G. S. Nolas, and P. Mukherjee, "Growth and Characterization of Germanium-based type I Clathrate Thin Films Deposited by Pulsed Laser Ablation", MRS Proceedings, April . 2006.

60. S. Witanachchi, P. Mahawela, P. Mukherjee, "Laser triggered hollow-cathode plasma process for film growth", Journal of Vacuum Science and Technology A **22**(5), 2061 (2004).

61. P. Mukherjee, Shudong Chen, J. B. Cuff, P. Sakthivel, S. Witanachchi, "Evidence for the physical basis and universality of the elimination of particulates using dual-laser ablation. I. Dynamic time-resolved target melt studies, and film growth of Y_2O_3 and ZnO", Journal of Applied Physics, Volume **91**, Issue 4, 1828-1836, (2002).

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63. P. Mukherjee, J. B. Cuff, S. Witanachchi, “Novel technique for low-jitter dual-laser synchronization in a thin film deposition system”**,** Review of Scientific Instruments, Volume **72**, Issue 5, 2380-2386, (2001).

64. P. Mukherjee, Shudong Chen, S. Witanachchi, “Novel continuously tunable high spectral resolution optical filter for two-dimensional imaging”**,** Review of Scientific Instruments, Volume **72**, Issue 6, 2624-2632, (2001).

65. S. Witanachchi, A. M. Miyawa, and P. Mukherjee, “Highly ionized carbon plasma generated by dual-laser ablation for diamond-like carbon film growth”, Proc. Mat. Res. Soc. Symp. Vol. **617**, J3.6.1 (2000).

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CONFERENCE PRESENTATIONS

1. Derick DeTellem, Christian Coris, Gina Pantano, Brianna Pecourt, and Sarath Witanachchi,“Solar-Thermal hybrid method of Energy harvesting in Rural Africa”, MRS Spring meeting, April 2023, San Francisco, CA.
2. Nivarthana W.Y.A.Y. Mudiyanselage, Chang-Ming Hung, Derick DeTellem, Amit Chanda, Janae E. Shoup, Noha Alzahrani, Anh Tuan Duong, Johannes Frisch, Marcus Bär, Dario Arena, Hariharan Srikanth, Sarath Witanachchi, and Manh-Huong Phan, “Proximity-mediated Magnetotransport in Ferromagnetic/Helimagnetic Fe/MnP Bilayers” IEEE MMM 2023, Dallas, TX, USA.
3. Nivarthana W.Y.A.Y. Mudiyanselage, Chang-Ming Hung, Derick Detellem, Amit Chanda,m Hariharan Srikanth, Sarath Witanachchi, and Manh-Huong Phan,“Time-dependent Magnetic Properties and Coupling Nature of Fe3GeTe2 (FGT)” IEEE summer school 2023, Bari, Italy.
4. Alexander Prieto, Nivarthana W.Y.A.Y Yapa Mudiyanselage, Thi Hai Yen Pham, Chang-Ming Hung, Derick DeTellem, J Marcelo J Lopes, Sarath Witanachchi, and Manh-Huong Phan, “Current Controlled Magneto-Optic Kerr Effect of Two-Dimensional Fe3GeTe2”, Emerging material symposium 2023 at University of Central Florida, Orlando FL, USA
5. “Energy harvesting with Solar and Thermoelectric materials: A hybrid concept” Derick DeTellem, and Sarath Witanachchi, Murape Davison Munyaradzi, Presentation at the Spring MRS meeting, Hawaii, May 10, 2022.
6. Functional $WS_2/CoFe_2O_4$ Heterostructures Grown by Dual Laser Ablation

Derick Detellem, Baleeswaraiah Muchharla, Nivarthana Waruni Yapa Mudiyanselage, Minh Tuan Trinh, Manh-Huong Phan and Sarath Witanachchi. Presentation at the Spring MRS meeting, Hawaii, May 10, 2022.

7. Proximity-mediated Spin Transport through Transition Metal Dichalcogenide Interfaces. Derick Christopher DeTellem, Chang-Ming Hung, Amit Chanda, Nivarthana Waruni Yapa Mudiyanselage, Yen Thi Hai Pham, Sarath Witanachchi, Harihran Srikanth, Manh-Huong Phan. Presentation at the Spring MRS meeting, Hawaii, May 10, 2022.

8. Mr. Derick DeTellem, et. All. "Energy harvesting with Solar and Thermoelectric materials: A novel hybrid concept", Africa Material Research Society (AMRS 2019), December 2019, Arusha-Tanzania.

9. Derick Gonzalez, Domingo Mateo, Mahesh Hordagoda, Sarath Witanachchi, "Selective Growth of PZT Nanowires on Si Substrates Using Glancing Angle Pulsed Laser Deposition", American Physical Society March meeting, New Orleans, LA, March 2017.

10. Chaminda Hettiarachchi[1], Nicholas Harris[2], Pritish Mukherjee[1] and Sarath Witanachchi, "$BaTiO_3$ Nanoparticles Embedded $CH_3NH_3PbI_{3-x}Cl_x$ Perovskite Solar Cells with Enhanced Open-Circuit Voltage", Materials Research Society Meeting, Phoenix, AZ, April 2017.

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12. Megan Glassell, Joshua Robles, Raja Das, Sarath Witanachchi, Manh-Huong Phan, Hari Srikanth, "Novel exchange-coupled $Fe_3O_4/CoFe_2O_4$ core/shell nanoparticles for hyperthermia-based therapy", Materials Research Society Meeting, Phoenix, AZ, April 2017.

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Graduate Students Supervised

1 G. S. Riser (M.S.), -August 1994.
2. K. Ahmed (Ph.D), -December 1996.
3. P. Panse (M.S.), -August 1994.
4. A. M. Miyawa (M.S.), -August 2000.
5. P. Mahawela (M.S.),- August 2000.
6. H. Abou-Mourad (Ph.D), - April 2005.
7. G. Dedigamuwa (M.S.), – May 2005.
8. H. Weerasinghe (M.S.), - August 2006
9. Robert Hyde (Ph.D),- July 2010.

10. G. Dedigamuwa (Ph.D), -July 2010.
11. Dev Mukherjee (Ph.D), –March 2010.
12. Marek Merlak (M.S), -July 2010.
13. T. Wangensteen (Ph.D), - November 2012.
14. Dino Ferizovic, (Ph.D.) –Dec. 2012.
15. Lakmal Hetiarachchi, (Ph.D.) – June 2017
16. Mahesh Hodagoda, (Ph.D.) – June 2016
17. Dan Denmark, (Ph.D.) – June 2016
18. Domingo Feliciano, (Ph.D.) – June 2018
19. Derick DeTellem (Ph.D.) - Current
20. Nivarthana Waruni Yapa (Ph.D.) - Current

University Service

- CAS Tenure and Promotion Committee (From Fall 2014)
- Executive Committee member, USF Chapter of the National Academy of Inventors (Fall 2011-2015)
- Executive Committee member of the National Academy of Inventors (Fall 2011-2013)
- Chair of the School of Natural Science and Mathematics (SNSM) Core Facilities and Infrastructure Committee (Fall 2008-present)
- Member of the Faculty Senate (Fall 2008-Spring 2011)
- Member of the College Advisory Council (Fall 2006-Spring 2008)
- Chair of the College Advisory Council (Fall 2005-Spring 2006)
- Chair of the Faculty Advisory Committee, Department of Physics (Fall 2001-Spring 2003, Fall 2005-Spring 2006)
- Chair of the Faculty Search Committee (2003-2008)
- Member of the advisory board, Nanotechnology Research and Education (NREC), (Fall 2004-present)
- Member, College Honors and Awards Committee (From Fall 2003)
- Member, College of Arts & Sciences Dean search committee (Fall 2001 & Spring 2002)
- Director of Graduate studies, Department of Physics (Fall 2002-Spring 2010)
- Chair of the Graduate committee (Fall 2002 – Spring 2010)
- Undergraduate Advisor (Fall 1996-Fall 2000)

- Member, Undergraduate committee (1996-2000)
- Member of the Faculty search committee, Department of Physics (1998, 1999, and 2001)
- Member of the search Committee, Center for Microelectronics Research (CMR) (1998-1999)
- Member, College Faculty Advisory Council (1999-2000)
- Member, College Teaching Incentive Program (TIP) Committee (1996 & 1998)
- Member, College Faculty Development Committee (1997-1998).