NANOSCIENCE AND NANOTECHNOLOGY PROGRAM

Maximo Lopez-Lopez, PhD

Research Interests

- MBE growth of III-V compounds and III-nitrides
- Heteroepitaxy of large lattice mismatch systems
- Fabrication and characterization of semiconductor nanostructures.
- Low dimensional structures: quantum wells, quantum wires, and quantum dots.
- Semiconductor structures with magnetic properties: GaMnAs, GaMnN.

Dr. Maximo Lopez is Professor in the Department of Physics. He completed PhD at the Toyohashi University of Technology in Japan. From 1992 to 1995 he worked at the Optoelectronic Technology Research Laboratory (OTL) in Tsukuba City, Japan, where he developed techniques for the fabrication of semiconductor nanostructures. Back in Mexico, he created the first molecular beam epitaxy (MBE) laboratory in Mexico for the growth of III-V and III-N semiconductors at Cinvestav. Dr. Maximo Lopez currently has more than 100 articles with more than 1000 citations. He has graduated 17 Ph.D. students and 20 M.Sc.

Selected Honours and Awards

- Monbusho-Japan Ph.D. Scholarship.
- 2003 Research Award of the Mexican Academy of Sciences.
- President, Mexican Vacuum Society, 1998-2000.
- SNI level III.
- Chairman of the Physics Department 2011-2019.

Selected Funding

- Conacyt, ICyTDF, Proped, SENER-Conacyt

Research Projects:

- Cost-efficient and radiation-tolerant pixel detectors for ionizing radiation based on thin film technology.
- Fabrication of solar cells based in Ga(In)N alloy semiconductors.
- Development of nanostructured semiconductor materials for applications in infrared detectors.
- Growth and characterization of binary and ternary alloys of III-N and III-V materials.
- Study of diluted nitrides (GaAsN): Growth mechanism, physical properties and synthesis of low dimensional systems.
- Fabrication of quantum Hall effect devices for the development of electric resistance standard.
- GaIn(N)As quantum dots for fiber-optic communication applications.