

FERNANDO BELMONT BERNAL, PH. D
Arkansas State University Campus Querétaro (ASUCQ)
Chemistry Faculty
Carretera Estatal #100 km 17.5 Mpio. Colón,
C.P. 76270. Querétaro México
Phone Office: +52 419 689 0354 Ext. 2032
Email: fbelmont@astate.edu



To whom it may concern:

My name is Fernando Belmont Bernal; I accomplished my doctoral studies at the National Autonomous University of Mexico (UNAM) with the project entitled "*Synthesis of curcuminoids and study of their reactivity towards superoxide radical via cyclic voltammetry and biological evaluation*". In this project relevant and innovative results were obtained regarding the scavenging of the superoxide radical, associated with degenerative diseases such as **Diabetes** and **Alzheimer**, caused by oxidative stress. Since October 2017 I've been developing my responsibilities as **Assistant Professor** and **Lab Director** at **ASUCQ** by establishing the necessary conditions to operate Chemistry Lab as well as developing the theoretical courses of General Chemistry I, II and Organic Chemistry I.

Along with this background some of my achievements and responsibilities include:

- Chair of the selection committee for the Chemistry Faculty at ASUCQ.
- Collaboration with the Students Recruitment Office at ASUCQ.
- Member of the bridge program committee at ASUCQ.
- Publication of the manuscript "*Systematic derivatization of curcumin and its effect on antioxidant capacity and action mechanism. Cyclic voltammetry and DFT as tools of analysis mechanism*" in the journal ChemistrySelect of the Wiley Editorial House, available at <http://onlinelibrary.wiley.com/doi/10.1002/slct.201600992/pdf>
- Publication of the manuscript "*Two-step synthetic strategy to obtain a curcumin derivative with enhanced water solubility, antioxidant power and anti-tumor activity*" in the journal Materials Science and Engineering C of Elsevier Editorial House, available at <http://www.sciencedirect.com/science/article/pii/S0928493116317210>
- Publication of the manuscript "*Accelerated one-pot synthesis of coated magnetic nanoparticles from iron(II) as a single precursor*" in the Journal New Journal of Chemistry of the Royal Chemical Society Editorial House, available at <https://pubs.rsc.org/en/content/articlelanding/2018/nj/c8nj02270d#!divAbstract>

This multidisciplinary background gives me the necessary experience to offer education services for STEM Students along with academical administration and research projects with relevant research interests. As a young Professor, I have been developing my professional skills at **ARKANSAS STATE UNIVERSITY CAMPUS QUERÉTARO**, with great joy. It is here, at **ASUSQ** where I have found the place to continue exercising my **vocation: "Chemistry"**.

Allow me to present my Résumé as my profile presentation.

Sincerely,

Dr. Fernando Belmont Bernal.

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Summary

During the last 10 years I have been a scholar in different areas of chemical research, ranging from the remediation of soils contaminated with mercury, up to the synthesis of antioxidants with novel biological activity. While my area of expertise is diverse, organic synthesis has been at the center of my professional and academic development throughout this time. In this sense, I have been interested in applying my knowledge to multidisciplinary purposes which cover areas such as environmental, analytical and medicinal chemistry. These academic activities include efforts in remediation protocols for contaminated mercury soils, the structural modification to avoid undesired secondary effects with drugs such as Sibutramine and enhance the biological activity of natural molecules with pharmacological interest such as Curcumin by the application of well-defined structural polymers. During my doctoral studies, the results on the research topic related to Curcumin were broadened, involving a strong background in organic synthesis, as well as in the application of the Macromolecular Therapy models, particularly the use of those macromolecules known as dendrimers. The characterization of the synthesized products was performed by techniques such as $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, FT-IR, electronic impact, FAB+ and UV-Vis spectroscopy, among others. Since the obtained compounds are antioxidants in nature, I have interacted with experts in the analytic area of Cyclic Voltammetry, which has brought me closer to other disciplines of analysis.

Regarding the biological applications, rat C6 glioblastoma cells *in vitro* assays were used to determine novel anticancer activity as well as protecting capability of brain cells (synaptosomes). Trying to diversify my areas of research, recently I have been involved in a project diametrically opposed to the above, which has to do with magnetic nanoparticles, synthesized by coprecipitation, with the goal of use these materials in hyperthermia therapies against cancer cells. Although it is not my area of expertise, I have found great academic benefits due to the knowledge generated thought out the whole of this project. In sum and with great satisfaction, I have collaborated in several projects which have granted me the enough training and discipline to develop applied organic synthesis in a variety of projects.

Academic duties (ASUCQ):

Professor for the courses:

- Making Connections
- General Chemistry I
- General Chemistry I Lab
- General Chemistry II
- General Chemistry II Lab
- Organic Chemistry I
- Organic Chemistry I Lab
- Organic Chemistry II
- Organic Chemistry II Lab
- Research in Chemistry

- Biochemistry

Courses currently developing:

- Physical Chemistry I
- Physical Chemistry II

Other responsibilities:

- Lab Director from of the Chemistry Department (Fall 2017 to Fall 2018)
- Advisor for the schedule of STEM students (chemistry) from Fall 2017 to date.
- Chair of the selection committee for the Chemistry Faculty at ASUCQ (Summer 2017 to date).
- Waste treatment of chemical leftover for the Chem Labs at ASUCQ (Fall 2017 to date).
- Collaboration with the Students Recruitment Office at ASUCQ (Fall 2017 to date).
- Member of the bridge program committee at ASUCQ (Fall 2017 to Fall 2018). Supervisor of the Chemistry Club "S.T.E.M" (Fall 2017 to date).
- Member of the book selection committee (Fall 2017 to date).
- Promotor of the institutional collaboration between ASUCQ and IIM-UNAM (Fall 2017 to date).
- Active researcher partner with IIM-UNAM (Summer 2017 to date).

Academic training

- Research collaboration at the Institute of Materials Research at the UNAM to improve soil exploitation by reducing intrinsic viscosity of sludge with the assistance of magnetic nanoparticles (February 2016 to Date).
- Research collaboration at the Institute of Materials Research at the UNAM to develop the synthesis of magnetic nanoparticles to apply clinical therapies of hyperthermia. (March 2016 to Date).
- Ph.D. in Chemistry, grade obtained (without delay) through the project entitled "Synthesis of curcuminoids and study of reactivity towards superoxide radical via cyclic voltammetry and biological evaluation" Institute of Materials Research Campus Ciudad Universitaria (July 2011 to January 2016, granted by CONACyT).
- Master in Chemical Sciences, grade obtained (without delay) through the modality "General Knowledge Test." Faculty of Chemistry Campus Ciudad Universitaria (June 2009 to June 2011, granted by CONACyT).
- Degree in Chemistry, obtained through the project entitled "Study of speciation in soils contaminated with mercury from the state of Hidalgo" of the Faculty of Chemistry Campus Ciudad Universitaria (June 2008).
- Academic Assistant in the development of a method for remediation of soil contaminated by mercury Faculty of Chemistry Campus Ciudad Universitaria (July 2008 to March 2009).
- Educational assistance in teaching courses Organic I and III Faculty of Chemistry (2012-2103).

Papers and Patents

Papers:

- Publication of the manuscript "Systematic derivatization of curcumin and its effect on antioxidant capacity and action mechanism. Cyclic voltammetry and DFT as tools of analysis mechanism" to the journal ChemistrySelect of the Wiley Editorial House, <http://onlinelibrary.wiley.com/doi/10.1002/slct.201600992/pdf>
- Publication of the manuscript "Two-step synthetic strategy to obtain a curcumin derivative with enhanced water solubility, antioxidant power and anti-tumor activity" to the journal Materials Science and Engineering C of Elsevier Editorial System, <http://www.sciencedirect.com/science/article/pii/S0928493116317210>
- Publication of the manuscript "*Accelerated one-pot synthesis of coated magnetic nanoparticles from iron(II) as a single precursor*" in the Journal New Journal of Chemistry of the Royal Chemical Society Editorial House, available at <https://pubs.rsc.org/en/content/articlelanding/2018/nj/c8nj02270d#!divAbstract>

Patents:

- Patent registration of "Síntesis de un conjugado dendrón-curcumina que permite la solubilización de la curcumina en agua, sin perder su actividad antioxidante." At the Mexican Institute of Intellectual Property (IMPI) IMPI Folio: MX/E/015/038354.

Congresses

- Presentation of the project in 2015 QuimiUNAM conference entitled "Curcumin Derivatives with enhanced water solubility, antioxidant power and anti-tumor activity."
- Presentation of the work "Dendronization as strategy to improve solubility and increase bioavailability of bioactive molecules. Curcumin as case of study. "In the Biomaterials for Medical Applications Symposium presented at the XXIII International Materials Research Congress 2014.
- Presentation of the work "Synthetic strategies to improve increase water solubility of bioactive molecules. Curcumin as case of study "in International Conference on Polymers and Advanced Materials POLYMAT-2015.
- Presentation of the work "Curcuminoids synthesis and study of reactivity towards superoxide radical via cyclic voltammetry" in International Conference on Polymers and Advanced Materials POLYMAT-2015.
- Presentation of this project in the XXXVI Mexican National Congress of Pharmacology 2014 (first in poster presentation).
- Presentation "Study of mercury speciation in contaminated soils state of Hidalgo" Congress AMEQA 2008.

Equipment Training

- RMN: Jeol Eclipse 300 MHz & Varian UnitNova 300MHz FT-IR: Thermo Scientific Nicolet 6700.
- UV-vis: UV300 UNICAM.
- Freeze dryer: Labconco FreeZone1.
- BUCHI purification Chromatographer C620.
- Atomic Absorption PERKIN ELMER model 3100 with Hydride chamber.

Extra-academic courses

Faculty of Chemistry UNAM:

- Identification, quantification and speciation of metals: mercury, silver and lead (January 2007 to June 2008).
- Refresher Course taught by PERKIN ELMER (April 2007).
- Academic stay for the synthesis of steroidal compounds (January 2005).

Institute of Chemistry UNAM:

- Synthesis of new drugs with potential patent registration (July 2006 to December 2006).

Work experience

- Chemical consultant to reduce the amount of PET in plastic extrusion (April 2017).
- Advice on interpretation of IR, and modification of synthetic routes ISP México (October 2007). Advisory decreased hardness aquifers (March 2006).
- General Assistant in operation and customer service at VET MEDICAL SERVICE. (January 1997 to January 2001).

Languages

English:

- 90% English Institutional, **TOEFL: 600pts. , IELTS: B2**. Writing and conversational skills.

REFERENCES:

Academic Field

Dr. Patricia Guadarrama Acosta
Titular Researcher at Materials Research Institute.
National Autonomous University of Mexico (UNAM). Apartado
Postal 70-360, CU, Coyoacán, México DF 04510, México.
Phone: +52(55) 5622 4594
Fax: +52(55) 5616 1201
E-mail: patriciagua@iim.unam.mx

Dr. Serguei Fomine
Titular Researcher at Materials Research Institute.
National Autonomous University of Mexico (UNAM). Apartado
Postal 70-360, CU, Coyoacán, México DF 04510, México.
Phone: +52(55) 5622-4726
E-mail: fomine@unam.mx

Dra. Estrella Ramos Peña
Titular Researcher at Materials Research Institute.
National Autonomous University of Mexico (UNAM). Apartado
Postal 70-360, CU, Coyoacán, México DF 04510, México.
Phone: +52(55) 5622-4713
E-mail: eramos@iim.unam.mx

Character References

Helio Flores Santos (long-time family friend, 20+ years)
21 Hill Street CB101EH Saffron Walden Essex England
Phone: +447535555516
E-mail: mr.flores@virginmedia.com