Dr. Juan Carlos Axayacatl Morales-Guadarrama SNI I

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Educación

Pos Doctorado.
Instituto Nacional de Investigaciones Nucleares. México, Ocoyoacac, Estado de México.

Doctorado en Ciencias en Ingeniería Biomédica.
Universidad Autónoma Metropolitana. Unidad Iztapalapa, México D.F.

Maestría en Ciencias en Ingeniería Biomédica.
Universidad Autónoma Metropolitana. Unidad Iztapalapa, México D.F.

Ingeniería en Biónica.
Instituto Politécnico Nacional**.** Unidad Profesional Interdisciplinaria de Ingeniería en Tecnologías Avanzadas (UPIITA). México D.F.

Técnico en Sistemas Digitales.
Instituto Politécnico Nacional. Centro de Estudios Científicos y Tecnológicos (C.E.C.yT.) No 1

Experiencia laboral

- **Universidad Autónoma Metropolitana, Unidad Iztapalapa.** Septiembre 2016
  Profesor Titular "C"
- **Centro Nacional de Investigación en Imagenología e Instrumentación Médica.** Agosto 2013
  Investigador
- **Comunicación en el aire S.A. de C.V.** Enero del 2006
  Subdirección de sistemas.
  Diseño, desarrollo e implementación de sistema administrativo y punto de venta WEB (SEAM) y Standalone (JAVA).
- **World Games** Diciembre del 2003
  Subdirección de sistemas. Integración del área de sistemas.
  Diseño, desarrollo e implementación de sistema administrativo y punto de venta WEB (Servlets) y Standalone (JAVA).

Publicaciones/Presentaciones

- ***Demonstration of therapeutic effect of plasma-synthesized polypyrrole/iodine biopolymer in rhesus monkey with complete spinal cord section.*** *Journal of Materials Science: Materials in Medicine.* 2025
- ***Metabolitos cuantificables por resonancia magnética en lesión de medula espinal implantada con polímero derivado del pirrol.*** *UAM-DAI* 2025
- ***Therapeutic effects of plasma-synthesized polypyrrole biopolymer shown in rats with spinal cord injury are similar to those obtained in non-human primate;*** *Advanced Materials Science World Congress* 2024
- ***Quantitative Magnetic Resonance Biomarkers Identify Significant Recovery from Spinal Cord Injury after Bioactive Implants;*** *Archives of Medical Research* 2024
- ***Improved Recovery of Complete Spinal Cord Transection by a Plasma-Modified Fibrillar Scaffold;*** *Polymers: Development and Application of Polymer Scaffolds, 2nd Volume* 2024
- ***Biopolímeros y rehabilitación, estrategías terapéuticas en lesiones traumáticas de la médula espinal;*** *Foro de Salud y bienestar UAM-I* 2023
- ***MRI And DTI Longitudinal Study In Spinal Cord Chronic Injury With Plasma Pyrrole Polymer Implant;*** *19th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics* 2023
- ***Plasma-Synthesized Pyrrole-Derived Polymer Evolution Implanted in Rhesus Monkey Spinal Cord;*** *3rd International Conference on Bioengineering and Polymer Science* 2023
- ***Gene expression and locomotor recovery in adult rats with spinal cord injury and plasma-synthesized polypyrrole/iodine application combined with a mixed rehabilitation scheme;*** *Frontiers in Neurology* 2023
- ***Plasma-Synthesized Pyrrole-Derived Polymer Evolution Implanted in Rhesus Monkey Spinal Cord Transection Model;*** *5th International Conference on Materials Science & Nanotechnology* 2022

- ***MRI Study of Plasma-Synthesized Pyrrole-Derived Polymer Evolution Implanted in Rhesus Monkey Spinal Cord Transection Model;*** *3rd International Conference on Polymer Science and Composite Materials* 2022
- ***Centro Nacional de Investigación en Imagenología e Instrumentación Médica;*** *Contactos, Revista de Educación en Ciencias e Ingeniería* 2022
- ***Evolution of Spinal Cord Transection of Rhesus Monkey Implanted with Polymer Synthesized by Plasma Evaluated by Diffusion Tensor Imaging;*** *Polymers* 2022
- ***Improved post-stroke spontaneous recovery by astrocytic extracellular vesicles;*** *Molecular Therapy.* 2021
- ***Pyrrole Plasma Polymer-Coated Electrospun Scaffolds for Neural Tissue Engineering;*** *Polymers.* 2021
- ***Evaluación de la Conectividad Funcional Relacionada a Procesos Cognitivos en Trabajadores Expuestos a Vapores de Tolueno y Derivados ;*** *44° Congreso Nacional de Ingeniería Biomédica.* 2021
- ***Spinal Cord Chronic Injury implanted with Plasma Pyrrole Polymers: MRI Study;*** *11th World Biomaterials Congress.* 2021
- ***Characterization of Pyrrole Plasma Polymer-Coated Electrospun Scaffolds for Neural Tissue Repair;*** *Macromex 2021.* 2021
- ***Longitudinal magnetic resonance evaluation of the schizophrenia model of neonatal lesion in the ventral hippocampus;*** *CIRUGIA Y CIRUJANOS.* 2021
- ***Recovery of motor function after traumatic spinal cord injury by using plasma-synthesized polypyrrole/iodine application in combination with a mixed rehabilitation scheme.*** *Journal of Materials Science*: Materials in Medicine**.** 2020
- ***Lesion corroboration through MRI in the neonatal ventral hippocampal lesion rat model of schizophrenia;*** *Rev Mex Psiq 2020; 1(6):176-178* 2020
- ***Propuesta de Diseño de Ayuda Biomecánica Exterior para Personas Adultas Mayores;*** *Proceedings of the 13th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2020) - Volume 2: BIOIMAGING, pages 150-155 ISBN: 978-989-758-398-8.* 2020
- ***El Bio–diseño, una alternativa para el desarrollo de productos.*** *De los métodos y las maneras": ISBN: 978-607-28-1325-0* 2020
- **Computed tomography for the determination of bone density in Macaca mulatta;** *Veterinary Radiology & Ultrasound* 2018
- **Effect of the combined treatment of albumin with plasma synthesised pyrrole polymers on motor recovery after traumatic spinal cord injury in rats;** *Journal of Materials Science: Materials in Medicine.* 2018
- **Rat spinal cord transection injury progression: An MRI study;** *IFMBE Proceedings.* 2017
- **Delayed injection of polypyrrole doped with iodine particle suspension after spinal cord injury in rats improves functional recovery and decreased tissue damage evaluated by 3.0 Tesla in vivo magnetic resonance imaging;** *The Spine Journal.* 2017
- **Assessment of the systemic distribution of a bioconjugated anti-Her2 magnetic nanoparticle in a breast cancer model by means of magnetic resonance imaging;** *J Nanopart Res.* 2016
- **Functional recovery in spinal cord injured rats using polypyrrole/ iodine implants and treadmill training; J Mater Sci: Mater Med (2015)26:209.** 2015
- **Spinal Cord Injury Recovery of rhesus Monkey Implanted with PPy/I Plasma Polymer; ESB2015; Kraków, Poland.** 2015

- **Effect of pyrrole implants synthesized by different methods on spinal cord injuries of rats. Rmib** 2015
- **Modeling the effects of biomass accumulation on the performance of a biotrickling filter packed with puf support for the alkaline biotreatment of dimethyl disulfide vapors in air; Applied Microbiology and Biotechnology** 2014
- **Tractografía DTI en lesión de medula espinal con implante de polímero PPy/I sintetizado por plasma en Mono Rhesus (Macaca Mulatta).** *CNIB XXXVI.* 2013. **Ganador de el concurso estudiantil "DR. BONFIGLIO MUÑOZ BOJALIL" nivel posgrado.** 2013
- **CAT and MRI Studies of Spinal Cord Injured Rats Implanted with PPy/I.** *RMIB*, vol. 34, pp. 145–155, Aug. 2013 2013
- **DTI tractography and MRI in chronic cerebral ischemia in rhesus monkey (Macaca mulatta) in vivo.** Arquivos de neuro-psiquiatria 2013
- **Plasma polypyrrole implants recover motor function in rats after spinal cord transection.;** Journal of Materials Science: Materials in Medicine. 2012
- **Tissue spinal cord response in rats after implants of polypyrrole and polyethylene glycol obtained by plasma;** Journal of Materials Science: Materials in Medicine. 2008
- **Influencia del campo magnético e implantes de polímero semiconductor sobre la regeneración axonal en un modelo de lesión traumática de medula espinal;** IV Latin American Congress on Biomedical Engineering 2007, Bioengineering Solutions for Latin America Health. 2007
- **Estudio de implante de polímero semiconductor en lesión de medula espinal en rata mediante análisis de imágenes;** IV Latin American Congress on Biomedical Engineering 2007, Bioengineering Solutions for Latin America Health. 2007
- **Evaluación electrofisiológica del efecto de tres implantes poliméricos en la función nerviosa en un modelo de lesión por sección completa de la medula espinal en ratas;** IV Latin American Congress on Biomedical Engineering 2007, Bioengineering Solutions for Latin America Health. 2007

Patentes

- **Use of plasma-synthesised pyrrole-derived polymers for the neuroprotection and reconnection of the central nervous system. China. CN101821814B** 2015
- **Use of plasma-synthesised pyrrole-derived polymers for the neuroprotection and reconnection of the central nervous system. Japón. JP5587177B2.** 2014
- **Use of plasma-synthesised pyrrole-derived polymers for the neuroprotection and reconnection of the central nervous system. USA. US8563626B2.** 2013
- **Use of plasma-synthesised pyrrole-derived polymers for the neuroprotection and reconnection of the central nervous system. Unión Europea. EP2164078B1.** 2013
- **Use of plasma-synthesised pyrrole-derived polymers for the neuroprotection and reconnection of the central nervous system. Rusia. RU2471437C2.** 2013
- **Uso de polímeros derivados del pirrol sintetizados por plasma para la neuroprotección y la reconexión del sistema nervioso central. México. 270789** 2009

Premios

- **1er lugar** en la modalidad de presentación oral, **XXVI CTC ININ-SUTIN** 2016
- Acreedor a la "**Medalla al Mérito Universitario**" UAM-Iztapalapa 2015
- Ganador de el concurso estudiantil **"DR. BONFIGLIO MUÑOZ BOJALIL"** nivel posgrado**.** 2013