

UPDATED CURRICULUM VITAE

DR. FLORENCIO ELOY HERNANDEZ

ASSOCIATE PROFESSOR OF CHEMISTRY,

UNIVERSITY OF CENTRAL FLORIDA

“AUGUST 20TH, 2015”

CURRICULUM VITAE - FLORENCIO ELOY HERNANDEZ

University of Central Florida • Department of Chemistry and CREOL/ The College of Optics and Photonics •
 Nonlinear Optical Materials and Sensors Laboratory • P.O. Box 162366, Orlando, FL 32816-2366
 • Telephone: (407) 823-0843 • Fax: (407) 823-2252 • e-mail: florencio.hernandez@mail.ucf.edu

BACKGROUND

I am Associate Professor of Chemistry and Optics at the University of Central Florida (UCF), in Orlando. I received my PhD from the Universidad Central de Venezuela (Venezuela) in collaboration with L'Université Franche-Comté (France) in 1996, for my investigations of the development and application of the double-beam Z-scan to study linear and nonlinear absorption processes via thermal lensing, performed under the supervision of Aristide Marcano and Hervé Maillotte. I spent three years as a postdoctoral associate in the physics department at Venezuelan Institute for Scientific Research, and three years as Visiting Research Scientist under the supervision of Eric Van Stryland, before joining the Department of Chemistry at UCF in 2002. *My research focuses in the application of state-of-the-art two-photon circular dichroism (TPCD) to understand: The fundamental activity of chiral molecules and macromolecules in biological processes, mainly those involved in Alzheimer disease; The properties of optically active asymmetric catalysts used in the pharmacological and flavor industry; The design of novel metamaterials leading to the construction of perfect lenses and cloaking devices; The design of novel chemical, explosive, radiological, and biological sensors for environmental analysis, homeland security and the biomedical fields.*

Education:

1992-1996	Doctor in Science (Major in Physical-Chemistry) Universidad Central de Venezuela (Aristide Marcano) and L'Université Franche-Comté (Hervé Maillotte)	Caracas, Venezuela Besançon, France.
1987-1992	Bachelor Degree in Chemistry "Licenciado en Química" Universidad Central de Venezuela	Caracas, Venezuela

Appointments:

Since 04/16/08	Associate Professor of Chemistry and Optics, Department of Chemistry and CREOL/The College of Optics and Photonics, University of Central Florida	Orlando, FL
08/08/02 to 04/16/08	Assistant Professor of Chemistry and Optics, Department of Chemistry and CREOL/The College of Optics and Photonics, University of Central Florida	Orlando, FL
08/08/01 to 05/08/02	Visiting Assistant Professor of Chemistry, Department of Chemistry, University of Central Florida	Orlando, FL
10/15/98 to 8/08/02	Visiting Research Scientist , CREOL/The College of Optics and Photonics, (E. W. Van Stryland), University of Central Florida	Orlando, FL
01/01/97 to 02/31/99	Postdoctoral Research Fellow The Venezuelan Institute for Scientific Research (IVIC)	Caracas, Venezuela

RESEARCH ACTIVITIES

Combining themes at the forefront of optics, spectroscopy and physical chemistry, my research focuses in the understanding and application of state-of-the-art two-photon circular dichroism (TPCD), and the study the physical-chemical and optical properties of nanomaterials and their interaction with tailored organic molecules. Developing these two main areas will lead to a deeper understating of the fundamental properties and activity of chiral molecules, asymmetric catalysts and novel metamaterials, as well as the design of novel chemical, explosive, radiological, and biological sensors for environmental analysis, homeland security and the biomedical fields. My research has produced seminal contributions to the field of optical materials and nonlinear optics, having **published 64 peer-reviewed publications in high impact-factor journals since I joined UCF**. These results have allowed the establishment of important international collaborations, and have been recognized by multiple invited talks at conferences and institutions around the world. **My work has produced a total of 1,331 citations (~1,259 while at UCF), with an h-index 22 according to ISI Web of Sciences. According to Google Scholar my total # of Citations = 1722, h-index = 26, i10-index = 49.** Evidence of my success in research at UCF is my UCF Research Incentive Award 2009-2010.

Research Grants:

- Project Title:* EAGER_IDBR: Development of a two-photon circular dichroism spectrometer with extreme spectral capabilities in the far UV (FUV-TPCD)
Source of Support: NSF- IDBR & CMI (IDBR-1422826)
Total Award Amount: \$ 225,010 (PI 100%)
Total Award Period: Septiembre 2014-August 2016
- Project Title:* EAGER:Photo-Activated Current and Magnetization in Au-Nanorings (PACMAN)
Source of Support: NSF-ECCS (ELECT, PHOTONICS, & MAG. DEVICE) (ECCS-1238738)
Total Award Amount: \$80,000 (PI 40%) [Co-PIs Enrique del Barco & Shengli Zou]
Total Award Period: August 2012-July 2014
- Project Title:* “Field-deployable, nano-sensing approach for real-time detection of free mercury, speciation and quantification in surface stream waters and groundwater samples at the U.S. Department of Energy contaminated sites”
Source of Support: DOE (TES_SBR-1049185)
Total Award Amount: \$523,882 (Co-PI 50%), [PI Andres Campiglia]
Total Award Period: June 2010-May 2014
- Project Title:* "Purchase and Development of a Cyber-Enabled Broadly Tunable kHz Femtosecond Laser System"
Source of Support: NSF-CHE, Chemical Instrumentation (NSF-ARRA-0840431)
Total Award Amount: \$500,000 (Co-PI 30%) [PI Kevin D. Belfield, Co-PIs Steve Kuebler & Andre Gesquiere]
Total Award Period: June 2009
- Project Title:* "Self-Organized Aggregates in Photonics (SOAP): A comprehensive approach to multiphoton absorbing supramolecular assemblies"
Source of Support: NSF-CHE, Collaborative Research in Chemistry (CHE-0832622)
Total Award Amount: \$1,800,000 (Co-PI 25%) [PI Kevin D. Belfield, Co-PIs Artem Masunov & Tiantiana V. Timofeeva]+ \$10,000 (100% - RET Summer 2010)
Total Award Period: September 2008-August 2013

6. *Project Title:* "LIBS-THz spectroscopy for improvised explosive devices (IED) detection"
Source of Support: IAI-DOD
Total Award Amount: \$80,000 (100% PI)
Total Award Period: November 2007-March 2009 (Phase II)

7. *Project Title:* "Understanding clotting activation in cancer: a study of the structure and in vivo behavior of tumor-derived microparticles"
Source of Support: GALA Florida Hospital - UCF
Total Award Amount: \$ 40,000 (PI 60%) [Co-PI Monica Davila]
Total Award Period: May 2007-May 2008

8. *Project Title:* Radiation Combining terahertz time- domain spectroscopy (THz- TDS) with LIBS for hazardous materials detection
Source of Support: IAI-DOD
Total Award Amount: \$16,000 (100% PI)
Total Award Period: November 2006-March 2007 (Phase I)

9. *Project Title:* Sensitive Chemical Vapor Detection using Light Induced Fluorescence and LIBS
Source of Support: Lockheed Martin
Total Award Amount: \$39,320 (100% PI)
Total Award Period: November 2005-March 2006 (Phase III)

10. *Project Title:* Chemical Vapor Detection Using Laser Induced Breakdown (LIBS)
Source of Support: Lockheed Martin
Total Award Amount: \$37,723 (100% PI)
Total Award Period: March 2005-August 2005 (Phase II)

11. *Project Title:* Remote vapor detection optical nose (REVADON)
Source of Support: Lockheed Martin
Total Award Amount: \$32,608 (100% PI)
Total Award Period: October 2004-December 2004 (Phase I)

12. *Project Title:* RF-Smart Nanostructures
Source of Support: Nanotek Consortium, Kraft Food
Total Award Amount: \$4,000 (100% PI)
Total Award Period: January 2005-December 2005

13. *Project Title:* Optical, photonic, and electronic materials ACS PRF summer school
Source of Support: Petroleum Research Fund
Total Award Amount: \$31,080 (*Senior Personnel*) [PI Kevin D. Belfield]
Total Award Period: May 2005-Summer 2005

14. *Project Title:* Laser-assisted direct metallization for microelectronic applications
Source of Support: Florida Photonics Center for Excellence
Total Award Amount: \$15,000 (Co-PI 70%) [PI Kathleen Richardson]
Total Award Period: August 2004-July 2005

15. *Project Title:* Radiation decay engineering in multiphoton absorber using nanoparticles

Source of Support: UCF-Internal Research Award

Total Award Amount: \$7,500 (100% PI)

Total Award Period: August 2004-July 2005

Teaching-Oriented Grants:

16. *Project Title:* “Orlando Chemistry Tutoring, Enrichment, and Training Camp (OCTET)”

Source of Support: American Chemical Society - Innovative Program grant

Total Award Amount: \$3,000 (PI 50%), [Co-PI Yi Liao]

Total Award Period: October 2011-October 2012

17. *Project Title:* "UCF Technology Fee - Computational Tools for Chemistry Students"

Source of Support: University of Central Florida

Total Award Amount: \$140,000 (Co-PI 25%) [PI Kevin D. Belfield, Co-PI Shengli Zou & Robert Igarashi]

Total Award Period: January 2010

18. *Project Title:* Curriculum Development Educational Award

Source of Support: Ocean Optics

Total Award Amount: \$1,840 (100% PI)

Total Award Period: August 2004

Pending Proposals:

19. *Project Title:* Freshmen Undertake Networking in Science, Technology, Engineering and Mathematics (FUN-STEM)

Source of Support: NSF_EHR (PI)

Total Award Amount: \$499,951

Total Award Period: 08/07/2015-08/06/2018

Status: Pending

20. *Project Title:* Noninvasive Oral Glucose Sensor using Au-Nanorods.

Source of Support: Start-up Quest

Total Award Amount: \$354,939 (100% PI)

Total Award Period: May 2015-May 2017

Status: Pending

Honors & Awards:

- Since 02/2014 Invited to serve as Associate Editor of the IEEE Journal of Photonics
- 2012 Invited to serve in the Editorial Board of Dataset Papers in Physical Chemistry, Hindawi Publishing Corporation
- 2010-2011 Chair Elect/Chair of the American Chemical Society-Orlando Local Section
- 2010-2011 Teaching Incentive Program (TIP) Award presented by UCF
- 2011 Graduated a Ph.D. student, Dr. Carlos Toro, with the University of Central Florida and College of Sciences Outstanding Dissertation Award 2011

- Since 2010 Full Faculty Graduate Member in the College of Graduate Studies at UCF
- 2010 Invited to serve in the Advisory Board of BIT's 1st Annual World Congress of Nanomedicine 2010, Beijing, China
- 2009-2010 Research Incentive Award (RIA) presented by UCF
- 2005-2006 Teaching Incentive Program (TIP) Award presented by UCF
- 2004 American Chemical Society (Orlando Section) Outstanding Chemist Award
- 2001-Awarded by Laser Focus World, for excellence in technical communications
- 1997-Awarded by the Venezuelan Researcher Promotion Program (PPI)
- 1994-Awarded by the Venezuelan Researcher Promotion Program (PPI)
- 1992- BID-CONICIT Fellowship for Ph.D. in science (1992)

Societies:

- OSA (173-233), IEEE, ACS (2392828), Societé Française d'Optique

Communication languages:

- Spanish (native), English (Fluent), French (Fluent)

Collaborations:

Throughout my tenure at UCF I have had the opportunity to establish many fruitful and solid collaborations with international and national scientist. These collaborations have contributed to the development of my career and my success attracting external funding and publishing high quality peer-reviewed articles in well-recognized journals. Next, I present the list of my most notorious international and national collaborators with whom I have constructively published and/or received external funding.

Internationals:

- Dr. Antonio Rizzo (IPCF-CNR, Pisa, Italy)
- Dr. Cleber R. Mendonca, (U. Sao Paulo, Brasil)
- Dr. Lorenzo Echevarria (USB, Caracas, Venezuela)
- Dr. Fabrizio Santoro (IPCF-CNR, Pisa, Italy)
- Dr. Mykhailo Bondar, (Institute of Physics, Prospect Nauki, Ukraine)
- Dr. Olga Przhonska, (Institute of Physics, Prospect Nauki, Ukraine)
- Dr. Juhani Huuskonen, (Department of Chemistry, University of Jyväskylä, Finland)
- Dr. Magdalena Cid (U. Vigo, Vigo, Spain)
- Dr. Jeanne Crassous (U. Rennes, Rennes, France)
- Dr. Irena G. Stara (ASCR, Prague, Czech Republic)
- Dr. Ivo Stary (ASCR, Prague, Czech Republic)
- Dr. Leonardo Deboni (U. Sao Paulo, Brasil)
- Dr. Remy Passier (U. Franche-Comte, France)
- Dr. Na Lin (RITAN, Sweden - Shandong University)
- Dr. Zahra Dezhahang, (Department of Chemistry, University of Alberta, Canada)
- Dr. Mohammad Reza Poopari, (Department of Chemistry, University of Alberta, Canada)
- Dr. Yunjie Xu, (Department of Chemistry, University of Alberta, Canada)
- Dr. Carlos Borrás (USB, Caracas, Venezuela)

Nationals:

- Dr. Kevin D. Belfield, New Jersey Institute of Technology, NJ
- Dr. Andres Campiglia, Department of Chemistry, UCF
- Dr. Artem Masunov, NSTC & Department of Chemistry, UCF
- Dr. Stephen M. Kuebler, Department of Chemistry & CREOL, UCF
- Dr. Andre Gesquiere, NSTC & Department of Chemistry, UCF
- Dr. Enrique del Barco, Department of Physics, UCF
- Dr. Shengli Zou, Department of Chemistry, UCF
- Dr. Suren Tatulian, Department of Physics, UCF
- Dr. Andrew Frazer, Department of Chemistry, UCF
- Dr. Fernando Rivera, Department of Sociology, UCF
- Dr. Sheng Yao, Department of Chemistry, UCF
- Dr. Mohanraja Kumar, USF

Publications in Peer-Reviewed Journals:

Total # of # Articles = 81, Total # of Citations = 1331, h-index = 22 (ISI Web of Sciences)

Total # of # Articles = 81, Total # of Citations = 1722, h-index = 26, i10-index = 49 (Google Scholar)

1. D. Iacocca, P. Patiño, M. Roperio and F. E. Hernández, "Oxidation of some vapor free liquid organic compounds by a low pressure oxygen plasma", *Revista Brasileira de Aplicacoes de Vacuo* **11**, 126-134 (1992)
2. V. P. Kozich, A. Marcano, F. E. Hernández and J. Castillo, "Differential thermal lensing to study two-photon absorption spectra in solution", *Applied Spectroscopy* **48**, 1419-1422 (1994)
3. V. P. Kozich, A. Marcano, F. E. Hernández and J. Castillo, "Dual-beam time resolved Z-scan in liquids to study heating due to linear and nonlinear light absorption", *Applied Spectroscopy* **48**, 1506-1512 (1994)
4. P. Patiño, F. E. Hernández and S. Rondon, "Reaction of O (³P) with secondary C-H bonds of saturated hydrocarbons in non-equilibrium plasmas" *Plasma Chemistry and Plasma Processing* **15**, 159-171 (1995)
5. Valery Kozich, Florencio E. Hernández and A. Marcano O., "Pulse-induced thermal lensing in Kerr media", *Applied Spectroscopy* **49**, 1804-1808 (1995)
6. F. E. Hernández, A. Marcano O. and H. Maillotte, "Sensitivity of the total beam profile distortion Z-scan for measurements of nonlinear refraction", *Optics Communications* **134**, 529-535 (1997)
7. F. Cherioux, P. Audebert, L. Grossard, F. E. Hernández, A. Lacourt and H. Maillotte, "New third order nonlinear polymers functionalized with DR and DO chromophores with increased stability", *Chemistry of Materials* **9**, 2921-2925 (1997)
8. Marcano O., F. E. Hernández, A. D. Sena, "Two-color near field eclipsing Z-scan technique for the determination of nonlinear refraction", *Journal of the Optical Society of America B* **14**, 3363-3366 (1997)
9. F. E. Hernández, A. Marcano, Y. Alvarado, A. Biondi, H. Maillotte, "Measurement of nonlinear refraction index and two-photon absorption in a new organometallic compound", *Optics Communications* **152**, 77-82 (1998)
10. M. E. Zoghbi, P. Bolaños, C. Villalba-Galea, A. Marcano, F. E. Hernández, M. Fill, and A. L. Escobar, "Spatial Ca²⁺ Distribution in Contracting Skeletal and Cardiac Muscle Cells", *Biophys J.* **78**, 164-173 (2000)

11. F. E. Hernández, S. Yang, E. W. Van Stryland, and D. J. Hagan, “ High dynamic range cascaded-focus optical limiter”, *Opt. Lett.* **25**, 1180 (2000)
12. F. E. Hernández, S. Yang, V. Dubikovski, W. Shensky II, E. W. Van Stryland, and D. J. Hagan, “ Dual focal plane visible optical limiter”, *J. of Nonlinear Opt. Phys. and Mat.* **9**, 423 (2000)
13. F. E. Hernández, S. Yang, D. Hagan, and E. W. Van Stryland, “Wavelength independent “Babinet Compensator Optical Limiter” (BCOL)”, *LCMC* **358**, 301 (2001)
14. F. E. Hernández, W. Shensky III, Ion Cohanoschi, D. J. Hagan and E. W. Van Stryland, “India Ink / CS₂ Used as a Broadband Laser Safety Device”, *Laser Focus World* **37**, 125+ (2001). (Invited paper)
15. F. E. Hernández, W. Shensky III, Ion Cohanoschi, D. J. Hagan and E. W. Van Stryland, “Viscosity Dependence of Optical Limiting in Carbon Black Suspensions”, *Applied Optics-LP* **41**, 1103 (2002)
16. Kevin D. Belfield, Yong Liu, Raluca A. Negres, Meigong Fan, Guilan Pan, David J. Hagan, and F. E. Hernandez, “Two-Photon photochromism of an organic material for holographic recording”, *Chemistry of Materials* **14**, 3663 (2002)
17. Shensky, W., III; Cohanoschi, I.; Hernandez, F. E.; Van Stryland, E. W.; Hagan, D. J. “Carbon-black suspension based broadband optical limiter”, *Trends in Optics and Photonics* **79** (Nonlinear Optics), 266-268. (2002)
18. Florencio E. Hernández, Kevin D. Belfield, Ion Cohanoschi, “Symmetrical charge transfer enhances three-photon absorption in Fluorene Derivatives”, *Chem. Phys. Lett.* **391**, 22-26 (2004)
19. Kevin D. Belfield, Florencio E. Hernandez, Ion Cohanoschi, Mykhailo V. Bondar, Eric W. Van Stryland, Two-photons and Beyond: 2, 3, and 4 Photon Absorption in Conjugated Fluorenes, *Polymeric Materials: Science and Engineering* **91**, 346-347 (2004)
20. Florencio E. Hernández, Kevin D. Belfield, Ion Cohanoschi, Mihaela Balu and Katherine. J. Schafer, “Three and Four-Photon Absorption of a Multiphoton Absorbing Fluorescent Probe”, *Appl. Opt.* **43**, 5394-5398 (2004)
21. K.D. Belfield, M.V. Bondar, F.E. Hernandez, A.R. Morales, O.V. Przhonska, and K.J. Schafer, “Nonlinear transmission and Excited-state absorption in fluorene derivatives”, *Appl. Opt.* **43**, 6339-6343 (2004)
22. Ion Cohanoschi, Kevin D. Belfield, Florencio E. Hernández, “Three-Photon Absorption Enhancement in Symmetrical Charge Transfer Pull-Pull Fluorene Derivatives”, *Chem. Phys.Lett.* **406**, 462-466 (2005)
23. Florencio E. Hernández, Shenjiang Yu, Marisol García, Andrés D. Campiglia, “Fluorescence lifetime Enhancement of Organic Chromophores Attached to Gold Nanoparticle”, *J. Phys. Chem. B* **109**, 9499-9504 (2005)
24. Carlos Zapata-Rodriguez, Florencio E. Hernández, “Focal squeeze in axicons”, *Opt. Comm.* **254**, 3-9 (2005)
25. Ion Cohanoschi, Florencio E. Hernández, “Surface Plasmon Enhancement of Two- and Three-Photon Absorption of Hoechst 33258 dye in Activated Gold Colloid Solution”, *J. Phys. Chem. B* **109**, 14506-14512 (2005)
26. Cohanoschi, A. Barbot, K. D. Belfield, S. Yao, F. E. Hernández, “Mega Three-Photon Absorption Cross-section Enhancement in Pseudoisocyanine J-Aggregates”, *J. Chem. Phys.* **123**, 231104 (2005)
27. Kevin D. Belfield, Mykhailo V. Bondar, I. Cohanoschi, Florencio E. Hernandez, Oleksiy D. Kachkovsky, Olga V. Przhonska, Sheng Yao, “ Excited-state absorption and anisotropy properties of two-photon absorbing fluorene derivatives”, *Appl. Opt.* **44**, 7232-7238 (2005)
28. Kevin D. Belfield, Claudia C. Corredor, Alma R. Morales, Sheng Yao, Marie A. Dessources, and Florencio E. Hernandez, “Synthesis and characterization of new fluorene-based singlet oxygen sensitizers”, *J. Fluorescence* **16**, 105-110 (2005)

29. Ion Cohanoschi,^{*} Lorenzo Echevarria, Florencio E. Hernández, “Three-Photon Absorption Measurements in Hematoporphyrin IX: “Ground-breaking Opportunities in Deep Photodynamic Therapy” Chem. Phys. Lett. **419**, 33-36 (2005)
30. K. D. Belfield, M. Bondar, F. E. Hernandez, , O. Przkonska, S. Yao, “Two-photon absorption of a supramolecular pseudoisocyanine-J-aggregate assembly”, Chemical Physics **320**, 118-134 (2006)
31. Matt Rex, Florencio E. Hernandez, and Andres Campiglia, “Pushing the limits of mercury sensor with gold nanorods”, Anal. Chem. **78**, 445-451 (2006)
32. Ion Cohanoschi, Carlos Toro, Florencio E. Hernández, “The impact of π conjugation length on three-photon absorption cross-section of fluorine derivatives” J. Chem. Phys. **124**, 194707 (2006)
33. Sheng Yao, Katherine J. Schafer-Hales, Ion Cohanoschi and Florencio E. Hernández, Kevin D. Belfield, “A Water Soluble Diaminostilbene Derivative as a Two-Photon Fluorescent Probe ” Synlett. **12**, 1863-1866 (2006)
34. Claudia C. Corredor, Kevin D. Belfield, Mykhailo V. Bondar, Olga V. Przhonska, Florencio E. Hernandez, Oleksiy D. Kachkovsky, “One and Two-Photon Photochromism of 3,4-Bis-(2,4,5-trimethylthiophen-3-yl)furan-2,5-dione” Journal of Photochemistry and Photobiology A: Chemistry. **184**, 177 (2006)
35. Ion Cohanoschi, Marisol García, Carlos Toro, Kevin D. Belfield, Florencio E. Hernández, “Three-Photon Absorption of a New Series of Halogenated Fluorene Derivatives” Chem. Phys. Lett. **430**, 133-138 (2006)
36. Ion Cohanoschi, Carlos Toro, Kevin D. Belfield, Florencio E. Hernández, “Solvent effects on the three-photon absorption cross-section of a highly conjugated fluorene derivative” J. Chem. Phys. **125**, 161102 (2006)
37. Kevin D. Belfield, Mykhailo V. Bondar, Claudia C. Corredor, Florencio E. Hernandez, Olga V. Przhonska, Sheng Yao, “Two-photon photochromism of a diarylethene derivative enhanced by Förster’s resonance energy transfer from two-photon absorbing fluorenes” Chem. Phys. Chem. **7**, 2514 (2006)
38. Marisol Garcia, Celine Perego, Florencio E. Hernandez, “Truly Non Invasive Glucose Optical Sensor Using Gold Nanoparticles”, Chemical & Engineering News, (Web Site March 28, 2006) News of the Week April 03, 15 (2006)
39. Horacio Carias, Manuel Marquez, Florencio E. Hernández, “A Wet Chemistry Method for the Construction of Silver Nanocapacitors”, J. Nanoscience and Nanotechnology **7**, 1-4 (2007)
40. L. Petit, J. Griffin, N. Carlie, V. Jubera, M. García, F. E. Hernández, K. Richardson, “Luminescence properties of Eu^{3+} or Dy^{3+} / Au co-doped SiO_2 nanoparticles”, Mat. Lett. **61**, 2879 (2007)
41. S. J. Andrasik, K. D. Belfield, M. V. Bondar, F. E. Hernandez, A. R. Morales, O. V. Przhonska, S. Yao, “One- and Two-photon Singlet Oxygen Generation with New Fluorene -based Photosensitizers”, Chem. Phys. Chem. **8**, 399 (2007)
42. Ion Cohanoschi, Sheng Yao, Kevin D. Belfield, Florencio E. Hernández, “Effect of the concentration of organic dyes on their surface plasmon enhanced effective two-photon absorption cross-section”. J. Appl. Phys. **101**, 86112 (2007)
43. Ion Cohanoschi, Carlos Toro, Athur Thibert, Shengli Zou, Florencio E. Hernández, “Surface Plasmon Fluorescence Enhancement on Gold Nanoparticles film Suspended at a Liquid-Liquid Interfaces”, Plasmonics **2**, 89-94 (2007)
44. D. S. Corrêa, L. De Boni, L. Misoguti, and C. R. Mendonça, Ion Cohanoschi and F. E. Hernandez, “Z-scan theoretical analysis for three, four and five-photon absorption”, Opt. Comm. **277**, 440 (2007)
45. Kevin D. Belfield, Mykhailo V. Bondar, Florencio E. Hernandez, Olga V. Przhonska, Sheng Yao, “Two-Photon Absorption Cross-Section Determination for Fluorene Derivatives: Analysis of the

- Methodology and Elucidation of the Origin of the Absorption Processes”, *J. Phys. Chem. B* **111**, 12723 (2007)
46. Leonardo De Boni, Carlos Toro, and Florencio E. Hernández, “Pump polarization-state preservation of white-light supercontinuum generation”, *Optics Express*. **16**, 957 (2008)
 47. Leonardo De Boni, Carlos Toro, Artëm E. Masunov, and Florencio E. Hernández, “Untangling the Excited States of DR1 in Solution: An Experimental and Theoretical Study”, *J. Phys. Chem. A* **112**, 3886 (2008)
 48. Carlos Toro, Arthur Thibert, Leonardo De Boni, Artem Masunov, and Florencio E. Hernández, “Unexpected Fluorescence Emission of Disperse Red 1 in Solution at Room Temperature”, *J. Phys. Chem. B* **112**, 929 (2008)
 49. Kevin D. Belfield, Mykhailo V. Bondar, Florencio E. Hernandez, Olga V. Przhonska, “Linear and nonlinear photophysical characterization and optical power limiting of fluorenylperylene diimide-based derivatives”, *J. Phys. Chem. C* **112**, 5618 (2008)
 50. Carlos Toro, Leonardo De Boni, Sheng Yao, Kevin D. Belfield and Florencio E. Hernández, “Photophysical characterization of a highly conjugated bipyridyl-based dye synthesized by a unique two-step approach”, *J. Phys. Chem. B* **112**, 12185 (2008)
 51. Leonardo De Boni, Carlos Toro, Erin Leigh Wood, Florencio E. Hernández, “Optical Saturable Absorption in Gold Nanoparticles”, *Plasmonics* **3**, 171 (2008)
 52. Leonardo De Boni, Carlos Toro, Florencio E. Hernández, “Synchronized double L-scan technique for the simultaneous measurement of polarization dependence two-photon absorption in chiral molecules”, *Optics Letters* **33**, 2958 (2008)
 53. Belfield, Kevin; Bondar, Mykhailo; Hernandez, Florencio; Masunov, Artem; Mikhailov, Ivan; Morales, Alma; Przhonska, Olga; Yao, Sheng, “Two-photon absorption properties of new fluorene-based singlet oxygen photosensitizers”, *Journal of Physical Chemistry C* **13**, 4706 (2009)
 54. Belfield, Kevin; Bondar, Mykhailo; Yanez, Ciceron; Hernandez, Florencio; Przhonska, Olga, “One- and two-photon stimulated emission depletion of a sulfonyl-containing fluorene derivative”, *J. Phys. Chem. C* **113**, 7101 (2009)
 55. Carlos Toro, Leonardo De Boni, Sheng Yao, Artem Masunov, Kevin D. Belfield, Florencio E. Hernández, “Linear and nonlinear optical characterization of a monomeric symmetric squaraine-based dye in solution”, *The Journal of Chemical Physics* **130**, 214504/1 (2009)
 56. Kevin D. Belfield, Mykhailo V. Bondar, Ciceron O. Yanez, Florencio E. Hernandez, Olga Przhonska, “Two-photon absorption and lasing properties of new fluorene derivatives”, *Journal of Materials Chemistry* **19**, 7498 (2009)
 57. Leonardo De Boni, Carlos Toro, Florencio E. Hernández, “Excited state absorption study in Hematoporphyrin IX”, *The Journal of Fluorescence* **20**, 197 (2010)
 58. Leonardo De Boni, Carlos Toro, Sérgio C. Zilio, Cleber R. Mendonca, Florencio E. Hernandez, “Azo-group dihedral angle torsion dependence on temperature: A theoretical-experimental study”, *Chem. Phys. Lett.* **487**, 226 (2010)
 59. Carlos Toro, Leonardo De Boni, Na Lin, Fabrizio Santoro, Antonio Rizzo, Florencio E. Hernández, “Two-Photon Absorption Circular Dichroism: A new twist of nonlinear spectroscopy”, *Chemistry: A European Journal* **16**, 3504 (2010)
 60. Belfield, Kevin; Andrade, Carolina; Yanez, Ciceron; Bondar, Mykhailo; Hernandez, Florencio; Przhonska, Olga “New Two-photon Absorbing Probe with Efficient Superfluorescent Properties”, *J. Phys. Chem. A* **114**, 14087 (2010)
 61. Rémy Passier, James P. Ritchie, Carlo Toro, Carlos Diaz, Artëm E. Masunov, Kevin D. Belfield and Florencio E. Hernandez, “Thermally controlled preferential molecular aggregation state in a thiacyanocyanine dye”, *J. Chem. Phys.* **133**, 134508/1 (2010)

62. Carlos Toro, Leonardo De Boni, Na Lin, Fabrizio Santoro, Antonio Rizzo, Florencio E. Hernández, "Two-Photon Absorption Circular-Linear Dichroism on Axial Enantiomers", *Chirality* **22**, E202 (2010)
63. Na Lin, Fabrizio Santoro, Xian Zhao, Carlos Toro, Leonardo De Boni, Florencio E. Hernández, Antonio Rizzo, "Computational Challenges in Simulating and Analyzing Experimental Linear and Nonlinear Circular Dichroism Spectra. R-(+)-1,1'-bi(2-Naphtol) as a Prototype Case", *J. Phys. Chem. B* **115**, 811 (2011)
64. Carlos Toro, Rémy Passier, Carlos Diaz, Tero Tuuttila, Kari Rissanen, Juhani Huuskonen, Florencio E. Hernández, "Unveiling electronic transitions in three novel chiral azo-compounds using linear and nonlinear circular dichroism: A theoretical-experimental study", *J. Phys. Chem. A* **115**, 1186 (2011)
65. Belfield, Kevin; Bondar, Mykhailo; Hernandez, Florencio; Przhonska, Olga; Wang, X. H.; Yao, S., "A superfluorescent fluorenyl probe with efficient two-photon absorption", *Phys. Chem. Chem. Phys.* **13**, 4303 (2011)
66. Florencio E. Hernandez and Antonio Rizzo, "Two-photon polarization dependent spectroscopy in chirality: A novel experimental-theoretical approach to study optically active systems", *Molecules* **16**, 3315 (2011)
67. Carlos Diaz, Andrew Frazer, Alma Morales, Supriyo Ray, Kevin D. Belfield, Florencio E. Hernández "Structural identification of a novel axially-chiral binaphthyl fluorene based Salen ligand in solution using electronic circular dichroism: A Theoretical-experimental analysis", *J. Phys. Chem. A* **166**, 2453 (2012)
68. Carlos Diaz, Na Lin, Carlos Toro, Remy Passier, Antonio Rizzo, and Florencio E. Hernández, "The effect of the π -electron delocalization curvature on the two-photon circular dichroism of molecules with axial chirality", *J. Phys. Chem. Lett.* **3**, 1808–1813 (2012) **Invited online presentation: [HTTP://PUBS.ACS.ORG/IAPPS/LIVESLIDES/PAGES/INDEX.HTM?MSCNO=JZ300577E](http://pubs.acs.org/iapps/liveslides/pages/index.htm?MSCNO=JZ300577E)*
69. Warinya Chemnasiry and Florencio E. Hernández, "Gold nanorod-based mercury sensor using functionalized glass substrates", *Sensors and Actuators B* **173**, 322-328 (2012).
70. Marcelo G. Vivas, Carlos Diaz, Lorenzo Echevarria, Cleber R. Mendonca, Florencio E. Hernández, Leonardo De Boni, "Two-Photon Circular-Linear Dichroism of Perylene in Solution: A Theoretical-Experimental Study", *J. Phys. Chem B* **117**, 2742-2747 (2013)
71. Carlos Diaz, Lorenzo Echevarria, Florencio E. Hernández "Overcoming the existent computational challenges in the ab-initio calculations of the two-photon circular dichroism spectra of large molecules using a fragment-recombination approach", *Chem. Phys. Lett.* **568-569**, 176-183 (2013)
72. Lorenzo Echevarria, Florencio E. Hernandez, "Educational Light-Pod: Understanding the Fundamentals of Analog Transmission using Photo-Acoustic Modulation of Fluorescence", *J. Chem. Ed.* **90**, 900-903 (2013)
73. Jose A. Tiburcio-Moreno, Lorenzo Echevarria, Carlos Diaz, J. J. Alvarado Gil and Florencio E. Hernandez, "Polarization dependent two-photon absorption spectroscopy on a naturally occurring biomarker (Curcumin) in solution: A Theoretical-experimental study", *Chem. Phys. Lett.* **583**, 160-164 (2013)
74. Carlos Diaz, Lorenzo Echevarria, Florencio E. Hernández "Conformational study of an axially-chiral Salen ligand in solution using two-photon circular dichroism and the fragment-recombination approach", *J. Phys. Chem A.* **117**, 8416-8426 (2013)
75. Carlos Diaz, Lorenzo Echevarria, Antonio Rizzo, Florencio E. Hernández, "Two-photon circular dichroism of an axially dissymmetric disphosphine ligand with strong intramolecular charge transfer, *J. Phys. Chem. A* **118**, 940-946 (2014).

76. Yuly Vesga, Carlos Diaz, Mary Higgs, Florencio E. Hernández, “Two-photon circular dichroism of molecular structures simulating L-tryptophan residues in proteins with secondary structures, Chem. Phys. Lett. **601**, 6-12 (2014) - *Editor’s Choice*.
77. Zahra Dezhahang, Mohammad Reza Poopari, Florencio E. Hernandez, Carlos Diaz, “Diastereomeric Preference of a Triply Axial Chiral Binaphthyl Based Molecule: a Concentration Dependent Study by Chiroptical Spectroscopies”, PCCP **16**, 12959-12567 (2014) - *Recent Hot PCCP - highlighted in the Journals Blog and Twitter*.
78. Yuly Vesga, Carlos Diaz, Florencio E. Hernández “Two-photon circular dichroism of molecular structures simulating L-Try, L-Phe and L-His residues in proteins with secondary structures”, RSC Adv. **4**, 60974-60986 (2014).
79. Carlos Diaz, Ligia Llovera, Lorenzo Echevarria, Florencio E. Hernández, “Assessment of the Tautomeric Population of Benzimidazole Derivatives in Solution: A Simple and Versatile Theoretical-Experimental Approach”, In Press, J. Computer-Aided Molecular Design **29**, 143-154 (2015)
80. Carlos Diaz, Lorenzo Echevarria, Yuly Vesga, Irena Stara, Ivor Stary, Emmanuel Sager, Chengsuo Shen, Mehdi El Sayed Moussa, Nicolas Vanthuyne, Jeanne Crassous, Antonio Rizzo, Florencio E. Hernández, “Two-Photon Absorption and Two-Photon Circular Dichroism of Hexahelicene Derivatives: A Study of the Effect of the Nature of Intramolecular Charge Transfer”, RSC Advances **5**, 17429-17437 (2015)
81. Daniele Padula, Inmaculada R. Lahoz, Carlos Díaz, Florencio E. Hernández, Lorenzo Di Bari, Antonio Rizzo, Fabrizio Santoro and M. Magdalena Cid, “A combined experimental-computational investigation to uncover the puzzling (Chiro)-optical response of pyridocyclophanes: One- and Two-photon Spectra”, Chemistry: A European Journal **21**, 1-13 (2015)

Articles under review or in preparation:

1. Julie Donnelly, Carlos Diaz, Florencio E. Hernandez, “OCTET & BIOTEC: A Model of a Summer Intensive Designed to Cultivate the Future Generation of Young Leaders in STEM”, Submitted to the Journal of Chemical Education (2015).
2. Roosvely Diaz, Carlos Díaz, Fernando Rivera, Florencio E. Hernández, “Evaluation of the Use of Social Networking Platforms in Freshmen College Education: Assessing the Student’s Acceptance and Preferences of technology”, in preparation to Learning, Media and Technology (2015)
3. Julie Donnelly, Florencio E. Hernandez, “Conformational Study of Δ^9 -tetrahydrocannabinol (Δ^9 -THC) and cannabidiol (CBD) via Linear and Nonlinear Circular Dichroism”, in preparation to Chem. Phys. Lett. (2015)

Book Chapters and Wikipages:

1. Florencio E. Hernandez, “Reviews in Plasmonics 2010, Springerlink, Chapter 7, pages 185-203, “Optics & Plasmonics: Fundamental Studies and Applications”, 2011 (Invited)
2. Two-photon circular dichroism: http://en.wikipedia.org/wiki/Two-photon_circular_dichroism (2014)

Proceedings:

1. A. Marcano O., A. Solis, F. E. Hernandez and H. Maillotte, "Total profile distortion Z-scan", **Proc. SPIE**, 3572 (1999)
2. Eric W. Van Stryland; Sidney Yang; Florencio E. Hernandez; Vladislav Dubikovskiy; W. Shensky III and David J. Hagan, "Cascaded optical limiters and modeling," Proc. of the **2nd International Symposium on Optical Power Limiting**, Venice, Italy (2000).
3. F.E. Hernandez; S. Yang; V. Dubikovskiy; W. Shensky III; E. Van Stryland and D. Hagan "High Performance Optical Limiter", **LEOS Newsletter**, 5-7, December (2000).
4. Kevin D. Belfield, David J. Hagan, Yong Liu, Raluca A. Negres, and Meigong Fan, F. E. Hernandez, "Two-Photon photochromism of a photorefractive organic material for holographic recording", **Proc. SPIE - Int. Soc. Opt. Eng.**, 4104 (2000)

Highlights:

1. F. E. Hernández, S. Yang, E. W. Van Stryland, and D. J. Hagan, "High dynamic range cascaded-focus optical limiter", Highlights, **Laser Focus World** 36, 11 (2000)
2. Francois Bresson, Florencio. E. Hernandez, J. W. Shi, and C.-K. Sun. "Electric Field Induced Second Harmonic Generation in nematic liquid crystals as a probe for electric field" Proceedings of **Optics and Photonics Taiwan '01**, Kaoshiung, Taiwan, Vol. 2, pp. 713-715, 2001.
3. Marisol Garcia, Celine Perego, Florencio E. Hernandez, "Truly Non Invasive Glucose Optical Sensor Using Gold Nanoparticles", **Chemical & Engineering News**, (Web Site March 28, 2006) News of the Week April 03, 15 (2006)
4. F. E. Hernandez, "Physical Chemists Devise Quick Spectrometry-Based Mercury Test", **Video-Internet Interview and domestic TV-interview** sponsored by the American Institute of Physics, USA, August 2006
5. F. E. Hernandez, "New glucose sensor using nanotechnology", **TV Interview for Central Florida News, Fox News-Channel 13**, Orlando, Florida, August 2006
6. F. E. Hernandez, "New glucose sensor using nanotechnology", **TV Interview for Bay 9 News, Tampa, Florida**, August 2006
7. F. E. Hernandez, "Teardrop Test for Diabetes", **www.FBworld.com**, August 2006
8. F. E. Hernandez, "Testers in Tears", **www.timesonline.co.uk**, August 2006
9. F. E. Hernandez, "Nanorods", **www.biotechterms.com**, August 2006
10. F. E. Hernandez, "Shed a tear to detect diabetes", **www.paete.org**, August 2006
11. F. E. Hernandez, "Shed a tear to detect diabetes", **Seminole Chronicles Newspaper**, Orlando, Florida, August 2006
12. F. E. Hernandez, "Teardrops could be used to test blood sugar, says professor", **www.health.blogdig.net**, August 2006
13. F. E. Hernandez, "Shed a tear to detect diabetes", **www.iran-daily.com**, August 2006
14. F. E. Hernandez, "Using teardrops to Test Diabetes", **www.gtp.org.kr.com**, August 2006
15. F. E. Hernandez, "Researchers developing teardrop test for diabetes", **www.curevents.com**, August 2006
16. F. E. Hernandez, "Researchers developing teardrop test for diabetes", **www.yahoo.com**, August 2006
17. F. E. Hernandez, "Teardrop test for diabetes developed by researchers", **www.healthjockey.com**, August 2006
18. F. E. Hernandez, "Shed a tear to detect diabetes", **www.nanokorea.net**, August 2006
19. F. E. Hernandez, "Shed a tear to detect diabetes", **www.livescience.com**, August 2006

20. F. E. Hernandez, “Potential diabetics will shed a tear”, www.utilisegold.com, August 2006
21. F. E. Hernandez, “Shed a tear to detect diabetes”, www.livescience.com, August 2006
22. F. E. Hernandez, “Is Your Water Safe?”, www.ivanhoe.com, August 2006
23. F. E. Hernandez, “Two-photon circular dichroism: A New Twist of Nonlinear Spectroscopy”, KTH:s Publikationsdatabas DiVA, 2010
24. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **CEON Biblioteka Nauki**, 2014
25. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **Smithsonian/NASA Astrophysics Data System**, 2014
26. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **CHEMIE.DE**, 2014
27. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **CHEMEUROPE.COM**, 2014
28. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **Sciences Indexed Since 1998**, 2014
29. F. E. Hernandez, “Two-photon circular dichroism structures simulating l-tryptophan residues in proteins with secondary structures”, **J-GLOBAL**, 2014

Patents:

- F. E. Hernández, and D. Hagan, “Continuously-variable wavelength-independent polarization rotator (CVWI-PR)”, Patented (US-6,476,966 B1) (2002)
- F. E. Hernández, Andres Campiglia, “Mercury sensor and water remediation using anisotropic gold nanoparticles” Pending (US-2008,0081376 A1) (2008)
- F. E. Hernández, “Truly Noninvasive Glucose Sensor” Pending (US-7,972,862 B2) (2011)

Contributed Conferences Presentations:

1. D. Iacocca, P. Patiño, M. Roperio and F. E. Hernández, “Interactions of oxygen cold plasmas with some aliphatic hydrocarbons”. XIII Congresso Brasileiro de Aplicacoes de Vacuo na Industria e na Ciencia-XIII CBRAVIC a I Encontro Latino Americano sobre Plasmas Frios- I ELAPF na Universidade Estadual de Campinas-Unicamp Campinas-INAS-SP. 24/07/92, Sao Pablo, Brazil.
2. V. P. Kozich, J. Castillo, F. E. Hernández, A. Marcano O., “Differential thermal lensing to study two-photon absorption spectra in solutions”, Conference on Laser and Electro-Optics 1994 (CLEO’94), 08/05/94, Anaheim, California, EUA
3. V. P. Kozich, J. Castillo, F. E. Hernández, A. Marcano O., “Two-color time-resolved Z-scan to study the thermal changes of the refraction index in liquids”, International Conference Refractometry 1994, 16/05/94, Warsaw, Poland.
4. V. P. Kozich, A. Marcano, J. Castillo, F. E. Hernández, “Chlorophyll nonlinearities studies with Z-scan technique”, 5th International Conference of Lasers Applications in life Science, 28/06/94, Minks, Byelarusia.
5. A. Marcano O., F. E. Hernández, H. Maillotte, “Sensitivity enhancement of nonlinear refraction measurements with the open Z-scan by digital image processing”, Conference on Laser and Electro-Optics 1996 (CLEO/EUROPE-EQEC’96), 08/09/96, Hamburg, Germany.
6. F. E. Hernández, A. Marcano O, Ysayas Alvarado, A. Biondi, “Measurements of nonlinear refraction index and two-photon absorption in a novel organometallic compound”, 1997 OSA Annual Meeting, 12/10/97, Long Beach, California, EUA

7. H. Maillotte, A. Marcano O., F.E. Hernández, F. Cherioux, P. Audebert, L. Grossard, “Multichannel TPD Z-scan method for n_2 measurements of new polymers”, Summer School NATO-ASI “Beam shaping and control with nonlinear optics”, 08/97, Cargese, France.
8. Escobar AL., Zoghbi ME, Villalba-Galea C., Fill M., Hernandez E., Marcano A y Bolanos P., “ Sub-cellular calcium dynamics in striated muscle cells”, Biophysical Society, 02/1998, Kansas City, EUA.
9. A. Marcano O., A. Solis, F. E. Hernandez and H. Maillotte, “Total profile distortion Z-scan”, 3 Ibero-American Optics Meeting and 6th Latin American meeting on optics, lasers, and their applications, 09/1998, Cartagena, Colombia.
10. F. E. Hernández, S. Yang, D. Hagan, and E. W. Van Stryland, “Wavelength independent “Babinet Compensator Optical Limiter” (BCOL)”, OLC’99, 09/99, Puerto Rico, USA.
11. F. E. Hernández, S. Yang, E. W. Van Stryland and D. J. Hagan, “High dynamic range, cascaded-focus nanosecond optical limiter”, CLEO’00 (Post deadline paper), Saint Francisco, CA, USA.
12. F. E. Hernández and D. J. Hagan, “Continuously Variable, “Wavelength-Independent Polarization Rotator”, CLEO’00, St. Francisco, CA, USA.
13. E. W. Van Stryland, S. S. Yang, F. E. Hernández, V. Dubikovskiy, and D. J. Hagan, “Cascaded Optical Limiters and Modeling”, ISOPL 2000, Venice, Italy.
14. F. E. Hernández, S. Yang, W. Shensky III, D. J. Hagan, and E. W. Van Stryland, “High dynamic range cascaded optical limiters”, SPIE’00, St. Diego, CA, USA.
15. Kevin D. Belfield, David J. Hagan, Yong Liu, Raluca A. Negres, and Meigong Fan[§], F. E. Hernandez, “Two-Photon photochromism of a photorefractive organic material for holographic recording”, SPIE’00, St. Diego, CA, USA.
16. F. E. Hernández, S. Yang, E. W. Van Stryland and D. J. Hagan, “Electrostriction effect contribution for high dynamic range optical limiters”, NLO’00, Hawaii, USA.
17. F. E. Hernández, S. Yang, W. Shensky III, E. W. Van Stryland and D. J. Hagan, “Hybrid optical limiter based on Pb-Phthalocyanine and CS₂’ OSA’00, Providence, USA.
18. W. Shensky III, F. E. Hernández, V. Dubikovskiy, E. W. Van Stryland, D. J. Hagan, “Enhancement of nonlinear self-action in CS₂ for nanosecond optical limiting”, CLEO’01, Baltimore, USA.
19. F. E. Hernández, W. Shensky III, E. W. Van Stryland, D. J. Hagan, “Wavelength independent, high dynamic range optical limiter”, SPIE’01 (Invited talk), San Diego, California, USA.
20. C. R. Mendonça, F. E. Hernández, D. J. Hagan, and E. W. Van Stryland, “Two-photon induced birefringence in azobenzene dye films”, OSA’01, Long Beach, California, USA.
21. F. E. Hernández, C. R. Mendonça, Ion Cohanoschi, W. Shensky III, D. J. Hagan and E. W. Van Stryland, “Viscosity Dependence of Optical Limiting in Carbon Black Suspensions”, CLEO’02, Long Beach, California, USA.
22. W. Shensky III, Ion Cohanoschi, F. E. Hernández, D. J. Hagan and E. W. Van Stryland, “Broadband optical limiter using carbon-black suspensions in CS₂”, CLEO’02, Long Beach, California, USA.
23. Shi-Wei Chu, Francois Bresson, I-Hsiu Chen, Jin-Wei, Ming-Chun Tien, Chi-Kuang Sun, and F. E. Hernandez, “3-dimensional electric field visualization utilizing electric-field-induced second harmonic generation in liquid crystals”, CLEO’02, Long Beach, California, USA.
24. E. W. Van Stryland, J. M. Hales, R. A. Negres, W. Shensky III, F. E. Hernández, V. A. Dubikovskiy, and D. J. Hagan. “Broadband nonlinear absorption spectroscopy for optical limiter”, SPIE’02, Seattle, Washington, USA.
25. F. E. Hernández, C. R. Mendonça, Ion Cohanoschi, D. J. Hagan, and E. W. Van Stryland. “Carbon particle recovery model in CBS nonlinear transmittance”, SPIE’02, Seattle, Washington, USA.
26. Belfield K. D., Liu Y., Hernandez F. E., “Two-photon photochromism of a fulgide-containing polymer for holographic recording”, ACS Spring National Meeting’02, Orlando Florida, USA

27. Belfield K. D., Liu Y., Schafer K. J., Hernandez F. E., “Two-photon induced modulation of optical properties in polymers for photonic applications”, ACS Spring National Meeting’02, Orlando Florida, USA
28. Florencio E. Hernández, Kevin D. Belfield, Ion Cohanoschi, Mihaela Balu and Katherine. J. Schafer, “Three and Four-Photon Absorption of a Multiphoton Absorbing Fluorescent Probe”, CLEO’04, San Francisco, California, USA.
29. Florencio E. Hernández, Kevin D. Belfield, Ion Cohanoschi, Mihaela Balu and Katherine. J. Schafer, “Three and Four-Photon Absorption in NPH2Bz/Hexane”, SPIE’04, San Francisco, Colorado, USA.
30. Belfield K.D., Hernandez F. E., Cohanoschi I., Bondar M. V., Van Stryland E. W., “Two-photons and beyond: 2, 3 and 4 photon absorption in conjugated fluorenes”, ACS National Meeting Fall’04, Philadelphia, PA, USA
31. Florencio E. Hernandez, Kevin D. Belfield, Ion Cohanoschi, “Three is Better than Two”, Summer School in Nanophotonics’04, Cargese, Corsica, France.
32. Florencio E. Hernández, Kevin D. Belfield, Ion Cohanoschi, Mihaela Balu and Katherine. J. Schafer, “Three and four-photon absorption of a multiphoton absorbing fluorescent probe”, CLEO’04, San Francisco, California, USA.
33. L. Petit, N. Carlie, M. Blangero, K. Richardson, T. Cardinal, F. E. Hernandez, Y. Go, A. Schulte, “Effect of the introduction of silver in germanium – based sulfide glasses”, Glass & Optical Materials Division Fall 2004 Meeting, Incorporating the XIVth International Symposium on Non-Oxide Glasses (ISNOG)’2004, Cocoa Beach, Florida, USA.
34. Ion Cohanoschi, Kevin D. Belfield, Florencio E. Hernandez, “Three-photon absorption induced fluorescence in π -conjugated fluorene derivatives”, CLEO’05, Baltimore, Maryland, USA.
35. Florencio E. Hernández, Shenjiang Yu, Marisol García, Andrés D. Campiglia “Fluorescence lifetime Enhancement of Organic Chromophores” FACSS’05, Quebec City, Quebec, Canada
36. Florencio E. Hernandez, Matthew Rex, Jessica Griffin, and Andres D. Campiglia “Gold nanorods: a novel approach to improving limits of detection for Mercury determination in aqueous samples” FACSS’05, Quebec City, Quebec, Canada.
37. Marisol Garcia, Celine Perego, Florencio E. Hernandez, “Truly Non Invasive Glucose Optical Sensor Using Gold Nanoparticles”, ACS Annual Meeting Spring’06, Atlanta, USA
38. Corredor C. C., Belfield K. D., Bondar M. V., Cohanoschi I., Hernandez F. E., Przhonska O. V., “Two-photon 3-D data storage: Photochromic reactions of two diarylethene derivatives under one- and two-photon excitation”, ACS Spring’06 National Meeting, Atlanta, Georgia, USA.
39. Belfield K. D., Bondar M. V., Cohanoschi I., Hernandez F. E., Kachkovsky O. D., Przhonska O. V., Yao S., “Excited-state absorption and anisotropy properties of multiphoton absorbing fluorene derivatives”, ACS Spring’06 National Meeting, Atlanta, Georgia, USA
40. Yao S., Belfield K. D., Hernandez F. E., Cohanoschi I., Hales J. M., “Synthesis of novel highly efficient two-photon chromophores using fluorenyl bridge bearing electron donor or acceptor groups”, ACS Spring’06 National Meeting, Atlanta, Georgia, USA
41. Corredor C. C., Belfield K. D., Cohanoschi I., Hernandez F. E., “3-D optical data storage based on reversible fluorescence control from a fluorescent dye to a photochromic diarylethene by two-photon excitation”, ACS Spring’06 National Meeting, Atlanta, Georgia, USA
42. Florencio E. Hernandez, Matthew Rex, and Andres D. Campiglia “Pushing the limits of mercury sensor with gold nanorods” NANOTECH’06, Boston, USA
43. Ion Cohanoschi, Kevin D. Belfield, Carlos Toro, Florencio E. Hernandez, “The Impact of the Conjugation Length on the Three-Photon Absorption Cross-Section of Fluorene Derivatives”, CLEO’06, Long Beach, CA, USA

44. Matthew Rex, Florencio Hernandez, Andres Campiglia, “Separation of Gold Nanorods with Capillary Electrophoresis to Achieve Better Limits of Detection for Mercury in Water”, FACSS’06, Orlando, USA
45. Florencio E. Hernandez, Ion Cohanoschi, Carlos Toro, “Surface Plasmon Enhancement of Two- and Three-Photon Absorption of Hoechst 33258 dye in Activated Gold Colloid Solution”, EOS’06, Paris, France
46. Carlos Toro, Leonardo De Boni, Artëm E. Masunov, and Florencio E. Hernández, “Untangling the Excited States of DR1 in Solution: An Experimental and Theoretical Study”, ACS Annual Meeting’08, New Orleans, USA
47. Leonardo De Boni, Carlos Toro, Florencio E. Hernandez, “Pump polarization-state preservation of white-light supercontinuum generation”, CLEO’08, San José, CA, USA
48. Carlos Toro, Leonardo de Boni, Na Lin, Fabrizio Santoro, Antonio Rizzo, Florencio E. Hernandez, “Rotatory Optical Two-photon Absorption Recognition (ROTAR)”, Chirality’09, Breckenridge, Colorado, USA
49. Carlos Toro, Leonardo De Boni, Erin L. Wood, Florencio E. Hernandez, “Optical Saturable Absorption in Gold Nanoparticles”, FAME’10, Tampa, Florida, USA
50. Remy Passier, Carlos Toro, Carlos Diaz, James P. Ritchie, Artem Masunov, Kevin D. Belfield, Florencio E. Hernandez, “Temperature Effect on Switching Thiocarbocyanine Dye Molecular Aggregates”, FAME’10, Tampa, Florida, USA
51. Florencio E. Hernandez, Leonardo de Boni, Carlos Toro, Na Lin, Fabrizio Santoro, Antonio Rizzo, “Nonlinear Optical Chiral Absorption (NOCA)”, 19th International Laser Physics Workshop 2010, Foz do Iguacu, Brazil
52. Carlos Diaz, Andrew Frazer, Alma Morales, Supriyo Ray, Suren Tatulian, Kevin D. Belfield, and Florencio E. Hernández, “Experimental-theoretical characterization of a new optically active binaphthyl fluorene based Salen ligand”, 241st ACS Annual Meeting 2011, Anaheim, California, USA
53. Florencio Eloy Hernández, Carlos Diaz and Antonio Rizzo, “Two-Photon Absorption Circular Dichroism in a Series of binaphthyl Derivatives”, Chirality 2011, Liverpool, UK
54. Florencio E. Hernández, Carlos Diaz, Andrew Frazer, Alma Morales, Kevin D. Belfield, Supriyo Ray, “Determination of the 3D structure of a novel axially-chiral binaphthyl fluorene based Salen ligand in solution using ECD and, comparison of the experimental ECD and TPCD spectra, Chirality 2012, Fort Worth, TX, USA
55. Florencio E. Hernández, Carlos Diaz, Andrew Frazer, Lorenzo Echevarria, “Application of two-photon circular dichroism and a fragment-recombination approach for the structural analysis of large molecules with multiple chirality, 14th International Conference on Chiroptical Spectroscopy 2013, Nashville, TN, USA
56. Carlos Diaz, Lorenzo Echevarria, Florencio E. Hernández, “Conformational study of an axially-chiral ligand in solution using two-photon circular dichroism and the fragment-recombination approach”, 247th ACS Annual Meeting 2014, Dallas, Texas, USA
57. Stephen Kuebler, Henry Williams, Carlos Diaz, Gabriel Padilla, Florencio Hernandez, “Nonlinear Excitation Associated with Direct Laser Writing in SU-8”, 2014 Frontiers in Optics/Laser Science Conference, Tucson, Arizona, USA
58. Julie Donnelly, Florencio E. Hernández, “Conformational Study of Δ^9 -tetrahydrocannabinol (Δ^9 -THC) via Linear and Nonlinear Circular Dichroism”, 249th ACS Annual Meeting 2015, Denver, Colorado, USA
59. Yuly Vesga, Mary Higgs, Carlos Diaz, Florencio E. Hernández, “Theoretical Study of the Two-Photon Circular Dichroism of Molecular Structures Simulating Aromatic Amino Acids Residues in Proteins with Secondary Structures”, 249th ACS Annual Meeting 2015, Denver, Colorado, USA - (Poster)

Invited Talks:

1. F. E. Hernández, S. Yang, W. Shensky III, V. Dubikovskiy, E. W. Van Stryland and D. J. Hagan, “High dynamic range cascaded-focus optical limiter”, Kent State University, Ohio, 10/2000
2. F. E. Hernandez, “Recent Advances in Optical Limiting”, Instituto Venezolano de Investigaciones Científicas (IVIC), Caracas, Venezuela, 06/2002
3. F. E. Hernandez, “Enhancement of Nonlinear Absorption Processes by Surface Plasmon in Nano- and Biophotonics”, Universidad de Santiago de Compostela, Santiago de Compostela, Spain, 07/2004.
4. F. E. Hernandez, “Three is better than two!”, University of Alabama at Hustville, Alabama, USA, 11/2004
5. F. E. Hernandez, “New Advances in Nonlinear Optical Phenomena Assisted By Surface Plasmon (NANOPAS)”, 1st INEST Meeting, Williamsburg, VA, USA, 05/2005
6. F. E. Hernandez, “Nuevos Avances en Optical No Lineal Asistida por Plasmon de Superficie”, 1st Photochemistry and Biophotonic Summer School and Conference, Universidad Simón Bolívar, Caracas, Venezuela, 09/2005
7. F. E. Hernandez, “Three-Photon Absorption in Organic Molecules & Metal Nanoparticles Assisting Nonlinear Absorption”, Université de Bordeaux, Bordeaux, France, 11/2005
8. F. E. Hernandez, “High Order Nonlinear Optics and Plasmonics for Bioimaging, Photodynamic Therapy & Sensing”, Universidade de Vigo, Vigo, Spain, 06/2006
9. F. E. Hernandez, “High Order Nonlinear Optics and Plasmonics for Biomedical Applications & Sensing”, Institut de Ciències Fotoniques, Barcelona, Spain, 06/2006
10. F. E. Hernandez, “Fluorescence lifetime enhancement of organic chromophores attached to gold nanoparticles”, FACSS’06, Orlando, USA, 09/2006
11. F. E. Hernandez, “Surface Plasmon Resonance in Linear and Nonlinear Optics: Paving a New Road for Biomedical Applications and Sensing”, Institut de Ciències Fotoniques, Barcelona, Spain, 03/2007
12. F. E. Hernandez, “A golden opportunity to detect ultra-low levels of mercury and clean up mercury-contaminated waters”, FAME-ACS 2007, Orlando, Florida, USA, 05/10/2007
13. F. E. Hernandez, “Nanotecnología y Óptica: Absorción Multifotónica de Alto Orden y Plasmón de Superficie”, VIII Congreso Venezolano De Química & III Escuela de Espectroscopia y Óptica, Caracas, Venezuela, 06/2007 (Two Lectures)
14. Florencio E. Hernández, Ion Cohanoschi, Arthur Thibert, Carlos Toro, Shengli Zou, “Surface Plasmon Enhancement at a Liquid-Metal-Liquid Interface”, FACSS’07, Memphis, USA, 09/2007
15. Florencio E. Hernández, Matt Rex, Arthur Thibert, Andres Campiglia “Au-Nanorods Cleaning the Environment - “A new opportunity for mercury sensing and remediation in aqueous and vapor samples”, ISNEPP’07, Fort Lauderdale, USA, 12/2007
16. Florencio E. Hernández, “Au-Nanorods Cleaning the Environment - “Plasmonics in linear and nonlinear optics: new advances”, Florida Atlantic University, Boca Raton, USA, 04/2008
17. Carlos Toro, Arthur Thibert, Leonardo De Boni, Artem Masunov, and Florencio E. Hernández, “Unexpected Fluorescence Emission of Disperse Red 1 in Solution at Room Temperature”, FAME-ACS 2008, Orlando, USA, 05/2008
18. Florencio E. Hernández, “Nonlinear Optics in Chiral Systems: New Advances and Applications”, XI Encuentro Nacional de Óptica & II Conferencia Andina y del Caribe en Óptica y sus Aplicaciones, Pamplona, Colombia, 11/2008
19. Florencio E. Hernández, “Nonlinear chiro-optical properties of organic axial optically active molecules”, Academia Nacional de Ciencias, Caracas, Venezuela, 11/2009

20. Florencio E. Hernández, “Nonlinear Optics in Chiral Systems: New Advances and Applications”, National Central University of Taiwan, Taipei, Taiwan, 12/2009
21. Florencio E. Hernández, “Optical Nonlinear Properties in Chiral Systems”, University of Florida, Gainesville, Florida, 02/2010
22. F. E. Hernandez, “Surface Plasmon Resonance in Linear and Nonlinear Optics: Biomedical Applications and Sensing”, University of Sao Paulo, Sao Paulo, Brazil, 07/2010
23. F. E. Hernandez, “Three steps toward two-photon absorption circular dichroism”, Clemson University, South Carolina, 10/2011
24. Florencio E. Hernández, “The effect of the π -electron delocalization curvature on the two-photon circular dichroism of molecules with axial chirality”, J. Phys. Chem. Lett. online presentation 2012: <http://www.slideshare.net/jpcoffice/jpcl-101021-jz300577-herndez-presentation>
25. Lorenzo Echevarria, Carlos Diaz, Florencio Eloy Hernandez, “Absorción de dos Fotones y Sistemas Quirales: Perspectivas Teóricas y Experimentales”, ENO – CANCOA 2013 – XIII Encuentro Nacional de Optica – IV Conferencia Andina y del Caribe en Optica y sus Aplicaciones, Medellin, Colombia, 11/2013
26. Florencio Eloy Hernandez, “Two-Photon Circular Dichroism: Expanding the Frontiers of Chiral Spectroscopy”, Arizona State University, Arizona, 03/2014
27. Florencio Eloy Hernandez, “New Advances and Applications in Nonlinear Chiral Spectroscopy”, University of Vigo, Vigo, Spain, 06/2014
28. F. E. Hernandez, “Two-Photon Circular Dichroism: Pushing the Limits of Chiral Spectroscopy”, 91st FAME-ACS, Innisbrook, Florida, USA, 05/07/2007
29. Julie Donnelly, Florencio E. Hernández, “Conformational Study of Δ^9 -tetrahydrocannabinol (Δ^9 -THC) via Linear and Nonlinear Circular Dichroism”, 249th ACS Annual Meeting 2015, <http://presentations.acs.org/common/presentation-detail.aspx/Spring2015/BIOT/PODBIOT/PODBIOT3>
30. Florencio Eloy Hernandez, “Two-Photon Circular Dichroism: A novel Approach for Nonlinear Chiral Spectroscopy”, University of Alabama, Tuscaloosa, USA 07/2015

TEACHING ACTIVITIES

As a professor in the physical sciences, my main objective is to help students develop critical thinking skills and internalize the significance of high ethical and moral values. Knowing by my own experience that the impact of my teaching philosophy goes beyond the space and time boundaries of the classroom and the lecture, I try to inspire my students by leading through example. My incessant success in teaching at UCF is certified by my two consecutive **UCF Teaching Incentive Program Awards (2005-2006 & 2010-2011)**. During the last seven years I have served almost 4,000 students at UCF. Through this journey I have developed a special interest for education, primarily for the design of new strategies to teach a totally new technologically advanced generation, the Millennial. For this purpose I have participated in many professional development workshops to grow as an instructor and mentor. At present I am working in the development of a unique multiuser technological platform that simultaneously brings tutoring and promote STEM careers among college freshmen students where, when and how they want it.

Teaching Activities at UCF since Fall'01: (*Graduate level course)

<u>Semester</u>	<u>Course</u>	<u>Contact Hours</u>	<u>Course Name</u>
Fall'01	CHM3410	4	PChem-I (Thermodynamics)
*Fall'01	CHS6410	2	Chemical Thermodynamics
Spring'02	CHM3411	3	PChem-II (Kinetics, Quantum, Stat. Thermo.)
Spring'02	CHM3411L	6	PChem. Lab.
Fall'02	CHM3410	4	PChem-I (Thermodynamics)
*Fall'02	CHS6410	2	Chemical Thermodynamics
Spring'03	CHM3411	3	PChem-II (Kinetics, Quantum, Stat. Thermo.)
Spring'03	CHM3411L	6	PChem. Lab.
Fall'03	CHM3410	4	PChem-I (Thermodynamics)
*Fall'03	CHS6410	2	Chemical Thermodynamics
Spring'04	CHM3411	3	PChem-II (Kinetics, Quantum, Stat. Thermo.)
Spring'04	CHM3411L	6	PChem. Lab.
Fall'04	CHM3410	4	PChem-I (Thermodynamics)
*Fall'04	CHS6938	3	Chemical Thermodynamics
Spring'05	CHM3411	3	PChem-II (Kinetics, Quantum, Stat. Thermo.)
Spring'05	CHM3411L	6	PChem. Lab.
*Fall'05	CHS6938	3	Chemical Thermodynamics
Spring'06	CHM3411L	6	PChem. Lab.
*Spring'06	CHM6971	3	Optical Materials and Polymers
*Fall'06	CHS6938	3	Chemical Thermodynamics
Spring'07	CHM3411L	6	PChem. Lab.
*Summer_C'07	CHM6908	1	Nonlinear Optics and Spectroscopy
Fall'07	CHM3410	4	PChem-I (Thermodynamics)
Spring'08	CHM3411L	6	PChem. Lab.
*Spring'08	CHM6971	3	Optical Materials
Fall'08	CHM2045H	3	Honors Chemistry Fundamentals I
Spring'09	CHM3411L	6	PChem. Lab.
Summer_C'09	CHM1020	4	Concepts of Chemistry
*Fall'09	CHS6938	3	Chemical Thermodynamics
Spring'10	CHM3411L	6	PChem. Lab.
Summer_A'10	CHM2041	8	Fundamental of Chemistry IB
*Fall'10	CHS6938	3	Chemical Thermodynamics

Spring'11	CHM3411L	6	PChem. Lab.
Summer_A'11	CHM3411L	8	PChem. Lab.
Fall'11	CHM-2040	3	Fundamental of Chemistry IA
Spring'12	CHM-2040	3	Fundamental of Chemistry IA
Summer_B'12	CHM2041	8	Fundamental of Chemistry IB
Fall'12	CHM-2040	3	Fundamental of Chemistry IA
Spring'13	CHM-2041	3	Fundamental of Chemistry IB
Summer_B'13	CHM-2041	8	Fundamental of Chemistry IB
Fall'13	CHM-2040	3	Fundamental of Chemistry IA
Spring'14	CHM-2041	3	Fundamental of Chemistry IB
Summer_B'14	CHM-2041	8	Fundamental of Chemistry IB
Fall'14	CHM-2040	3	Fundamental of Chemistry IA
Spring'15	CHM-2041	3	Fundamental of Chemistry IB
Summer_B'15	CHM-2041	8	Fundamental of Chemistry IB

Mentoring:

▪ Visiting Professor:

- Dr. Lorenzo Echevarria, Universidad Simón Bolívar, Caracas, Venezuela (04/2012 to 04/2013)
- Dr. Carlos Borrás, Universidad Simón Bolívar, Caracas, Venezuela (04/2014 to 09/2014)

▪ Postdoctoral Fellows:

- Dr. Leonardo DeBoni, University of Sao Paulo, Brazil (04/2007 to 06/2009)
- Dr. Rémy Passier, L'Université Franche-Comté, France (08/2009 to 07/2010)

▪ High School Teacher:

- Mr. Sean Campbell, Lyman High School, Orlando, Florida (06/2010 to 09/2010)

▪ High School Student:

- Miss Sarah Baker, Lake Highland School, Orlando, Florida (Fall 2010)

▪ Graduate Students:

1. Ion Cohanoschi (MS), Ph.D. Student, College of Optics and Photonics: CREOL & FPCE, UCF (07/2003 to 12/2006), **Graduated** → OptiGrate - Senior production engineer.
2. Marisol Garcia (BS), M.S. Student, Department of Chemistry, UCF (08/2004 to 04/2006), **Graduated** → PMex - Perforation Engineer.
3. Erin Wood (BS), M.S. Student, Department of Chemistry, UCF (08/2007 to 07/2009), **Graduated** → Ph.D. Student at University of Vermont.
4. Carlos Toro (BS), Ph.D. Student, Department of Chemistry, UCF (08/2005 to 07/2010), **Graduated** COS & UCF - Outstanding Dissertation Award 2011. → Managing Editor -Journals at ACS.
5. Herminso Villarraga, MS. Student, CREOL/The College of Optics and Photonics, UCF (10/2010 to 12/2011) **Graduated** → CT Metrology Specialist, Nikon Metrology Inc.
6. Carlos Diaz (BS), Ph.D. Student, Department of Chemistry, UCF (01/2009 to 05/2015), **Graduated** → Instructor, University of Colorado - Colorado Spring.
7. Warinya Chemnasiri, Ph.D. Student, Department of Chemistry, UCF (Since 08/2010)
8. Yuly Vesga, Ph.D. Student, Department of Chemistry, UCF (Since 01/2012)
9. Julie Donnelly, Ph.D. Student, Department of Chemistry, UCF (Since 08/2013)

▪ *Visiting Graduate Students:*

10. Jacob Powel, Ph.D. Student, Department of Chemistry, UCF (Spring & Summer 2011) → Ph.D. Student at University of Central Florida
11. Felipe Garcia, Visiting Ph.D. Student, Universidad de Valle, Caliz, Colombia (Spring & Summer 2011) → Ph.D. Student at University of Dayton
12. José Antonio Tiburcio, Visiting Ph.D. Student, Cinvestat-Campus Merida, Mexico (05/2012 to 05/2013), ***Graduated*** → Professor of Physics, Universidad Nacional Jorge Basadre Grohmann, Tacna, Peru

▪ *Undergraduate Students [USA (*) and Europe (#)]:*

1. Ascanio Biondi, “Measurement of nonlinear refraction index and two-photon absorption in a new organometallic compound”, Department of Chemistry, Universidad Central de Venezuela, from Spring 1997 to Spring 1998
2. * Sean Burrows, “Fabrication of carbon nanoparticles in Kerr solvents, characterization of the process”, Department of Chemistry, UCF, from Fall 2002 to Spring 2003
3. * Anne Ryan, “Synthesis of Gold Nanophotonic Material for use in Intersystem Crossing Studies”, Department of Chemistry, UCF, from Summer 2003 to Summer 2004, also Summer 2003 (REU-College of Optics and Photonics CREOL & FPCE)
4. # Maxime Blangero, “Development and characterization of new Silver-Europium doped GeS₂ and GeS₂-Sb₂/Ga₂S₃ glasses with enhanced luminescence properties using SPR”, Summer 2004 (REU-College of Optics and Photonics CREOL & FPCE)
5. * Horacio Carias, “Synthesis and optical characterization of noble metal nanostructures”, Department of Chemistry, UCF, from Summer 2004 to Summer 2005 (Chemistry), also Summer 2005 (REU-College of Optics and Photonics CREOL & FPCE)
6. # Celine Perego, “Development and characterization of new silver and gold nanoparticles based glucose sensor”, Summer 2005 (REU-College of Optics and Photonics CREOL & FPCE)
7. # Amel Barbot, “Three-photon optical characterization of J-aggregates and photoinitiators”, Summer 2005 (REU-College of Optics and Photonics CREOL & FPCE)
8. Tanveer, “Functionalization of glass substrate with metal to enhance the radiative decay rate”, Department of Chemistry, UCF, From 08/2005 to 05/2006
9. # Axel Quinzac, “New ways to functionalize glass slides with gold nanorods”, Summer 2006 (REU-College of Optics and Photonics CREOL & FPCE)
10. * Arthur Thibert, “Exploiting the Properties of Gold Nanorods to Develop Mercury Filters”, Department of Chemistry, UCF, from 05/2006 to 05/2007, also Summer 2006 (REU-College of Optics and Photonics CREOL & FPCE)
11. * Ashley Roberts, “Radiative Decay Engineering on Dye-Liquid Crystals Cells coated with Gold Nanoparticles”, Summer 2007 (REU-College of Optics and Photonics CREOL & FPCE)
12. * Jessica King, “Fundamental study of decay rates of organic molecules near conductive metal surfaces: “A novel approach for solar energy storage”, Summer 2008 (REU-CREOL/the College of Optics and Photonics).
13. Maria Alejandra Ortega, “Study of nonradiative mechanisms of organic molecules near metal surfaces at the nanoscale”, Department of Chemistry, Universidad Simón Bolívar, Caracas, Venezuela, Summer 2008.
14. * Maha Mourad, “Development of a Glucose sensor based on the Au nanorods-Hg amalgamation process”, Duke University, Summer 2009 Internship.
15. * Lobaba Habach, “Enhancing the sensitivity of a metal nanoparticle noninvasive-glucose sensor using core-shell nanostructures”, Department of Chemistry, UCF, Since 05/2010

16. Julian Leland, Demonstrating the Phosphorescence Lifetime Enhancement Due to Metal Nanoparticles, Department of Chemistry, UCF, Spring 2010, also Summer 2010 (REU-CREOL/the College of Optics and Photonics)
17. Jacob Reimers, “Radiative Decay Engineering on Azulene-Au nanoparticles Hybrid Organic-Plasmonic Systems”, Summer 2011 (REU-CREOL/ The College of Optics and Photonics).
18. Shannon Sullivan, “Development of a novel fluorescence-based hydrogen sensor”, Department of Chemistry, UCF, Spring 2012.
19. Nathalie Meeks, “Development and characterization of a multiphoton ionization spectrometer for the study of ultra-traces of contaminants in aqueous solutions and analysis of optically active systems”, Summer 2012 (REU-CREOL/ The College of Optics and Photonics).
20. Mary Higgs, “Structural analysis of chiral molecules using TPCD: A computational study”, Department of Chemistry, UCF, from Fall 2012 to Spring 2014.
21. Stephanie Castillo, “Chiral distillation using photon-momentum of circularly polarized light”, Department of Chemistry, UCF, since Spring 2013. RAMP!/Mc.Nair/ICubed, from Fall 2013 to Fall 2014.
22. Solange Hernandez, “Design of catchy thermal lens experiments for k-12 students”, Department of Chemistry, UCF, from Fall 2013 to Spring 2014.
23. Nicholas Orta, “Development of a hydrogen sensor based on selective reduction of double bonds in CY dyes”, Department of Chemistry, UCF, from Fall 2013 to Fall 2014.
24. Rosvelly Diaz, “The Use of Social Networking Platforms in Education”, Sophomore, Valencia Community College, from Fall 2014 to Spring 2015.
25. Victoria Canellas, “Development of a fluorescence-based Metal sensor using curcumin”, Biomedical Sciences, UCF, since Summer 2015

Professional Development in Education:

Faculty Book Club: (UCF Counseling Center & FCTL)

- Garbology (Summer 2014)
- Quiet: The Power of Introverts (Spring 2013)
- The Tyranny of Choice (Fall 2012)
- Mad at School (Spring 2012)
- The Outliers (Spring 2011)
- Mirroring People (Summer 2011)
- The Narcissism Epidemic (Fall 2011)
- College of the Overwhelmed (Spring 2010)
- The Art of Happiness (Fall 2010)

Workshops:

- UCF S.A.F.E., Student veteran Allied Faculty Education, training (04/2014)
- FCTL - Technology Camp (01/2012)
- FCTL - STEM - Developing a Vision of Effective Mentoring and a Mentoring Philosophy (10/14/10)
- FCTL - STEM - Understanding the Diverse Factors that Influences Graduate Students' Mentoring Needs (11/04/10)
- FCTL - STEM - How to Turn Good Mentoring Principles into Practice (12/02/10)
- FCTL - STEM - Mentoring Graduate Students: Summary of Best practice (12/16/10)

- FCTL - Turnitin (Spring 2010)
- ACS - Engaging and Motivating Volunteers (01/23/10)
- ACS - Engaging Colleagues in Dialogue (01/24/10)

Conferences:

- UCF Service Learning Day “Engaging STEM ” (09/30/10)
- UCF State of STEM Education Conference (08/5/2015)

Programs and projects:

- Freshmen Undertake Networking in Science, Technology, Engineering and Mathematics (FUN-STEM)

The main goal of this project is to develop a unique multiuser technological platform that simultaneously brings tutoring and promote STEM careers among college freshmen students where, when and how they want it. Our specific objectives are: i) To combine all social networking sites (SNS), email and text messages to assist students according to their individual preferences; ii) to provide a “24/7” consulting service when they need it most; iii) to motivate and engage students through online tutoring; and, iv) to leverage the reaching capability of this platform to effectively promote STEM among these students.

- Global Research Objectives & Occupations for Vibrant Y-generation “GROOVY” (Spring 2015)

GROOVY is a program designed to advance the national STEM agenda on college freshmen students via first-year seminars. This initiative consists of inviting faculty members from our university and perhaps professionals from industry to talk to the class for approximately 15 min about their experiences in STEM careers, their research projects, and job opportunities in the field. GROOVY is foreseen as a retention and recruiting vehicle for the Y-generation to pursue STEM careers.

- The Use of Social Networking Platforms in Education (Fall 2014 – Spring 2015)

The purpose of this research is to understand the use of social networking platforms in education by college students. In order to gather the necessary information for the study, the PIs will distribute a paper survey. Students are at least 18 years old. The survey, which is absolutely voluntary and anonymous, has already been approved by the IRB. Freshmen Chemistry and Sociology courses will be targeted. This study is the fruit of a strong collaboration between Dr. Fernando Rivera (Sociology) and Dr. Florencio E. Hernandez (Chemistry).

- Assessment of the Impact of Twitter in freshman chemistry CHM-2040 and CHM-2041 (Fall 2013 – Fall 2014)

The purpose of this study is to assess the impact of twitter in teaching large classes. Hypothesis: Twitter maintain students engage in the class during the semester. After evaluating the results of the survey I will pursue publishing an article in the Journal of Chemical Educaiton. Only students in my CHM-2040 and CHM-20441 section will take the survey at the end on the semester. Students are at least 18 years old. The survey is absolutely voluntary and anonymous. Subject to IRB approval.

- Spinning Orthodox Forms in Inspirational State-of-the-art Teaching Styles “SOFISTS”, (2011-2013)

This program refer to the synergistic combination of the traditional teaching style described above and the inclusion of specific technological advances for teaching such as the multiple applications available in iPads, Dropbox, Twitter and other SNS. This renovated teaching approach assists the instructor in stimulating thoughts and responses that capture the students’ attention, fuel their imagination, inspire their scientific essence and take them to a deeper level of understanding in chemistry while enjoying the development of their critical thinking skills. In fact, I started working with the Faculty Center for Teaching and Learning (FCTL) at UCF, to validate the efficacy of SOFISTS, a renovated strategy designed to create the next generation of “wise men” for our society.

Outreach Activities:

- Global Research Objectives & Occupations for a Vibrant Y-Generation “GROOVY” (Spring 2015):

GROOVY is a program designed to advance the national STEM agenda on college freshmen students via first-year seminars. This initiative consists of inviting faculty members from our university and perhaps professionals from industry to talk to the class for approximately 15 min about their experiences in STEM careers, their research projects, and job opportunities in the field. GROOVY is foreseen as a retention and recruiting vehicle for the Y-generation to pursue STEM careers.

- The Biology Integrated Orlando Training and Enrichment Camp “BIOTEC” (Summer 2015):

An intensive summer week biology camp to prepare high school students of Central Florida for the US – National Biology Olympiad, and to provide research opportunities to high school students and teachers.

- The Orlando Chemistry Tutoring, Enrichment and Training Camp “OCTET” (Since 2010):

An intensive summer week chemistry camp to prepare high school students of Central Florida for the US – National Chemistry Olympiad, and to provide research opportunities to high school students and teachers.

- Teaching Chemistry to Children - A colorful hand-print periodic table of the elements - Earth Day 2011 at Lake Eola, Orlando, Florida.

103 children of all ages participated in making a 12 ft by 5 ft periodic table with their hand while having fun learning chemistry.

SERVICE ACTIVITIES

Professional services include a range of different occupations in our career which provide direct support to the profession, institution, college, department and community. When performed correctly, these initiatives contribute with the growth, productivity, visibility and leadership of the whole institution. Since 2008 I have provided valuable service and leadership to my community, department, college, university, and profession. I have been an active member in numerous department, college, and university committees, including the Faculty Senate. **I have reviewed 50+ articles and more than 100 proposals from recognized scientific journals and federal agencies**, respectively. I became **Associate Editor of a prestigious journal of the IEEE**, and member of editorial/advisory boards of international conferences/journals. I coordinated four outreach programs and the Chemistry Olympiad for the ACS-Orlando section (2008-2010), and served as **Chair of the ACS - Orlando Section** in 2011, among others.

Reviewer Activities:

▪ *Reviewer of the following journals:* Journal of the American Chemical Society, Journal of Physical Chemistry B, Journal of Physical Chemistry A, Journal of Physical Chemistry Letters, Langmuir, Angewandte Chemie, ACS Photonics, Chemistry of Materials, Chemical Physics, Journal of Material Research, Journal of Materials Chemistry C, Chemical Physics Letters, RSC Advances, Spectroscopy Letters, Scientific Report, Journal of Fluorescence, Spectrochimica Acta A, Plasmonics, Analytical Chemistry, ACS Nano, International Journal of Molecular Sciences, Analytica Chimica Acta, Optics Letter, Optics Express, Applied Optics, Journal of Molecular Structure, IEEE-Photonics Journals, Journal of the Optical Society of America B, Optics Communications.

▪ *Reviewer of the following book:* “Engineering and Chemical Thermodynamics”, Edited by Jenny Welter, editor for chemical engineering at John Wiley & Sons. Reviewed requested by Dr. Welter at John Wiley & Sons in year 2005

▪ *Reviewer of the following Federal and International Agencies:* National Science Foundation, German Research Foundation, U.S. Civilian Research & Development Foundation, Petroleum Research Fund, Fulbright Program.

Editorial Board:

- Associate Editor, IEEE Photonics Journal (Since 02/2014)
- Dataset Papers in Physical Chemistry, Hindawi Publishing Corporation (2012)

Advisory Board:

- International Symposium on Nanotechnology in Environmental Protection and Pollution, **ISNEPP 2007**, Fortlauderdale, USA
- International Joint Conference on Knowledge Management for Composite Materials, Nano Technology and Fuel Cell, **KMCM 2007**, Düsseldorf, Germany
- BIT's 1st Annual World Congress of Nanomedicine 2010, Beijing, China

Societies Board:

- American Chemical Society-Orlando Local Section (Chair Elect 2010)
- American Chemical Society-Orlando Local Section (Chair 2011)

Panel Board:

- NSF-BIO Instrument Development for Biological Research (**IDBR**) 12/2008
- NSF-BIO Instrument Development for Biological Research (**IDBR**) 11/2009
- NSF-CHE Major Research Instrumentation (**MRI-R²**) Program 11/2009
- NSF- CHE-DMR-DMS Solar Energy Initiative (**SOLAR**) 05/2010
- NSF-BIO Instrument Development for Biological Research (**IDBR**) 11/2010
- NSF-BIO Instrument Development for Biological Research (**IDBR**) 11/2011
- NSF-BIO Instrument Development for Biological Research (**IDBR**) 11/2013
- NSF-BIO Instrument Development for Biological Research (**IDBR**) 11/2014
- Fulbright Scholar Peer Review Discipline Committee 2014-2016 (**FBSP**)

University Service at UCF since 2007:

- UCF Undergraduate Research Week Committee (2007-2008, Chair of Scientific Exhibit)
- Senior member - 2006 Optical, Photonic, and Electronic Materials ACS PRF Summer School
- Chemistry Graduate Committee (2010-2012)
- Chemistry Department Seminar Coordinator (2008-2012)
- Teaching Incentive Award Committee (2008-2009, Chair 2008)
- Judge in the Physical Sciences and Mathematics category for the 6th Annual Showcase of Undergraduate Research Excellence (04/02/09)
- Judge in the 1st NanoFlorida Conference 2008 (09/26-27/2008)
- College of Sciences Excellence in Distinguished Research Award Committee (2008)
- College of Sciences Excellence in Graduate Teaching Award Committee (2008)
- Chemistry Promotion and Tenure Committee (since 2008)
- NanoScience and Technology Center Promotion and Tenure Committee (2009-2010)
- Research Incentive Award Committee (2011)
- UCF Faculty Senate (2010-2013 and 2015-2016)
- College of Sciences Instructor/Lecturer Promotion Committee (2011-2013 & 2015-2017)
- College of Sciences SEED Grant Committee (2015)
- McNair/RAMP/Auzene Fellowship selection Committee (since 2012)
- Undergraduate Research Council (2015-2016)