

Gabriel Luna-Bárceñas, Ph.D.
Cinvestav Unidad Querétaro, MÉXICO

Education

1992-1997 Ph.D., The University of Texas at Austin, Austin, TX USA.
1997-1999 Postdoc, Princeton University, Princeton, NJ, USA.
1989-1991 MSc, Chemical Engineering, Instituto Tecnológico de Celaya, MEXICO
1984-1988 BSc, Chemical Engineering, Instituto Tecnológico de Celaya, MEXICO

Work experience

2000 Senior Researcher, CID-DESC.
2000- Professor, Cinvestav Unidad Querétaro.

Research interests

Synthesis and characterization of biopolymers and nanocomposites for biomedical applications. Relaxation phenomena in bionanocomposites. R&D for industry-related projects.

Supervised theses

17 PhD, 17 MSc, 10 Undergraduate.

Industrial projects

Agromaquilas, SA de CV, Atitalaquia, Hgo, MEXICO
Grupo MEZFER, SA de CV, Celaya, Gto. MEXICO
MegaEmpack, SA de CV, Querétaro, Qro. MEXICO
Macrivcel, SA de CV, Celaya, Gto. MEXICO
Vision Care, SA de CV, México, DF. MEXICO
Ciba Chemicals, Lapertheim, Germany (in collaboration with CIQA, MEXICO)
Oculus Technologies, Petaluma, CA, USA.
Interlub, SA de CV, Guajalajara, Jal. (in collaboration with CIATEJ, MEXICO)

Funded research projects

"Agronanotechnology products for the high-end *Annona muricata* L (guanábana) production", MEXICO
"Bacteria-mediated synthesis of metal nanoparticles from bioremediation of contaminated waters along the U.S.-Mexico Border". CONACYT-UNIVERSITY OF TEXAS
"Formation of polymeric materials by supercritical fluid processing", MEXICO
"Supercritical fluid based biopolymer nanoparticles for biomedical applications", NSF-CONACYT (US-MEXICO)
"Supercritical carbon dioxide: an environmental alternative", MEXICO
"Biopolymers for biomedical applications", Interamerican Materials Cooperation", NSF-CONACYT (US- MEXICO)
"Biopolymers: an alternative in biomedical applications", MEXICO
"Tissue Engineering and Regenerative Medicine for the Development of Human Pinna" MEXICO

Edited books

New Trends in Polymer Science, Wiley-VCH Germany, pp. 368, Editores: K. Matyjaszewski, R. Advincula, E. Saldivar-Guerra, G. Luna-Barceñas, and R. Gonzalez-Nuñez, (2009).
Advances in Polymer Science, Wiley-VCH Germany, pp 374, Editores: E. Saldivar-Guerra, Gabriel Luna-Barceñas, K. Matyjaszewski, R. Advincula, A. Martinez-Richa, and A. Licea-Claverie (2017)

Books

Chitosan-based Hydrogels for Tissue Engineering Applications, Nova Science Publishers, New York, New York, pp 120 (2011).

Publications

154 JCR; some selected:

"Free-radical polymerizations of and in deep-eutectic solvents: green synthesis of functional materials". Progress in Polymer Science. In press (2017). IF=25.766.
"Sustainable solvent-induced polymorphism in chitin films". Green Chemistry 10.1039/C6GC00628K (2016). IF=8.506.
"Phenytoin carried by silica core iron oxide nanoparticles reduces the expression of pharmacoresistant seizures in rats". Nanomedicine 10(24), 3563–3577 (2015). IF=5.413.
"Temperature-induced Au nanostructure synthesis in a nonaqueous deep-eutectic solvent for high performance electrocatalysis". J. Mater. Chem. A. 3, 15869-15875 (2015). IF=8.262.
"Formation of Chitin Nanofibers by Supercritical Antisolvent". Journal of Biomedical Nanotechnology, 1:109-114 (2005). IF=7.578
"Frontal polymerizations carried out in deep-eutectic mixtures providing both the monomers and the polymerization medium". Chemical Communications, 47:5328-5330 (2011). IF= 6.834
"Synthesis of macroporous poly(acrylic acid)-carbon nanotube composites by frontal polymerization in deep-eutectic solvents". Journal of Materials Chemistry A, 1:3970-3976 (2013). IF= 8.262
"New insights into the bactericidal activity of chitosan-Ag bionanocomposite: The role of the electrical conductivity", Colloids and Surfaces B: Biointerfaces, 111:741-746 (2013). IF= 3.902
"Controlled release of lidocaine hydrochloride from polymerized drug-based deep-eutectic solvents. J. Mater. Chem. B, 2, 7495-7501 (2014). IF= 4.872
"Kinetics and conformational stability studies of recombinant leucine aminopeptidase". International Journal of Biological Macromolecules, 64:306-312 (2014). IF= 3.138
"Exploitation of anaerobic enriched mixed bacteria (AEMB) for the silver and gold nanoparticles synthesis. Colloids and Surfaces A: Physicochem. Eng. Aspects, 462: 264–270 (2014). IF=2.760
"Effect of doping in carbon nanotubes on the viability of biomimetic chitosan-carbon nanotubes-hydroxyapatite scaffolds", J. Biomed Mater. Res. Part A (2014). IF= 3.263
"Chitosan/silver nanocomposites: Synergistic antibacterial action of silver nanoparticles and silver ions", European Polymer Journal. April (2015), IF=3.485

International Patents No. WO 2009/065774 A1, "Grafting of Ethylenically Unsaturated Monomers onto Polymers in Supercritical Carbon Dioxide", International Publication Date: 28 May 2009. Applicant: CIBA Holding Inc.; Klybeckstrasse 141, CH-4057 Basel (CH).

No. MX/a/2018/008238 (Pending), "High Resolution Turbidimetry by imaging differential analysis". Applicant: Cinvestav del IPN, Mexico City, (MX).

50 Proceedings, 35 oral presentations. Invited talks: XXXIX Meeting of The Mexican Pharmacy Association, Puerto Vallarta, 2006. Fifth Supercritical Fluid Congress (Georgia Tech, U. Texas at Austin, North Carolina State U., U. of North Carolina), Austin, TX, 2004. Workshop on Nanoscale Science, Technology and Innovation, Rio de Janeiro, Brazil, August 2016. ca. 2000 citations, H=25.

Graduate-level courses

Advanced mathematics, Advanced thermodynamics, Kinetics of materials, Polymer Science, Biomaterials.

Scientific meeting organization

Mexican Polymer Society: 2005-2011, 2013-2015, Macromex 2014. Chairman de Macromex 2008, Co-chairman Macromex 2011 (USA-Canada-México Meetings on Advances in Polymer Science, in collaboration with ACS Polymer Division). International Advisory Committee, IUPAC Polymer Division World Conference 2012.

Prizes & awards

1st prize on MSc Thesis Technical University of Berlin, Germany (Sebastian Stolz), Phase behavior of styrene-co-isoprene-co-styrene in tetrahydrofuran in supercritical carbon dioxide), 2005. Co-director: Wolfgang Arlt.

E.D. Farmer Scholarship, University of Texas at Austin, 1995 and 1996.

Mexican Polymer Society, President 2005-2007.

Fulbright Scholar, University of Texas at Austin, 2008, 2014.

National Investigator SNI-III, 2015-2021, Member of the Evaluation Committee Area VII (2015-2017)

IUPAC Polymer Division, Mexico & Latin America Delegate, 2008-to date.

Guest editor, Macromolecular Symposia (2009, 2015, 2016).

President of the Nanoscience & Nanotechnology Network of Mexico 2015-to date