

CURRENT JOB

- 8/12 - Present **Full Time Professor at Universidad Autónoma de Nuevo León (UANL), School of Chemistry, Department of Chemical Engineering**
Principal Investigator of the NanoBiotechnology Research Group at UANL
- 9/13 – Present **Member of Senior Advisory Board at ENBIOTIX**

EDUCATION

- 9/08-08/12 **Postdoctoral Position, Howard Hughes Medical Institute**, at Boston University and the Wyss Institute at Harvard University in Prof. James J. Collins Laboratory
Ph.D. , Chemical Engineering, at The University of Texas at Austin (08/08)
Dissertation Thesis: “Development of an opto-thermally responsive nanocomposite with potential applications as nanovalves for in vitro single-cell addressable drug delivery systems”
- 8/03-8/08 **Doctoral Nanotechnology Specialization Portfolio** (05/08)
- 8/03-5/05 **Master in Science, Chemical Engineering** at The University of Texas at Austin
- 8/98-12/02 **Bachelor in Science in Chemical Engineering, at the** Universidad Autónoma de Nuevo León, Monterrey Mexico.
 - Graduated Summa cum Laude with Highest Honors (GPA: 98/100)

RESEARCH EXPERIENCE

- Professor at UANL and Principal Investigator of the Nano Biotechnology Research Group**
- 8/12-Present
 - Focus on development and design of novel therapeutics to fight infectious disease through research at the interface of Nanotechnology and Biology.
 - Have been granted about 150,000 USD from different National Public Mexican Agencies and the Private Sector to work on different research projects.
- 9/08-8/12 **Postdoctoral Fellow**, Howard Hughes Medical Institute, Boston University and Wyss Institute at Harvard University
 - Focus on the study of mechanisms of resistance and mechanisms that lead to cell death in E. coli. Explore development of more efficient therapies using current antibiotics.
- 8/05-8/08 **Graduate Research Assistant**, Chemical Engineering Department, The University of Texas at Austin
PhD Thesis Co-advisors: Dr. Wolfgang Frey and Dr. Nicholas A. Peppas
 - Designed, synthesized, characterized and modeled novel intelligent *in vitro* system by coupling metallic nanostructures and polymeric materials. The system provided optically switchable “on-off” nanovalves capable of stimulating individual subcellular sites to control their behavior.
- 8/03-5/05 **Graduate Research Assistant**, Chemical Engineering Department, The University of Texas at Austin
Advisor: Dr. Miguel Jose Yacaman
 - Synthesis and characterization of silver nanoparticles; *in vitro* fundamental studies of bactericidal properties using transmission electron microscopy.
- 7/04-8/04 **Visiting Researcher**, Centro de Investigaciones Avanzadas (CINVESTAV), México City, México
Advisor: Dr. Juan B. Kouri,
 - Studied the bactericidal effect of silver nanoparticles *in vitro* in four genre gram-negative bacteria.
- 11/04-12/04 **Visiting Researcher**, Bio Safety Level 2 Lab at Universidad Autónoma de Nuevo León, Monterrey, México
 - Performed *in vivo* studies of cell toxicity and cell infection inhibitory effects of silver nanoparticles in HIV.
- 6/01-8/01 **Undergraduate Research**, Universidad Autónoma Metropolitana Ixtapalapa, México City, México
Advisor: Dr. Gustavo A. Fuentes
 - Studied the reduction of nitrogen oxide gases, generated in combustion, in three way catalytic converters for applications in the automotive industry.

AWARDS

- 03/14 Listed as one of the 2014 **30 Mexican Promises in their 30s** by **Revista Expansion and CNN Expansion** a member of the Time Editorial. Every year the magazine presents the 30 outstanding candidates most likely to shape the Mexican Economy
- 01/14 Recognized as a member **Level 1** of the Mexican **National Investigator System (SNI)**.
- 08/13 Recognized by the **Secretary of Public Education** as a **Full Time Professor** with the highest standards (**PROMEP**)
- 05/13 Recognized by the journal **Nanotechnology of the Insitute of Physiscs** to be among the **top 10 most cited authors** in the history of the journal.

- 05/12 Recognized by the **Journal of Nanobiotechnology** to be an author of one of the **top 10 most downloaded scientific articles** in the history of the journal.
- 02/11 Presentation of Chrysalis (Biopolymer Producing Company) at **Stanford University VC3 Competition**
- 08/11 **2nd Place Winner of the AgroBio Mexico National Press Prize**
- 08/07 Recipient of **Malcom Milburn Endowed Scholarship and Award in Entrepreneurial Studies**
- 08/07 Recipient of the **The Bruce and Sharon Thornton Commercial Potential Award**
- 04/07 **1st Place Idea to Product Competition**, at the University of Texas at Austin.
- 11/07 **2nd Place Idea to Product International Competition** at the University of Texas at Austin.
- 2006-2007 **ED Farmer Fellowship**. Given to outstanding Mexican and Texas residents to continue their studies towards a PhD degree at The University of Texas at Austin
- 2003-2007 **Consejo Nacional de Ciencia y Tecnología (CONACYT) Scholar**. Scholarship given by the Mexican National Science Foundation to pursue a PhD degree abroad
- 1999-2002 **TELMEX Scholar**. Prestigious fellowship to support undergraduate study.

SELECTED CONFERENCE ABSTRACTS

- 03/16/14 José Rubén Morones Ramírez. Engineering Approaches to Antimicrobial Therapeutic Design. Gordon Conference on New Antibacterial Discovery and Development. Ventura, CA, USA.
- 11/22/13 José Rubén Morones Ramírez. Nanobiotechnology and Synthetic Biology to Design Novel Therapeutics Against Infectious Diseases. Genobiotec13. Monterrey, N.L. Mexico.
- 10/25/13 José Rubén Morones Ramírez. El Rol del Ingeniero Químico en el Desarrollo de Estrategias Verdes para Diseñar Agentes Terapéuticos". LIII Convención Nacional del IMIQ. Cancun, QR, Mexico.
- 10/09/13 José Rubén Morones Ramírez El Rol del Ingeniero Químico en la Biotecnología. "Una historia de Cocteles y Materiales Inteligentes". Fusion IQ 2013. Monterrey, N.L. Mexico.
- 09/24/13 José Rubén Morones Ramírez. Estrategias Verdes Para el Diseño de Agentes Terapéuticos Inteligentes: Una historia de cocteles y nanomáquinas que operan *in vivo*". II Congreso Internacional de Ingeniería y Química Verde. Monterrey, NL, México
- 09/24/13 Ángel Josué Arteaga Garcés, María Elena Cantú Cárdenas, Mónica Noel Sánchez González, José Rubén Morones Ramírez, Juan Manuel Jáuregui Rincón, Producción de Endoglucanasas a partir de Residuos Agroindustriales Empleando Cepas de *Aspergillus niger* y *Cladosporium sp.*" II Congreso Internacional de Ingeniería y Química Verde. Monterrey, NL, México
- 09/22/13 Rubén Morones, Novel Approaches to Antimicrobial Therapeutic Design: A Story of Cocktails and *In Vivo* Nanomachines. CSR Antibiotics Workshop. Washington, D.C. USA.
- 10/19/12 Rubén Morones, "Estrategias Verdes para el Combate de Infecciones" 2012 Congreso Internacional de Ingeniería y Química Verde. Monterrey, NL, México
- 06/19/12 Rubén Morones, James J. Collins, "Silver as an important antibiotic adjuvant in the development of novel therapeutics" 2012 American Society of Microbiology. San Francisco, CA, USA
- 11/17/11 Rubén Morones, James J. Collins, "Silver Enhances and Potentiates Common Antibiotics", 2011 Wyss Institute of Harvard University Retreat. Boston, MA, USA
- 10/8/11 Rubén Morones, James J. Collins, "Design and Discovery of Novel Antimicrobial Therapies through Systems and Synthetic Biology", 2011 National Institute of Health Pioneer Award Meeting, Washington, DC, USA
- 08/10/10 Rubén Morones, James J. Collins, "Silver Salts as Antibiotic Potentiators", 2010 Biomedical Engineering Society Annual Meeting. Austin, TX, USA
- 06/17/10 Rubén Morones, James J. Collins, "Antimicrobial Mechanism of Silver Salts and their Potential as Antibiotic Potentiators", 2010 Boston Bacterial Meeting, Harvard University, Boston, MA, USA
- 11/25/07 Rubén Morones, and Wolfgang Frey, "Novel Synthesis of Opto-Thermal Responsive Polymer-Metal Nanocomposites", 2007 Material Research Society Fall Annual Meeting, Boston, MA, USA
- 09/26/07 Rubén Morones, and Wolfgang Frey, "PNIPAM for Plasmonic Particle Synthesis and Switching", 2007 BMES Annual Fall Meeting, Los Angeles, CA, USA
- 11/26/06 Rubén Morones, and Wolfgang Frey, "Application and Synthesis of Polymer-Metal Nanocomposites", 2006 Fall Annual MRS Meeting, Boston, MA, USA
- 11/11/06 Rubén Morones, and Wolfgang Frey, "Novel Synthesis of Polymer-Metal Nanocomposites", 2006 Annual AIChE Meeting, San Francisco, CA, USA
- 8/23/05 Rubén Morones, and Miguel Jose Yacaman, "The Bactericidal Effect of Silver Nanoparticles", XIV International Materials Research Congress, Cancun, Mexico

PUBLICATIONS

1. JR Morones, JL Elechiguerra, A Camacho, K Holt, JB Kouri, J Tapia, M Jose Yacaman. “The Bactericidal Effect of Silver Nanoparticles”, *Nanotechnology*. *16*, 2346-2353 (**Publication with more than 1800 cites**)
2. JL Elechiguerra, JL Burt, JR Morones, A Camacho, X Gao, H Lara, M Jose Yacaman, “Interaction of Silver Nanoparticles with HIV-1”, *Journal of Nanobiotechnology*, 2005, 3:6 (**Publication with more than 700 cites**)
3. JR Morones, Wolfgang Frey. “Environmentally Sensitive Silver Nanoparticles of Controlled Size Synthesized with PNIPAM as a Nucleating and Capping Agent”. *Langmuir*. *23*, 8180-8186 (**Publication with more than 50 cites**)
4. JR Morones, Wolfgang Frey. “Room Temperature Synthesis of an Optically and Thermally Responsive Hybrid PNIPAM–Gold Nanoparticle”. *Journal of Nanoparticle Research*. *12*, 1401-1414. (**Publication with more than 10 cites**)
5. JR Morones. “Environmentally Responsive Polymeric “Intelligent” Materials: The Ideal Components of Non-Mechanical Valves that Control Flow in Microfluidic Systems”. *Brazilian Journal of Chemical Engineering*. *27*, 1-14.
6. JR Morones-Ramirez. Bioinspired Synthesis of Optically and Thermally Responsive Nanoporous Membranes. *NPG Asia Materials*. *5*, e52.
7. JR Morones-Ramirez, JA Winkler, CS Spina, and JJ Collins. (2013) Silver Enhances the Activity and Broadens the Spectrum of Antibiotics Against Gram-negative Bacteria. *Science Translational Medicine*. *5*, 190ra81. (**Publication with more than 15 cites**)
8. S Kalghatgi, CS Spina, JC Costello, M Liesa, JR Morones-Ramirez, S Slomovic, A Molina, OS Shirihai, and JJ Collins. Clinically Relevant Doses of Bactericidal Antibiotics Induce Oxidative Damage in Mammalian Cells via a Common Mechanism. *Science Translational Medicine*. *5*, 192ra85. (**Publication with more than 10 cites**)
9. JR Morones-Ramirez (2014). Coupling Metallic Nanostructures to Thermally Responsive Polymers Allow the Development of Intelligent Responsive Membranes. *International Journal of Polymer Science*. (*In press*).
10. JR Morones. “La Biotecnología: Una Oportunidad Para México”, *Revista Ciencia y Desarrollo*. *35*, 8-17.
11. JR Morones. “La Plata como Importante Componente de los Antibióticos del Futuro”, *La Revista Digital Universitaria de la UNAM*. *10*, 69.
12. JR Morones. “Historia de la Plata: Metal Precioso y Potente Agente Microbicida”, *Revista Ciencia y Desarrollo*. *36*, 56-62.
13. JR Morones. “Una Nueva Tendencia en la Biotecnología”, *Ciencia (UANL)*. *13*, 299-306.
14. JR Morones. “Historia de la Plata: Su Impacto en las Antiguas Civilizaciones y la Sociedad Moderna”, *La Revista Digital de la UANL*. *11*, 7.
15. JR Morones-Ramirez. “Plata, Metal con Brillante Futuro en la Medicina”, *Revista Ciencia y Desarrollo*. (*In press*).

BOOKS

Jose Ruben Morones, Design of Opto-Thermally Responsive Nanocomposites: *Exploring their Applications as Nanovalves for In Vitro Single-Cell Addressable Delivery Systems*. Publisher VDM Verlag. ISBN-10: 3639155270

PATENTS

- 1.- Miguel Jose Yacaman, Jose Luis Elechiguerra, Jose Ruben Morones, Justin L. Burt, Leticia Larios, “Glycerin Based Synthesis of Silver Nanoparticles and Nanowires” (2007), US Serial No. 20060115536
- 2.- JJ Collins, JR Morones, J. Winkler, C. Spina, “Silver Salts Adjuvants Broaden the Spectrum and Potentiate Current Antibiotics”. Patent Accepted (2013).