HENRY CABRA

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14313 Sage Blossom Dr.
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EDUCATION

2014	Ph.D. in Electrical Engineering, University of South Florida, Tampa, FL. Dissertation: "Design, Simulation, Prototype, and Testing of a Notched Blade Energy Generation System" Major Professor: Silvia W. Thomas, Ph.D.
2009	M.S. in Electrical Engineering, University of South Florida, Tampa, FL Focus Area: Microelectronics Advisor: Wilfrido Moreno, Ph.D.
2007	M.A. in Communication and Technological Innovation, Instituto Latinoamericano de la Comunicación Educativa (ILCE), México. Thesis: "Evaluation of the Implementation of a pedagogical model, Case Study: First Year of the School of Engineering at the Universidad Autónoma de Occidente"
1994	B.S. in Electronics Engineering, Pontifical Bolivarian University.

ACADEMIC APPOINTMENTS

2020-	Texas State University, San Marcos, Tx. Lecturer Professor, Ingram School of Engineering.
2016-2021	Polk State College, Lakeland, Fl. Assistant Professor, Engineering Technology Program.
2015-2016	Georgia Southern University, Statesboro, GA. Visiting Professor, Electrical and Computer Engineering.
1996-2012	Universidad Autónoma de Occidente, Cali, Colombia Engineering Faculty. Department of Automation and Electronics.
2007-2010	University of South Florida, Tampa, FL. Teaching Assistant, Department of Electrical Engineering
2010-2014	University of South Florida, Tampa, FL. Graduate Research Assistant, Department of Electrical Engineering

TECHNICAL SKILLS

Industry Knowledge: Electrical Circuits, Circuit Analysis, Semiconductors, Solid State Devices, Relays, Transformers, Automation, PLC, SPICE simulation and circuit design, ANSYS Multiphysics and Ansoft Maxwell

simulation, DSP, knowledge of FPGA's and FANUC Robot operations.

Technical Skills: MATLAB, Fusion 360, SolidWorks, Assembly (x86, MIPS), Microsoft Office Suite, LabVIEW, knowledge of C, C++, Python, SystemVerilog, and VHDL.

Soft Skills: Communication, Teamwork, Time Management, Critical Thinking, and Problem Solving, Leadership

HONORS AND AWARDS

2017-2021	NSF ATE Excelsior grant, Award #1700513
2018	Recipient of the NSF ASSIST Travel grant for the MAES Faculty Development Symposium (FDS), Grant #EEC-1548214.
2018	Recipient of the NSF ASSIST Travel grant for the SHPE Faculty Development Symposium 2018 - Grant #EEC-1548322.
2017	USF Functional Materials Research Experience for Teachers (RET)
2016	Recipient of the NSF ASSIST Travel grant for the Early-Faculty Development Symposium at the 28th Annual HENAAC Conference.
2013-2014	Dissertation Completion Fellowship, University of South Florida
2011-2014	College of Engineering GSS Diversity Fellowship
2012	USF Status of Latinos (SOL) Successful Latina/o Student Award
2012	FL Delores Auzenne Fellowship, University of South Florida

RESEARCH EXPERIENCE

2020-2021 Polk State College, Lakeland, Fl.
Co-Investigator in this research that focused on interactive tools to develop learners' skill mastery and learn hazardous procedures prior to implementing them in the workplace.

2017 University of South Florida, Tampa, Fl.
Functional Materials Research Experience for Teachers (RET)
Using silicon carbide (SiC) nanoparticles, fiber membranes were created using electrospinning and PCPU polymer solutions.

2010-2014 University of South Florida, Tampa, Fl.
Advisor: Sylvia W. Thomas, Ph.D.
Researched, designed, simulated, prototyped, and tested the concept of a micro/macroscopic turbine generator that can be immersed in flows of constant or variable volume and viscosity.

2004-2006 Universidad Autónoma de Occidente, Cali, Colombia.
Strategic Research Director.

TEACHING EXPERIENCE

Lecturer, Texas State University, San Marcos, Tx.

2020-Present Introduction to Digital Signal Processing
Circuits and Devices
Senior Design Mentoring
Digital Logic
Introduction to Microprocessors

Assistant Professor, Polk State College, Lakeland, Fl.
2016-2021 Introduction to Electronics
Introduction to Programmable Logic Controllers (PLCs)
Motors and Controls
Solid Modeling
Industrial Applications of PLCs and Robotics
Automated Process Control

Visiting Professor Georgia Southern University, Statesboro, GA.
2015-2016 Computing for Engineers
Introduction to Computer Engineering
Microprocessor Lab

University of South Florida, Tampa, Fl.
2007-2009 Teaching & Research Assistant, University of South Florida, Tampa, Fl.
Microprocessor Lab
Advanced Materials Bio & Integration Research (AMBIR) group. Design micro-turbines for bio-physiological applications.

Engineering Faculty, Universidad Autónoma de Occidente, Cali, Colombia
1996-2012 Microprocessors
Introduction to Engineering
Digital Electronics
Programmable Digital Systems
Senior Design (Undergraduate Thesis)

PUBLICATIONS

Conference Papers (Peer-Reviewed)

2018 M. M. Ababneh, H. Cabra, S. Perez, and S. Thomas, "Design of Notched Turbine Energy Harvesting System," in SoutheastCon 2018, pp. 1–5.

2017 H. Cabra, S. W. Thomas, S. Perez, M. Devisetty, T. Julien, and J. Harmon, "Electrospun PCPU-SiC Nanofiber Capacitor". 8th Annual USF REU-RET Poster Symposium.

2017	H. Cabra, "The Myths and the Magic of Open-Entry Early-Exit Courses", New Faculty Action Research Poster Presentation, Polk State College, Professional Development Day.
2017	M. M. Ababneh, S. Perez, H. Cabra, and S. Thomas, "Design of a novel mini notched turbine with optimized power management circuit," in Renewable Energy Congress (IREC), 2017 8th International, pp. 1–6.
2013	H. Cabra and S. Thomas, "Design, Theoretical Calculations, and Simulation of a Novel Cross Flow Mini Notched Turbine". Society of Hispanic Professional Engineering, SHPE 2013. Graduate Poster Competition.
2012	H. Cabra and S. Thomas, "Design, Simulation, and Test of a Millimeter BioPower Generator". Society of Hispanic Professional Engineering SHPE 2012 Conference. Paper Competition.
2012	H. Cabra and S. Thomas, "Design and Simulation of a Miniature Generator by Using a Spindle Motor Machine" 5th Annual Engineering Research Day. Poster Competition. College of Engineering, University of South Florida.
2012	H. Cabra, J. Headley, S. Perez, and S. Thomas, "Design and Simulation of a Millimeter Axial Flux Permanent Magnet Brushless Generator (AFPM-BG)". Nano-Bio Collaborative International Conference 2012. Tampa, Florida. Poster Awarded.
2011	H. Cabra and S. Thomas, "Design, Simulation and Prototyping Model of a Miniaturized BioEnergy Generation System," Technical Proceeding of the 22nd IASTED International Symposia on Modeling and Simulation MS 2011.
2011	H. Cabra and S. Thomas, "Design, Simulation, and Prototyping of an Impulse Turbine for Biomedical Applications," Technical Proceedings of TechConnect World 2011.
2010	H. Cabra and S. Thomas, "FABRICATION OF CROSS-FLOW BIO-MICRO-TURBINE." 10th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, pages 183-186, Proceedings Power MEMS, 2010. Leuven, Belgium.

PATENTS

2017	H. Cabra and S. W. Thomas, "Mini Notched Turbine Generator," Unites States Patent, No. 9618002B1.

PROFESSIONAL TRAINING/WORKSHOP

2023	Summer Institute 2023, Office of Distance and Extended Learning, Texas State University.
2020	Teaching Online at Texas State, Office of Distance and Extended Learning, Texas State University.
2019	The Learning and Study Strategies Inventory (LASSI), Polk State College

2018 FLATE-MSSC CPT+Workshop, The Florida Advanced Technological Education Center-FLATE and the Manufacturing Skill Standards Council (MSSC).

2017 Advanced Manufacturing Careers Institute for Robotics FANUC Robot Training, The Florida Advanced Technological Education Center-FLATE.

2017 The SHPE Faculty Development Institute, Travel Grant Award, National Science Foundation (Grant #EEC-1548322)

2016 Engineering Early-Faculty Career Development Symposium at the HENAAC Conference. NSF Assist Travel Grant.

2016 Recipient of the NSF ASSIST Travel grant for the Early-Faculty Development Symposium at the 28th Annual HENAAC Conference.

2016 SHPE conference and the Faculty Development Institute. NSF Assist Travel Grant.

PROFESSIONAL AFFILIATIONS

2010-Present Society of Hispanic Professional Engineers (SHPE)

2010-Present Institute of Electrical and Electronics Engineers (IEEE),

PROFESSIONAL SERVICE

Research Mentorship

Research Experience for Undergraduates (SEAM-REU)

2014 Graduate Student Coordinator
Mentor: Design Modification and Preliminary Testing of an Implantable Bio-Generator.

2013 Mentor: Analysis and Simulation of a Millimeter Scale Permanent Magnet Generator

2012 Mentor: Twin Rotor Microturbine Research Project.

Peer-Reviewed Articles for:

2019-2020 IEEE Transactions on Power Electronics Name of Journal

University Service

2023 Spring 2023 Ring Celebration, Alumni Association.

2020 Polk State College, Screening Committee for the ET Faculty position.

2019 Polk State College, Screening Committee of COL Teacher PE Position.

2019 Polk State College, Screening Committee of Director of Instructional Technology.

2018 University South Florida, Electrical Engineering Department, Doctoral Dissertation Committee Member.

2017 Polk State College, Screening Committee of a Teaching Lab Assistant.

Public Service

2022 Dripping Springs High School, Tx, The FIRST Robotics Competition, Judge.

2018 SHPE Engineering Science Symposium: Session 5: Applied Physics / Electrical and Computer Engineering. Chair and Judge.

2017 SHPE Engineering Science Symposia Faculty and Student Podium Presentations, Judge.

2016 28th HENAAC Conference, Research Posters Competition. Judge.

2016 SHPE Engineering Science Symposium, ESS (Papers and Posters Presentations), Judge.

LANGUAGES

English: Fluent

Spanish: Native