

## Jaime Andrés Pérez Taborda, PhD

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### CONTACT INFORMATION

Universidad de los Andes  
Carrera 1 Este No. 19 - 40  
Electrical and Electronics Engineering  
Bogotá, Colombia

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WWW: <http://jaimeandres.co>

### RESEARCH INTERESTS

#### Materials:

- Aluminum Nitride •Selenides ( $\text{Ag}_2\text{Se-Cu}_2\text{Se}$ ) •Silicon Germanium
- Applications of nanoparticles of Au, ZnO and PZT

#### Applications:

- Thermoelectric Materials •Piezoelectric Applications •Acoustic Wave Sensors - (SAW)
- Hard coatings •Applications with time temperature indicator (TTI)

#### Techniques:

- Pulsed Laser Deposition •Sputtering •Power Impulse Magnetron Sputtering - HIPIMS
- Raman, •XPS, •Synchrotron •Plasma analysis

#### Environmental Monitoring:

- Heavy metal detection •Sensing in remote areas - IoT •STEM Education, •Water quality sensing in low cost

### EDUCATION

- **Postdoctoral Researcher, 2017 - Currently**  
*Universidad de los Andes - Colombia,*  
Topics: *Monitoring of heavy metals in water*  
*Devices with optoelectronic and piezoelectric applications*
- **Ph.D., Physics, Cum. GPA: GPA: 10/10 - Cum Laude, Highest Honors, 2017**  
*Universidad Complutense de Madrid - Spain,*  
Thesis Topic: *High thermoelectric efficiency in nanostructured thin films of  $\text{Si}_{0.8}\text{Ge}_{0.2}$ ,  $\text{Cu}_2\text{Se}$  and  $\text{Ag}_2\text{Se}$  deposited by sputtering method Madrid Microelectronics Institute IMM, CSIC - Spain* Advisers: Dra. Marisol Martín González and Prof. Fernando Briones Fernández-Pola
- **M.S., Official Master - Synchrotron Radiation and Particle Accelerators, 2013**  
*Universitat Autònoma de Barcelona - Spain*  
Thesis Topic: *Beamline CIRCE Absolute Energy Calibration for Grating Plane Monochromator of Soft X-Ray* Emphasis: *The energy selected by the monochromator, and the optical magnification, are given by a combination of the pitch angles of the mirror and of the grating ( $\theta, \beta$ )*
- **B.S., Engineering Physics, 2011**  
*Universidad Tecnológica de Pereira - Colombia*  
*Summa cum laude, With Honors in Engineering Physics* Emphasis: *(Plasma, Thin Films, Pulsed Laser Deposition)* Research Topic: *Reactive plasma by Pulsed Laser Deposition. Applications of Acoustic Wave Sensors on thin films of aluminum nitride*

PROFESSIONAL  
EXPERIENCE

- [1] Universidad de los Andes - Colombia, Postdoctoral Researcher (**2017 - Currently**)
- [2] Higher Council for Scientific Research - Spain, Predoctoral researcher in Institute of Microelectronics of Madrid (**May 2013 - Sep 2017**)
- [3] Purdue University, Research stay in Birck Nanotechnology Center (**Jun - Sep 2016**)
- [4] Brazilian Center for Physical Research, Visiting researcher in Group of thin films and X-ray photoelectrons (**Apr - Aug 2014**) and (**Apr - May 2016**)
- [5] ALBA Synchrotron - Spain, Research stay in ABSOLUTE ENERGY CALIBRATION FOR SOFT X-RAY MONOCROMATORS BASED ON ENERGY AND CFF VALUE (**Oct 2011 - Apr 2013**)
- [6] Technological University of Pereira - Colombia, Research Assistant - Plasma physics and thin films (**Feb 2008 - Sep 2011**)
- [7] Technological University of Pereira - Colombia, Contratista Alcaldía de Pereira - Secretary of political and social economic development (**Feb 2006 - Nov 2006**)

AWARDS AND  
GRANTS

- [1] Visionary of the Year, *MIT Technology Review*, Massachusetts Institute of Technology (**Jan, 2020**)
- [2] 35 Innovators Under 35, *MIT Technology Review*, Massachusetts Institute of Technology (**Jan, 2020**)
- [3] Postdoctoral award, *Colciencias 811 Postdoctoral program*, Administrative Department of Science, Technology and Innovation - Colombia (**Jan, 2019**)
- [4] Financial Support, *Centro Brasileiro De Pesquisas Físicas*, - (**Oct, 2018**)
- [5] 50 projects of innovation and leadership, National Association of Graduates Award from the Technological University of Pereira, Colombia (**Oct, 2018**)
- [6] Financial Support, *Infrared nanospectroscopy (nano-FTIR) experiments in Brazilian Synchrotron Light Laboratory*, Brazilian Synchrotron Light Laboratory, (**Oct, 2018**)
- [7] Financial Support, “27<sup>th</sup> Annual Users Meeting Brazilian Synchrotron Light Laboratory (LNLS)”, Brazilian Synchrotron Light Laboratory - (**Nov, 2017**)
- [8] Postdoctoral award, *Research Vice-Rector, Universidad de los Andes - Colombia* (**Nov, 2017 - Jan 2019**)
- [9] Symposium assistant, “*EMRS 2017 Spring Meeting, EUROPEAN MATERIALS RESEARCH SOCIETY*”, France - (**Apr, 2017**)
- [10] Co-Autor “*Scientific photography contest. FOTCIENCIA*”, Organised by the Spanish Foundation for Science and Technology (FECYT) and the Spanish National Research Council, Spain - (**Jan, 2017**)
- [11] Doctoral Grant, Colciencias , “*Administrative Department of Science, Technology and Innovation (Colciencias)*”, Colombia - (**2013 - 2016**)
- [12] Scholarship - Short research stays (4 months) “*Birck Nanotechnology Center - Purdue University*”, West Lafayette, USA - (**Summer, 2016**)
- [13] Short research stays “*Brazilian Center for Research in Physics (CBPF) and Brazilian Synchrotron Light Laboratory*”, Brazil - (**Mar, 2016**)

- [14] Student grant Nanospain, “*Nanospain2016 Conference*”, Phantoms Foundation, Spain - **(2016)**
- [15] Scholarship attendance - “*34<sup>th</sup> annual international conference on thermoelectrics and 13<sup>th</sup> European conference on thermoelectrics*”, Max Planck Institute for Chemical Physics of Solids, Dresden - **(2015)**
- [16] Autor “*Particular mention NanoImage Competition*”, Nanotechnology Industries Association - **(Jan, 2014)**
- [17] Scholarship, “*Santander Iberoamerican Scholarships Young Professors and Researchers*” In “*Brazilian Center for Research in Physics (CBPF) and Brazilian Synchrotron Light Laboratory*”, - **Aug, 2013 and May, 2014**
- [18] Scholarship “*Fourth International Conference on Fundamentals and Industrial Applications of HIPIMS; in conjunction with COST Action on Highly Ionised Pulse Plasma Processes (MP0804)*”, Fraunhofer Institute, Braunschweig, Germany - **(Jun, 2013)**
- [19] Full scholarship assistance the meeting nanoformulation, “*European best work product of an investigation*”, Nanofutures, Spain - **(May, 2012)**
- [20] National Scholarship “*Master ALBA Synchrotron*”, COLFUTURO, Colombia - **(2011 - 2013)**
- [21] Scholarship: “*13<sup>th</sup> Latin American School on Plasma Physics*”, Chilean Nuclear Energy Commission and Center for Research and Application, Chile - **(Oct, 2010)**
- [22] VI Grant for Young Researchers - “*Engineering Physics*”, Universidad Tecnológica De Pereira, Colombia - **(2009)**
- [23] Scholarships B.S “*Engineering Physics - 2008 to 2011*”, Universidad Tecnológica De Pereira, Colombia - **(2008 to 2011)**

COVERS IN  
SCIENTIFIC  
JOURNALS

- [1] *Cover Picture: Thermoelectricity: High Thermoelectric  $zT$  in n-Type Silver*, Pérez Taborda, Jaime Andrés and Caballero-Calero, Olga and Vera, Liliana and Briones, Fernando and Martin-Gonzalez, Marisol, **Advanced Energy Materials** ISSN: 1614-6840 ed: John Wiley Sons, 2018, doi:<https://doi.org/10.1002/aenm.201870033> Link
- [2] *Frontispiece Picture - Thermoelectric Films: Pulsed Hybrid Reactive Magnetron Sputtering for High  $zT$   $Cu_2Se$  Thermoelectric Films*, Pérez Taborda, Jaime Andrés and Vera, Liliana and Caballero-Calero, Olga and Lopez, Elvis O and Romero, Juan J and Stroppa, Daniel G and Briones, Fernando and Martin-Gonzalez, Marisol, **Advanced Materials Technologies - 7/2017** ISSN: 2365-709X ed: John Wiley Sons, 2017, doi:10.1038/srep32778 Link

REFEREED  
JOURNAL  
PUBLICATIONS

- [1] *Rapid and on-site simultaneous electrochemical detection of copper, lead and mercury in the Amazon river*, Elena Bernalte, Sebastián Arévalo, Pérez Taborda, Jaime Andrés, Jannis Wenk, Pedro Estrela, Alba Avila, Mirella Di Lorenzo, **Sensors and Actuators B: Chemical** ISSN: 0925-4005 ed: Elsevier B.V, 2019, doi:<https://doi.org/10.1016/j.snb.2019.127620>
- [2] *Temperature-dependent thermal and thermoelectric properties of n-type and p-type  $Sc_1 - xMg_xN$* , Bivas Saha, Pérez Taborda, Jaime Andrés, Je-Hyeong Bahk, Yee Rui Koh, Ali Shakouri, Marisol Martin-Gonzalez, and Timothy D. Sands, **PHYSICAL REVIEW B** ISSN: 2469-9969 ed: American Physical Society - APS, 2018, doi:10.1103/PhysRevB.97.085301

- [3] *High Thermoelectric  $zT$  in n-Type Silver Selenide at Room Temperature*, Pérez Taborda, Jaime Andrés and Caballero-Calero, Olga and Vera, Liliana and Briones, Fernando and Martin-Gonzalez, Marisol, **Advanced Energy Materials** ISSN: 1614-6840 ed: John Wiley Sons, 2017, doi:10.1002/aenm.201702024
- [4] *Pulsed Hybrid Reactive Magnetron Sputtering for High  $zT$   $Cu_2Se$  Thermoelectric Films*, Pérez Taborda, Jaime Andrés and Vera, Liliana and Caballero-Calero, Olga and Lopez, Elvis O and Romero, Juan J and Stroppa, Daniel G and Briones, Fernando and Martin-Gonzalez, Marisol, **Advanced Materials Technologies** ISSN: 2365-709X ed: John Wiley Sons, 2017, doi:10.1038/srep32778
- [5] *Compensation of native donor doping in ScN: Carrier concentration control and p-type ScN*, Saha, Bivas and Garbrecht, Magnus and Pérez Taborda, Jaime Andres and Fawey, Mohammed H and Koh, Yee Rui and Shakouri, Ali and Martin-Gonzalez, Marisol and Hultman, Lars and Sands, Timothy D, **Applied Physics Letters** ISSN: 0003-6951 ed: American Institute of Physics, Volume 110, Issue 25, 2017, doi:10.1063/1.4989530
- [6] *STEM en nuestras vidas inherente o una nueva tendencia educativa*, Pérez Taborda, Jaime Andrés and Alba Avila, **REVISTA INNOVACIÓN Y CIENCIA** ISSN: 2590-8537 ed: Asociación Colombiana para el Avance de la Ciencia - ACAC; VOLUMEN XXIV No 4 2017, [Link](#)
- [7] *Ultra-low thermal conductivities in large-area Si-Ge nanomeshes for thermoelectric applications*, Pérez Taborda, Jaime Andrés, Rojo, Miguel Muñoz, Maiz, Jon, Neophytou, Neophytos and Martin-Gonzalez, Marisol, **Scientific Reports** ISSN: 2045-2322 ed: Nature Publishing Group, v.6 fasc. p.32778, 2016, doi:10.1038/srep32778
- [8] *Low thermal conductivity and improved thermoelectric performance of nanocrystalline silicon germanium films by sputtering*, Pérez Taborda, Jaime Andrés, Romero, JJ, Abad, B, Muñoz-Rojo, M, Mello, A, Briones, F and Gonzalez, MS Martin, **Nanotechnology Journal** ISSN: 1742-6596: ed: IOP Publishing v.27 - 17 p.175401, 2016, doi:10.1088/0957-4484/27/17/175401
- [9] *Correlation Between Optical, Morphological, and Compositional Properties of Aluminum Nitride Thin Films by Pulsed Laser Deposition*, Pérez Taborda, Jaime Andrés and Lándazuri, Henry Riascos and Londoño, Liliana Patricia Vera, **IEEE Sensors Journal** ISSN: 1530-437X ed: IEEE, v.16 fasc 2. p.359-364, 2016, doi:10.1109/JSEN.2015.2466467
- [10] *Spectroscopic analysis of coal plasma emission produced by laser ablation* Vera-Londoño, Liliana Patricia and Pérez Taborda, Jaime Andrés and Riascos-Landázuri, Henry **Revista Facultad de Ingeniería**, ISSN 0120-6230 ed: Universidad de Antioquia, v.78. p.69-72, 2016, doi:10.17533/udea.redin.n78a09
- [11] *Thermal Conductivity Measurements of High and Low Thermal Conductivity Films Using a Scanning Hot Probe Method in the  $3\omega$  Mode and Novel Calibration Strategies*, Wilson, Adam A., Munoz Rojo, Miguel, Abad, Begona, Pérez Taborda, Jaime Andrés, Maiz, Jon, Schomacker, Jason, Martin-Gonzalez, Marisol, Borca-Tasciuc, Diana-Andra and Borca-Tasciuc, Theodorian, **Nanoscale**, ISSN: 2040-337 ed: Royal Society of Chemistry ,v.32 p.15404 - 15412, 2015, doi:10.1039/C5NR03274A

- [12] *Deposition pressure effect on chemical, morphological and optical properties of binary Al-nitrides*, Pérez Tabora, Jaime Andrés, Caicedo, Julio César and Grisales, M, Sal-darriaga, W and Riascos, H, **Optics & Laser Technology** ISSN: 0030-3992 ed: Elsevier, v.69 fasc. p.92 - 103, 2015, doi:10.1016/j.optlastec.2014.12.009
- [13] *Determination of physical response in (Mo/AlN) SAW devices*, Caicedo, JC and Pérez Tabora, Jaime Andrés and Caicedo, HH and Riascos, H, **Surface Review and Letters** ISSN: 1793-6667 ed: World Scientific Publishing Company v.20 fasc.2 p.1350017 , 2013, doi:10.1142/S0218625X13500170
- [14] *Análisis espectroscópico de las películas delgadas de óxido de cobre y del plasma producido por deposición de láser pulsado*, Vera, Liliana, Pérez Tabora, Jaime Andrés, Riascos, H ed: **Revista de la Sociedad Colombiana de Física**, ISSN: 0120-2650; vol. 45, No. 3, p.146 -150 2013, Link
- [15] *AlN film deposition as a semiconductor device*, Caicedo, Julio Cesar and Pérez Tabora, Jaime Andrés and Aperador, W ed: **Revista Facultad de Ingeniería**, Universidad Nacional de Colombia, ISSN 0120-5609; vol. 33, No. 2, p.16 -23 2013, Link
- [16] *Estudio morfológico y estructural de películas delgadas de nitruro de aluminio obtenidas a partir de plasmas de aluminio en ambiente de N<sub>2</sub>*, Pérez Tabora, Jaime Andrés, Riascos, H, Ipaz, L and Jiménez-García, FN, ed: **Revista de la Sociedad Colombiana de Física**, ISSN: 0120-2650; vol. 44, No. 3, p.271 2012, Link
- [17] *Correlación entre las propiedades del Plasma y las películas de Cu preparadas por Ablación Laser*, Landázuri, Henry Riascos and Vera Liliana and Pérez Tabora, Jaime Andrés, Journal **Entre Ciencia E Ingeniería** ISSN: 1909-8367 v.5 - 9 p.107 - 119 , 2011, Link
- [18] *Review: Propiedades estructurales y ópticas de compuestos (AlN, GaN, InN)*, Pérez Tabora, Jaime Andrés, Journal **Tumbaga** ISSN 1909-4841, v.6 p.201 - 214, 2011, Link
- [19] *Películas delgadas de nitruro de aluminio (AlN)*, Pérez Tabora, Jaime Andrés, **Scientia Et Technica**, ISSN: 0122-1701 ed: Editorial Universidad Tecnológica de Pereira v.48 fasc.2 p.218 - 223, 2011, Link
- [20] *Caracterización por DRX y espectrofotometría UV-VIS de películas de ZnO depositadas por PLD*, Riascos, Henry and Francy Nelly Jiménez and Pérez Tabora, Jaime Andrés Journal **Entre Ciencia e Ingeniería** ISSN 1909-8367 v.7 p.88 - 94 , 2010, Link
- [21] *Análisis estructural y morfológico de películas de nitruro de aluminio obtenidas por deposición de láser pulsado*, Pérez Tabora, Jaime Andrés and Landázuri, Henry Riascos and García, Francy Nelly Jiménez and Angulo, Julio César Caicedo, Journal **Ciencia e Ingeniería Neogranadina** ISSN 0124-8170, v.20 - 2 p.107 - 115 , 2010, Link
- [22] *AFM, Espectroscopia FTIR y RAMAN de Películas Delgadas de CNx Crecidas por PLD*, Gallego Cano, Jorge Luis and Riascos Landázuri, Henry and Franco, L and Pérez Tabora, Jaime Andrés ed: **Revista de la Sociedad Colombiana de Física**, ISSN: 0120-2650; vol. 41, No. 3, 2009, Link
- [23] *Películas nanoestructuradas de Oxido de Zinc (ZnO)*, Pérez Tabora, Jaime Andrés and Gallego, Jorge Luis and Román, Wilson Stiven and Riascos Landázuri, Henry **Scientia Et Technica**, ISSN: 0122-1701 ed: Editorial Universidad Tecnológica de Pereira v.39 fasc. p.416 - 421, 2008, Link
- [24] *Estudio espectroscópico de plasmas del aire, cobre y aluminio producidos por láser pulsado*, Franco, Lina María and Pérez Tabora, Jaime Andrés and Riascos Landázuri,

Henry, **Revista Colombiana de Física**, ISSN: 0120-2650; v.40 fasc.1 p.175 - 179 , 2008, [Link](#)

- [25] *Optical spectroscopy of emission from CN plasma formed by laser ablation*, Riascos Landázuri, Henry and Franco, Lina María and Pérez Taborda, Jaime Andrés, **Physica Scripta**, ISSN: 0281-1847 ed: IOP Publishing v.131 fasc.014020 p.4 - 3 , 2008, doi:10.1088/0031-8949/2008/T131/014020
- [26] *Diagnóstico de un plasma por sonda de Langmuir*, Franco, Lina María and Pérez Taborda, Jaime Andrés and Riascos Landázuri, Henry **Scientia Et Technica**, ISSN: 0122-1701 ed: Editorial Universidad Tecnológica de Pereira v.XIII fasc.No 35 p.439 - 442, 2007, [Link](#)
- [27] *Crecimiento de películas delgadas de Nitruro de Carbono por deposición con láser pulsado*, Riascos Landázuri, Henry Franco and Lina and Pérez Taborda, Jaime Andrés **Scientia Et Technica**, ISSN: 0122-1701 ed: Editorial Universidad Tecnológica de Pereira v.XIII fasc.36 p.125 - 128, 2007, [Link](#)

CONFERENCE  
PUBLICATIONS

- [1] *Editor*, In: *IX Symposium of Applied Chemistry and I International Congress of Nanochemistry, Nanophysics and Nanomedicine, Colombia*, Pérez Taborda, Jaime Andrés, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing, Expected: April 2020,
- [2] *Time temperature indicators (TTIs) based on silver nanoparticles for monitoring of perishables products*, In: *Proceedings of the 6<sup>th</sup> National Conference on Engineering Physics and the 1<sup>st</sup> International Conference on Applied Physics Engineering Innovation*, G.A. Lanza, Pérez Taborda, Jaime Andrés and A.Avila, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing v.1247 - 1 p.012055, 2019, doi:10.1088/1742-6596/1247/1/012055
- [3] *Editor*, In: *Proceedings of the 6<sup>th</sup> National Conference on Engineering Physics and the 1<sup>st</sup> International Conference on Applied Physics Engineering Innovation*, Pérez Taborda, Jaime Andrés, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing 1247 (2019) 011001 , 2019, doi:10.1088/1742-6596/1247/1/011001
- [4] *Editor*, In: *Proceedings of the 5<sup>th</sup> Colombian Conference of Engineering Physics (V CNIF)*, Pérez Taborda, Jaime Andrés, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing 1825304(526071879)011001 , 2017, doi:10.1088/1742-6596/850/1/011001
- [5] *Optical emission spectroscopy of Aluminum Nitride thin films deposited by Pulsed Laser Deposition*, In: *Proceedings of the ICPP2010 LAWPP2010*, Pérez Taborda, Jaime Andrés and Vera Liliana and Landázuri, Henry Riascos, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing v.511 - 1 p.012078, 2014, doi:10.1088/1742-6596/511/1/012078
- [6] *Spectroscopic study of emission coal mineral plasma produced by laser ablation*, In: *Proceedings of the ICPP2010 LAWPP2010*, Vera Liliana and Pérez Taborda, Jaime Andrés and Landázuri, Henry Riascos, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing v.511 - 1 p.012063, 2014, doi:10.1088/1742-6596/511/1/012063
- [7] *Optical Properties Dependence with Gas Pressure in AlN Films Deposited by Pulsed Laser Ablation*, In: *Proceedings of the XVII Reunión Iberoamericana de Óptica X Encuentro de Óptica, Láseres y Aplicaciones*, Pérez Taborda, Jaime Andrés and Landázuri,



Henry Riascos and Angulo, Julio César Caicedo, **Journal of Physics: Conference Series** ISSN: 1742-6596: ed: IOP Publishing v.270 - 1 p.012119, 2011, doi:10.1088/1742-6596/274/1/012119

- [8] *Películas delgadas nanoestructuradas de nitruro de aluminio depositadas por ablación láser*, In: *X Iberoamericano de Metalurgia y Materiales (X IBEROMET) - Cartagena, Colombia, 2008* Pérez Taborda, Jaime Andrés and Riascos Landázuri, Henry and Tirado Liliana and Ospina Rogelio **Revista Latinoamericana De Metalurgia Y Materiales** ISSN: 0255-6952 ed: Universidad Simon Bolivar - Venezuela v.3 p.1065 - 1069, 2009, Link
- [9] *Chemical analysis of CNx thin films produced by pulsed laser ablation*, In: *CLACSA XIII, Colombia 2007* Franco, Lina María and Pérez Taborda, Jaime Andrés and Riascos Landázuri, Henry, **Microelectronics Journal** ISSN: 0026-2692 ed: Elsevier v.39 fasc.11 p.1363 - 1365, 2008, doi:10.1016/j.mejo.2008.01.091

BOOK

- [1] *Coatings and Thin-Film Technologies*, ISBN: 978-1-78984-871-7, Book edited by: Pérez Taborda, Jaime Andrés and Alba Avila, **IN TECH**, DOI:10.5772/intechopen.74351 PDF
- [2] *Alta eficiencia termoeléctrica en películas delgadas nanoestructuradas de SiGe, Cu<sub>2</sub>Se y Ag<sub>2</sub>Se depositadas por pulverización catódica* Autor: Pérez Taborda, Jaime Andrés, **Universidad Complutense de Madrid, Spain**, ID:47583 PDF

BOOK CHAPTERS

- [1] Vera Liliana and Olga Caballero Calero and Pérez Taborda, Jaime Andrés and Marisol Martin Gonzalez, *Advances in Scanning Thermal Microscopy Measurements for Thin Films*, In *Coatings and Thin-Film Technologies*, ISBN 978-1-78984-871-7, Book edited by: Pérez Taborda, Jaime Andrés and Alba Avila, **InTechOpen**, 3-28 2019, doi:10.5772/intechopen.79961
- [2] Pérez Taborda, Jaime Andrés and Olga Caballero Calero and Marisol Martin Gonzalez, *Silicon Germanium (SiGe) nanostructures for thermoelectric devices: Recent advances and new approaches to high thermoelectric efficiency*, In *Silicon - Properties and Applications*, ISBN 978-953-51-5360-3, Book edited by: V. I. Talanin, **InTechOpen**, 183-206 2017, doi:10.5772/67730
- [3] Pérez Taborda, Jaime Andrés and López, Elvis O, *Research Perspectives on Functional Micro and Nano Scale Coatings: New Advances in Nanocomposite*, In *Research Perspectives on Functional Micro- and Nanoscale Coatings*, ISBN13: 9781522500667, Book edited by: Ana Zuzuarregui and Maria Carmen Morant-Miñana, **IGI Global**, 136-169 2016, doi:10.4018/978-1-5225-0066-7.ch006

INVITED TALKS

- [1] Pérez Taborda, Jaime Andrés *keynote talk* September 23<sup>th</sup> - 2019, 2<sup>nd</sup> Week of physical engineering - Universidad del Cauca, Colombia 2019.
- [2] Pérez Taborda, Jaime Andrés *Invited talk* September 13<sup>th</sup> - 2019, Seminar Materials Science doctoral program - Univalle, Colombia 2019. **Invited**
- [3] Pérez Taborda, Jaime Andrés *Invited talk* August 23<sup>th</sup> - 2019, IX Simposio de Química Aplicada, I Congreso Internacional de Nanoquímica, Nanofísica y Nanomedicina, Quindío - Colombia 2019. **Invited**
- [4] Pérez Taborda, Jaime Andrés *Invited talk* May 31<sup>th</sup> - 2019, Seminario Universidad Javeriana Cali - Colombia 2019. **Invited**
- [5] Pérez Taborda, Jaime Andrés *Master conferences* November 5<sup>th</sup> to 9<sup>th</sup> - 2018, IX International Congress of Physical Engineering at the Campus Azcapotzalco in Mexico City, Mexico, 2018. **Invited**

- [6] Pérez Taborda, Jaime Andrés *Invited Speaker* September 17<sup>th</sup> to 21<sup>st</sup> - 2018, International Science Week, Challenges of Science in the 21st Century in Bucaramanga, Colombia, 2018. Invited
- [7] Pérez Taborda, Jaime Andrés *Generación de electricidad a partir del calor corporal: Una nueva aproximación a través de nanoestructuras termoeléctricas con altos valores de eficiencia*, Feb 27 - 2018, Coloquio licenciatura en Física - Universidad Distrital - Bogotá 2018. Invited
- [8] Pérez Taborda, Jaime Andrés and F. Briones and M. Martín-González. In: V Congreso Nacional de Ingeniería Física, *Ultra-low thermal conductivities in large-area Si-Ge nanomeshes for thermoelectric applications*, September 26-30, Universidad Nacional de Colombia. Medellín, Colombia 2016. Invited
- [9] Pérez Taborda, Jaime Andrés and Briones, Fernando and Martín-González, M. In: 3<sup>rd</sup> International Meeting for Researchers in Materials and Plasma Technology and 1<sup>st</sup> Symposium on Nano-science and Nanotechnology *Recent developments in semiconductor industry: Two case studies*, May 04 09, Universidad Industrial de Santander - Colombia. 2015. Invited

CONFERENCE  
TALKS

- [1] Pérez Taborda, Jaime Andrés *Nuevas Aproximaciones en la obtención de nanoestructuras con alta eficiencia termoeléctrica: Retos y Oportunidades para Colombia* September 17<sup>th</sup> to 21<sup>st</sup> - 2018, International Science Week, Challenges of Science in the 21st Century in Bucaramanga, Colombia, 2018. Invited Speaker
- [2] Vera Londono Liliana Patricia; Ruiz-Clavijo Alejandra; Pérez Taborda, Jaime Andrés; Martín-González Marisol. *Thermal conductivity measurements of nanostructures by scanning thermal microscopy*, In: 5<sup>th</sup> Thermal probe Workshop, March 2018, Zurich 2018
- [3] Pérez Taborda, Jaime Andrés and Briones, Fernando and Martín-González, M. *Pulsed Hybrid Reactive Magnetron Sputtering as a new technique to obtain high quality selenides*, In: 7<sup>th</sup> International Conference on Thermoelectrics, Jun 2018, European Thermoelectrics Workshop, Caen - France 2018.
- [4] Pérez Taborda, Jaime Andrés and Briones, Fernando and Martín-González, M. In: 27<sup>th</sup> Annual Users Meeting Brazilian Synchrotron Light Laboratory (LNLS) *New method in the growth of thin films of Ag<sub>2</sub>Se and structural study through Synchrotron radiation X-ray grazing incidence diffraction with in – situ heating*, Nov 2017, Brazilian Synchrotron Light Laboratory. 2017.
- [5] Pérez Taborda, Jaime Andrés and Vera, Liliana and Caballero-Calero, Olga and Lopez, Elvis O and Romero, Juan J and Stroppa, Daniel G and Briones, Fernando and Martín-Gonzalez, Marisol In: EMRS 2017 Spring Meeting ,EUROPEAN MATERIALS RESEARCH SOCIETY, *New approach in the growth of thin films of Selenides (P and N Type) with high figures of merit* , May 22-26, Convention Centre of Strasbourg (France). 2017. Poster abstract
- [6] Ruiz, Alejandra and Abad Begoña and Pérez Taborda, Jaime Andrés and Vera, Liliana and M. Martín-González and Rull, Marta and Muñoz, Miguel and Caballero, Olga. In: European Materials Research Society, *Energy harvesting by Nano-structured thermoelectric materials*, May 04-06, Lille Grand Palais - France 2016. [Link](#)
- [7] Abad, Begoña and Manzano, Cristina and Maiz, Jon and Pérez Taborda, Jaime Andrés and Fernández, José Francisco and Martín-González, Marisol. In: IV Jornada de Jóvenes Investigadores. *El efecto fotoacústico como técnica de medida de conductividad térmica*, Jul 07-09, Instituto de Cerámica y Vidrio (CSIC). Madrid - Spain 2015. [Link](#)



- [8] Pérez Taborda, Jaime Andrés and Martín-González, Marisol and Briones, Fernando In: IV Jornada de Jóvenes Investigadores. *Seleniuro de plata: Un candidato a la alta eficiencia termoeléctrica*, Jul 07-09, Instituto de Cerámica y Vidrio (CSIC). Madrid - Spain 2015. [Link](#)
- [9] Pérez Taborda, Jaime Andrés *Recent developments in semiconductor industry: two case studies* May, 2015, 3rd International Meeting for Researchers in Materials and Plasma Technology and 1st Symposium on Nanoscience and Nanotechnology 2015. Invited Speaker
- [10] Pérez Taborda, Jaime Andrés and Riascos, Henry. In: 2<sup>nd</sup> National Conference in Engineering Physics. *Obtención y caracterización de películas delgadas de AlN por PLD utilizadas como sustratos de sensores SAW*, Sep 06 - 10, Universidad Tecnológica de Pereira - Colombia. 2010. [Link](#)

CONFERENCE  
POSTERS

- [1] Pérez Taborda, Jaime Andrés and Rojo, Miguel Muñoz and Maiz, Jon and Neophytou, Neophytos and Martín-González, Marisol, In: EMRS 2017 Spring Meeting ,EUROPEAN MATERIALS RESEARCH SOCIETY, *Ultra low-thermal conductivities in large area Si<sub>0.8</sub>Ge<sub>0.2</sub> nanomeshes grown by DC-Sputtering for thermoelectric applications*, May 22-26, Convention Centre of Strasbourg (France). 2017. [Poster abstract](#)
- [2] Vera, Liliana and Pérez Taborda, Jaime Andrés and Briones, Fernando and Martín-González, Marisol. In: Colombia-U.S. Workshop on Nanotechnology, *Thermal Transport Properties Investigated Through the 3 $\omega$ -SThM*, February 14-15, Universidad de los Andes. Bogota, Colombia. 2017. [Poster abstract](#)
- [3] Pérez Taborda, Jaime Andrés and Rojo, Miguel and Briones, Fernando and Martín-González, M. In: 34<sup>th</sup> Annual international conference on thermoelectrics and 13<sup>th</sup> European conference on thermoelectrics. *Nanomesh Silicon Germanium by DC Sputtering for applications in Thermoelectric Devices*, Jun 28 - Jul 02, Planck Institute for Chemical Physics of Solids, Dresden - Germany 2015. [Poster abstract](#)
- [4] Pérez Taborda, Jaime Andrés and Romero, Juan José and Briones, Fernando and Martín-González, M. In: 12<sup>th</sup> European Conference on Thermoelectrics. *Effects of Gold Induced Crystallization on the thermoelectric properties of Si<sub>0.8</sub>Ge<sub>0.2</sub> thin films grown by sputtering*, Sep 24 - 26, Spanish National Research Council (CSIC), Madrid - Spain. 2014. [Poster abstract](#)
- [5] Pérez Taborda, Jaime Andrés. In: X-LAW3M (Latin American Workshop on Magnetism, Magnetic Materials and their Applications). *Study of effect of deposition temperature of Surface Acoustic Wave devices on Aluminum Nitride thin films obtained by Pulsed Laser Deposition*, Apr 08 -12, Universidad de Buenos Aires - Argentina. 2013. [Poster abstract](#)
- [6] Pérez Taborda, Jaime Andrés. In: Euromat 13 (European Conference on Advanced Materials and Processes, Sep 8 -13, Sevilla - Spain. 2013. [Poster abstract](#)
- [7] Pérez Taborda, Jaime Andrés. In: NanoFormulation2012. May 28 - Jun1, Barcelona - Spain. *Effects of temperature and pressure on the structural and optical properties of AlN films grown by Pulsed Laser Deposition - PLD*. 2012. [Poster abstract](#)
- [8] Pérez Taborda, Jaime Andrés and Vera, Liliana and Riascos, Henry. In: XIII Conferencia Colombiana Coal Conference. Feb 10. Barranquilla - Colombia. 2011.

- [9] Vera, Liliana and Pérez Taborda, Jaime Andrés and Riascos, Henry. In: 1<sup>st</sup> International Meeting for Researchers in Materials and Plasma Technology *Estudio espectroscópico de la emisión de plasmas de carbono tipo diamante*. Feb 9 - 11. Universidad Pontificia Bolivariana. Bucaramanga - Colombia. 2011. Poster abstract
- [10] Pérez Taborda, Jaime Andrés and H. Riascos. X Iberomet, Dual year Russia-Spain Particle Physics, Nuclear Physics and Astroparticle Physics. Nov 8 - 11. Universitat Politecnica de Catalunya. Barcelona - Spain. 2011. Poster abstract
- [11] Pérez Taborda, Jaime Andrés and Vera, Liliana and Riascos, Henry. In: 15<sup>th</sup> International Congress on Plasma Physics (ICPP 2010) and 13<sup>th</sup> Latin American Workshop on Plasma Physics (LAWPP 2010). *Optical Emission Spectroscopy Of Thin Films Of Aluminum Nitride Deposited By Pulsed Laser Deposition*, Aug 08 - 13, Chilean Commission of Nuclear Energy, Santiago de Chile. 2010. Poster abstract
- [12] Vera, Liliana and Pérez Taborda, Jaime Andrés and Riascos, Henry. In: 15<sup>th</sup> International Congress on Plasma Physics (ICPP 2010) and 13<sup>th</sup> Latin American Workshop on Plasma Physics (LAWPP 2010). *Spectroscopic Study Of Emission Coal Mineral Plasma Produced By Laser Ablation*, Aug 08 - 13, Chilean Commission of Nuclear Energy, Santiago de Chile. 2010. Poster abstract
- [13] Pérez Taborda, Jaime Andrés and Riascos, Henry. In: 2<sup>nd</sup> National Conference in Engineering Physics. *Estudio espectroscópico de plasmas de carbon producido por ablación laser*, Sep 06 - 10, Universidad Tecnológica de Pereira - Colombia. 2010.
- [14] Pérez Taborda, Jaime Andrés and H. Riascos and F. N. Jiménez-García and Felio A. Perez and L. Ipaz. XXIX Annual Meeting International Conference on Surfaces, Materials and Vacuum. *Deposition and characterization of AlN films grown on Si<sub>3</sub>N<sub>4</sub>/Si by pulsed deposition*, Sep 21 - 25, Mexican Society of Surfacing and Materials Science and Technology. San Luis Potosí - México. 2009. Poster abstract
- [15] Franco, Lina and Pérez Taborda, Jaime Andrés and Riascos, Henry. V Congreso Internacional de Materiales, Oct 12 - 15. Universidades Autónoma de Occidente, Cali - Colombia 2009. Poster abstract
- [16] Franco, Lina and Pérez Taborda, Jaime Andrés and Riascos, Henry. 5<sup>th</sup> International conference in Materials. Oct 12 - 15. Universidades Autónoma de Occidente, Cali - Colombia 2009. Poster abstract
- [17] Pérez Taborda, Jaime Andrés and H. Riascos. X Iberomet, Ibero-American Congress on Metallurgy and Materials. *Películas delgadas nanoestructuradas de nitruro de aluminio depositadas por ablación láser*, Oct 13 - 17. Cartagena de Indias - Colombia. 2008. Poster abstract
- [18] Pérez Taborda, Jaime Andrés and Franco, Lina and Riascos, Henry. 4<sup>th</sup> International conference in Materials. Sep 10 - 14. Universidades Tecnológica de Pereira - Colombia 2007. Poster abstract

SCIENTIFIC  
MEETINGS

**Participation in committees**

- 7<sup>th</sup> National Conference in Engineering Physics, Oct - Universidad Nacional de Colombia 2020. **Organizing Committee**
- 6<sup>th</sup> National Conference in Engineering Physics, Oct 22 - 26, Universidad Industrial del Santander. 2018. **Organizing Committee**
- 4<sup>rd</sup> International Meeting for Researchers in Materials and Plasma Technology, May 23 - 26, Santa Marta - Colombia. 2017. **International Scientific Committees**
- Colombia-U.S. Workshop on Nanotechnology, Feb 14 - 15, Universidad de los Andes - Bogota, Colombia. 2017. **Committee scientific / technical**
- 5<sup>th</sup> National Conference in Engineering Physics, Sep 26 - 30, Universidad Nacional de Colombia. 2016. **Organizing Committee**
- 3<sup>rd</sup> International Meeting for Researchers in Materials and Plasma Technology and 1<sup>st</sup> Symposium on Nanoscience and Nanotechnology, May 04 - 09, Universidad Industrial de Santander - Colombia. 2015. **International Scientific Committees**
- 4<sup>th</sup> National Conference in Engineering Physics, May 22 - 26, Universidad del Cauca - Colombia. 2014. **International Scientific Committees**
- 3<sup>rd</sup> National Conference in Engineering Physics, Sep 10 - 14, Universidad EAFIT - Colombia. 2012. **Organizing Committee**
- 2<sup>nd</sup> National Conference in Engineering Physics, Sep 06 - 10, Universidad Tecnológica de Pereira - Colombia. 2010. **Chairman**
- Applied Physics Symposium, Mar 01. Universidad Tecnológica de Pereira - Colombia. 2006. **Organizing Committee**

POSTDOCTORAL  
SUPERVISION

[1] **Dr. Diego Andrés Chavarro Bohórquez,**

Thesis topic: Colombia and the fourth industrial revolution: the potential of the physical engineering for the development of sustainable technologies

**Primary adviser:** Jaime Andrés Pérez Taborda, PhD

**Funding:** Colciencias 2020 - 2021

[2] **Dr. Mawin Javier Martínez Jiménez,**

Thesis topic: Synthesis and characterization of hybrid materials for heavy metal detection in water

**Primary adviser:** Jaime Andrés Pérez Taborda, PhD

**Funding:** Colciencias 2020 - 2021

[3] **Dr. Yoder Alberto Suaza Tabares,**

Thesis topic: Determination of the energy spectrum and the optical response of quantum rings with anisotropic structural deformations for the potential development and design of gates and quantum sensors.

**Primary adviser:** Jaime Andrés Pérez Taborda, PhD

**Funding:** Colciencias 2020 - 2021

THESIS  
SUPERVISION

Graduate Students

[1] **Diana Elizabeth Bolaños Cruces,**

Physical Engineering

Universidad del Cauca. Colombia

**Primary adviser:** Wilfrand Perez - **Co-advised by:** Jaime Andrés Pérez Taborda

Expected Jun 2020

- [2] **Juan Manuel Castañeda Barbosa,**  
 Department of Electrical and Electronics Engineering  
 Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo - **Co-advised by:** Jaime Andrés Pérez  
 Expected Jun 2020
- [3] **Julio Alexis Zorro Perez,**  
 Thesis topic: Detection of contaminants through voltammetry and electrodes based on bio-materials  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Dec - 2019
- [4] **Juan Manuel Alberto Lovera,**  
 Thesis topic: Design of probes for water monitoring based on emerging technologies  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Dec - 2019
- [5] **Nicolás López,**  
 Thesis topic: Diffractogram M for Machine Learning  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Dec - 2019
- [6] **Felipe Laverde Zamudio,**  
 Thesis topic: IDENTIFICATION AND LABELING OF CRYSTAL COMPOUNDS IN X-RAY DIFRACTOGRAMS FROM MACHINE LEARNING ALGORITHMS  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Jun 2019
- [7] **Ana Leonor Acevedo Perez,**  
 Thesis topic: Prediction of Water Quality Parameters of Eje Ambiental Canal from On-site and Hydro-meteorological Measurements using the XGBoost Algorithm  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo - **Co-advised by:** Jaime Andrés Pérez  
 Jun 2019
- [8] **Santiago Arboleda Bolaños,**  
 Thesis topic: Characterization of thermoelectric cells to determine properties that increase their efficiency  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Jun 2019

- [9] **Andrés Felipe Tamayo Celis,**  
 Thesis topic: MICRO MANUFACTURE AND CHARACTERIZATION OF A PHYSICAL SENSOR FOR THE DETECTION OF  $Hg_2^+$   
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Jul - 2018
- [10] **Carlos Alejandro Jiménez Rodríguez,**  
 Thesis topic: Zinc oxide nanostructured: application in piezoelectricity  
 Department of Electrical and Electronics Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Jul - 2018

Master Students

- [1] **Nicolas López,**  
 Department of Electrical and Electronics Engineering  
 Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Expected Nov 2021
- [2] **Julio Zorro,**  
 Department of Electrical and Electronics Engineering  
 Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Expected Nov 2021
- [3] **Maidy Cabrera,**  
 Department of Electrical and Electronics Engineering  
 Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Expected Nov 2021

Doctoral Students

- [1] **Maria Gabriela Bedoya Duque,**  
 Thesis topic: Copulas the Hyperbolic Distribution  
 UNIVERSIDAD FEDERAL DE RIO DE JANEIRO (UFRJ) - Brazil  
**Primary adviser:** Jaime Andrés Pérez Taborda  
 Currently
- [2] **Carlos Andres Pérez,**  
 Thesis topic: Piezoelectric Nanogenerators based on ZnO -PVDF for energy recovery applications  
 Faculty of Engineering - Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila - **Co-advised by:** Jaime Andrés Pérez Taborda  
 Currently

THESIS

Graduate Students

EVALUATION PANEL

- [1] **Carlos Alberto Niño Ramirez,**  
 Thesis topic: Design of Experiment and Model to relate Tempo of Music and Heart Rate Variability  
 Department of Electrical and Electronics Engineering  
 Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo  
 Dec - 2019

- [2] **Valentina Garzon Parra,**  
Thesis topic: DESIGN AND IMPLEMENTATION OF CONTROL SYSTEM FOR LIGHT DISTRIBUTION FOR CROPS IN CONTROLLED ENVIRONMENTS  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo  
Dec - 2019
- [3] **Santiago Devia Valderrama,**  
Thesis topic: Characterization of an artisanal fermented beverage production system: Kombucha, and consumer segmentation using automated learning techniques  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo  
Dec - 2019
- [4] **Germán Andrés Sánchez Sarmiento,**  
Thesis topic: DESIGN OF A PIEZOELECTRIC PRESSURE SENSOR BY PIXELS  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila  
Jun - 2019
- [5] **Henry Stiven García,**  
Thesis topic: IMPLEMENTATION OF MACHINE LEARNING TECHNIQUES FOR THE PREACHING OF METEOROLOGICAL AND SOIL VARIABLES AFFECTING AGRICULTURE  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo  
Jun - 2019
- [6] **Juan Camilo Amaya Garcia,**  
Thesis topic: PREDICTION OF ARRANGEMENTS OF POLYMER NANOCOMPOSTS FROM PARAMETERS S  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Luis Felipe Giraldo  
Jun - 2019
- [7] **Felipe González Urrego,**  
Thesis topic: Determination of growth conditions for the manufacture of graphene films deposited by laser ablation  
Physical Engineering - Universidad Tecnológica de Pereira, Colombia  
**Primary adviser:** Henry Riascos L.  
May - 2019
- [8] **Nicolás Castaño,**  
Thesis topic: Parameters of copper plasma produced by laser ablation using optical emission spectroscopy  
Physical Engineering - Universidad Tecnológica de Pereira, Colombia  
**Primary adviser:** Henry Riascos L.  
May - 2019



### Master Students

[1] **William Yesid Rodriguez Cruz,**

Thesis topic: Device for determining coffee quality  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila  
Dec - 2018

[2] **Sebastián Arévalo Ribón,**

Thesis topic: Instrumentation design for the study of water quality properties  
Department of Electrical and Electronics Engineering  
Universidad de los Andes. Colombia  
**Primary adviser:** Alba Avila  
Jun - 2018

### PROFESSIONAL MEMBERSHIPS

#### Scientific Societies:

- (2015 - Present) IEEE Power and Energy Society Membership
- (2015 - Present) ACS American Chemical Society
- (2014 - Present) EPS European Physical Society
- (2013 - 2015) European Council of Doctoral Students and Young Researchers (Representative for Spain)
- (2010 - Present) National Colombian Society of Engineering Physics (Co-founder and Current President)
- (2008 - Present) National Cooperative Education workers of Risaralda - Colombia

### PROFESSIONAL SERVICE

- [1] Editorial Board Energy Reports Journal - Elsevier, ISSN: 2352-4847 - Actually
- [2] Editorial Advisory Board - Cambridge Scholars Publishing, (Heavy Metals Advisory Board) - Actually
- [3] Technical Program Committees, *The 2019 International Conference on Advanced Material Research and Processing Technology (AMRPT2019)*
- [4] International Scientific Committees, *4th International Conference on Electrical Automation and Mechanical Engineering (EAME2020)*
- [5] Selection Committee: Selection committee for master's and doctoral scholarships. Colombian Program for study abroad. Area of Selection: Engineering, **COLFUTURO**, 2018
- [6] Tutor of the winning team, *Act In Space Internacional ActInSpace* - (2018)
- [7] Editorial Advisory Board - Book: *Production, Properties, and Applications of High Temperature Coatings*, **Igi-global**, doi:10.4018/978-1-5225-4194-3, 2018
- [8] Editorial Board - *Scientia et Technica Journal* - ISSN 2344-7214, **Universidad Tecnológica de Pereira, Colombia**, 2018
- [9] *Grants of Internal Research Projects: Universidad Nueva Granada - Colombia*, 2018
- [10] International Scientific Committees Colombia-U.S. Workshop on Nanotechnology - 2017
- [11] Editorial Board - *Respuestas Journal*, **Universidad Francisco de Paula Santander, Colombia**, 2016

**Editorial Review Committee Publons**

- Advanced Theory and Simulations
- Coatings
- Energies
- Empresa Editorial Universidad Nacional De Colombia
- IEEE Transactions on Plasma Science
- IoT
- InTechOpen - Chapter & Book
- Igi-global - Chapter & Book
- IOP Conference Series
- Journal of Applied Physics
- Journal of Electrical Engineering
- Journal of Vacuum Science Technology A: Vacuum, Surfaces, and Films
- MRS Communications
- Journal of Vacuum Science Technology B: Microelectronics and Nanometer Structures
- Physica Status Solidi (a)
- Revista Ingeniería, Investigación y Desarrollo
- Revista Respuestas
- Revista de la Facultad de Ciencias - UNAL - Medellín
- Revista Facultad De Ingeniería Universidad De Antioquia
- Lámpsakos
- Scientia Et Technica
- Sensors
- Surface and Interface Analysis
- Surface Review and Letters
- Water