



Personal Data

Data of Birth October 05, 1980
Place of Birth San Luis Potosí, México
Civil Status Married
Nationality Mexican
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Education

- **Ph.D. in Engineering and Materials Science**, Institutional Doctorate in Engineering and Material Science (DICIM), Universidad Autónoma de San Luis Potosi [UASLP].
Dissertation Title: Plasma surface modified TiO₂ particles applied to colloidal stability and biofunctional surface: influence on cell-substrate interaction.
Overall GPA: **9.5**/10. Period: 2009- 2014
- **M. S in Chemical Science**, School of Chemical Science (FCQ), Universidad Autónoma de San Luis Potosi [UASLP].
Thesis Title: Formation of condensed structures of tubulin for polycations.
Overall GPA: **9.16**/10. Period: 2003-2006
- **B.A. Chemical Engineer**, School of Chemical Science (FCQ), Universidad Autónoma de San Luis Potosi [UASLP].
Thesis Title: Glucose Oxidase Adsorption on Self-Assembled Polyelectrolyte Multilayers
Overall GPA: **8.34** / 10. Period: 1998-2002

Languages

Spanish (native), English (working knowledge), German (A2, Teil 1), French (A2)

Experience

RESEARCH EXPERIENCE

2007-2008

Research and Development Department, Lab (Support Engineering Development). *Company: 3M Mexico.* Control product for consumption area (Scotch Brite). Evaluation of products. Studies of costs.

MANUFACTURING EXPERIENCE

2006-2007

Process Engineer. COPER (Outsourcing for Company 3M Mexico). Responsible for the documentation of different areas. Startup teams to define operating conditions, balancing of lines, lean manufacturing, improvement, layouts and projects to improve productivity and control of waste (successful Six sigma project).

RESEARCH ASSISTANT

2005-2006

Academic Technician in Biomaterials Laboratory. San Luis Potosi

Autonomous University (UASLP). Administration laboratory. Experimental support. Purchase of equipment for the laboratory. Guides handling equipment such as security laboratory. Preparation of periodic table

Publications / Presentations

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|---|----------------|
| “Decoration of Graphene Oxide (GO) with silver nanoparticles (AgNPs) for Silybin detection at low power laser”, A. Solís-Gómez, R.Y. Sato-Berrú, Bañuelos-Muñetón J.G, J.M. Saniger, <i>In Process</i> . | In process |
| “Characterizing the properties of anticancer silibinin and silybin B complexes with UV-Vis, FT-IR, and Raman spectroscopies: A combined experimental and theoretical study”, A. Solís-Gómez, R.Y. Sato-Berrú, M.E. Mata-Zamora, J.M. Saniger, R.A Guirado-Lopez. <i>The Journal of Molecular Structure</i> , 183 (2019), 109-118 . | 2019 |
| “Enhanced photocatalytic hydrogen production by CdS nanofibers modified with graphene oxide and nickel nanoparticles under visible light”, Oscar Quiroz-Cardoso, PhD; Socorro Oros-Ruiz, Ph.D.; Araceli Solís-Gómez; Rosendo López; Ricardo Gómez. <i>Fuel, Volume 237, (2019), 227-235</i> . | 2019 |
| “Synthesis of Silver Colloids with a Homemade Light Source”, R. Y. Sato-Berrú, A. R. Vázquez-Olmos, E. V. Mejía-Uriarte, M. E. Mata-Zamora, A. Solís-Gómez, F. Paraguay-Delgado, J. M. Saniger. <i>Journal of Cluster Science</i> , https://doi.org/10.1007/s10876-018-1392-4 . Print ISSN 1040-7278. 1-6 | 2018 |
| “Improving stability of TiO ₂ particles in water by RF-plasma polymerization of poly(acrylic acid) on the particle surface”, Araceli Solís-Gómez, M. Guadalupe Neira-Velázquez, Juan Morales, Marco Antonio Sánchez-Castillo, Elías Pérez. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 451 (2014), 66-74 . | 2014 |
| “Glucose Oxidase Adsorption on Sequential Adsorbed Polyelectrolyte Films Studied Spectroscopic Techniques” F. Tristán, A. Solís, G. Palestino, C. Gergely, F. Cuisinier, and E. Pérez. <i>2nd Mexican Meeting on Theoretical and Experimental Physics 2005</i> , 110-120 | 2005 |
| Presentation at the seminar of the Laboratory of Basic Sciences; “Improved stability of TiO ₂ particles in aqueous medium by surface modification”. | January, 2013 |
| Presentation at the meeting of Engineering and Materials Science 2014; “Stability of TiO ₂ particles in water with surface modification via plasma polymerization”. | January 2014 |
| Presentation at the seminar of the Instituto de Ciencias Aplicadas y Tecnología; “Hybrid nanostructures for the improved vibrational detection for biological and | September 2018 |

environmental molecules".

Technical reports to companies:

"Colloidal stability"; Company: <i>Centro de Investigación en polímeros de Comex (CIP-Comex)</i>	October 2011
"The effect of the reactivity of TiO ₂ on a polymeric matrix and the possible passivation with light stabilizers. UV"; Company: <i>A. Schulman de Mexico.</i>	October 2012

Research Experience

POSTDOCTORAL POSITION

"Hybrid nanostructures with sensitivity for bimolecular and environmental detection" Laboratorio Universitario de Caracterización Espectroscópica (LUCE)/ Instituto de Ciencias Aplicadas y tecnología (ICAT)-Universidad Nacional Autónoma de México (UNAM)

September 2015 -
July 2019

THESIS THEME (PhD DEGREE)

"Stability and Compatibility of Titanium Dioxide Particles (TiO₂) in Suspensions and Films" Laboratory- Physics Institute (IF) UASLP and Centre Universitaire d'Evreux, France

Defense:
July 2014

This work has different collaborations and consist in 4 projects:

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| 1. "Buildup and characterization of hybrid films comprised of surface modified TiO₂ particles and polyelectrolytes" Dr. Guy Ladam, Dr. Beatrice Labat (Centre Universitaire d'Evreux, France). | Centre Universitaire d'Evreux, France
October 2011-
September 2012 |
| 2. "Determination of Colloidal Stability time" Dr. Julián M. Galván Miyoshi and Dr. Armando Gama Goicochea. (CIP-COMEX) | CIP-COMEX April-
September 2011 |
| 3. "The TiO₂ reactivity effect in polymers matrix and the possibility passivation with UV stabilizers" Collaboration with M.Sc Miguel A. Waldo and Dr. Zoe Quiñones (A. SCHULMAN). | 2010-2011 |
| 4. "Improving stability decreasing precipitation time of TiO₂ particles in water by RF-plasma PAA polymerization on particles surfaces" Collaboration with Dr. Guadalupe Neira (CIQA-Salttillo) and Dr. Juan Morales (UAM-Iztapalapa). | 2009-2010 |

THESIS THEME (MASTER DEGREE)

"Formation of condensed structures of tubulin for polycations" Biomaterials Laboratory-Physics Institute /Faculty of Chemical Sciences / UASLP.

September-2006

THESIS THEME (CHEMICAL ENGINEER)

"Glucose Oxidase Adsorption on Self-Assembled Polyelectrolyte Multilayers" Polymers Laboratory-Physics Institute / Faculty of Chemical Sciences / UASLP

Junio-2003

Research stays

University of Rouen, France

October 28 – November 14, 2013

Biophysics and Biomaterials laboratory, University Center of Evreux;

University of Rouen, France

October 2011- September 2012

Biophysics and Biomaterials laboratory, University Center of Evreux; Project: *"Buildup and characterization of hybrid films comprised of surface modified TiO₂ particles and polyelectrolytes"*. Dr. Guy Ladam.

Polymer Research Center (CIP) in COMEX Company, Mexico City

April- September 2011

Project: *"Determination of time in colloidal stability"*; Dr. Julián M. Galván Miyoshi and Dr. Armando Gama Goicochea.

Congresses & courses

I have been in 22 congresses in Mexico and I have presented 16 investigation works in them.

- **"Fluorescence, applications, Innovation and Technology"**. Dr Cary Davies, Fluorescence specialist, Horiba Scientific. 2019
- **"Advanced Raman Microscopy and AFM Training with a WITec alpha300 RAMicroscopy System"**, 16H. Stefan Gomes da Costa, Applications Scientist, WITec GmbH 2018
- **"Development Plans Business Research Projects, Development Technology and Innovation (R + D + I)**. COPOCYT, CANACINTRA, UPSLP, UASLP, IPICYT, ITESM, CIATEQ. 2010
- **Characterization of Protective Coatings by Means of Analytical Techniques**, 20 Hrs. Metallurgy Institute 2009
- **Green Belt**, Six Sigma II. 2 days. 3M Company 2007
- **Green Belt**, Six Sigma I. 2 days. 3M Company 2007

Other skills

Manage of the techniques: UV-VIS spectroscopy, Circular Dichroism (CD), Fluorescence Resonance Energy Transfer (FRET) and Fluorescence, Differential Interference Contrast (DIC) Microscopy, Atomic Force Microscopy (AFM), Infrared spectrometer (FTIR) and ATR-FTIR, DLS in Zetasizer for Zeta potential and particle size, Raman spectroscopy, Materials Testing Machine for Tensile, Fatigue, Impact und compression (INSTRON), Turbiscan (colloidal stability), pH-meter, thermogravimetric analysis (TGA), Spectra interpretation of Nuclear magnetic resonance spectroscopy (NMR), X-ray photoelectron spectroscopy (XPS) and X-ray diffraction (XRD).

Computer skills

Operating Systems: Mac OS, MSDOS, Windows 95/98/NT, Windows XP, Windows 7, UNIX, Suse, Ubuntu; Computer Languages: Basic, Visual Basic; Scientific Applications: Origin, Simulator: Design II, Program EES (engineer equation solve), Project Pro, Mini Tab; Office Applications: Microsoft PowerPoint, Access, Excel, Word, Lotus Notes; Other: AS400/BPCS, and Internet, Gauss view.