

Prof. Ciro Falcony



Research Interests

- Dielectric films
- Luminescent materials
- Optical and electrical properties of nanostructured materials

Ciro Falcony Guajardo is professor of the Department of Physics and an active participant of the Nanoscience and Nanotechnology program of CINVESTAV in Mexico City. He completed his MSc at the Physics department in CINVESTAV and PhD at the University of Lehigh at USA. He did post-doctoral training at IBM T.J. Watson Research center in USA from 1980 to 1982. During this time, he developed a deep interest on material science and on physics of solid-state devices. He has been at the Physics department at CINVESTAV, Mexico City since 1982. Prof. Falcony is author of more than 280 publications that received approx. 2,150 citations. He has been leader for more than 15 scientific proposals, supported by science foundations and/or industry, on investigating the optical and electrical characteristics of thin films and nanostructured inorganic and hybrid materials. Dr. Falcony has participated on the organizing committees of several national and international congresses on different fields of materials science.

Selected Honours and Awards

- 1998 Dyoniza Ilkovic Medal awarded by the Slovak Academy of Sciences for Research achievements on Physics and Physic-chemistry areas
- 2012 Medalla Fernando Alba, IF UNAM, for achievements on Experimental Physics
- 2017 Presea Lazaro Cardenas, by IPN for outstanding physics and mathematics career achievements.

Selected Funding

- Conacyt, NSF

Research Project: Synthesis and characterization of luminescent organic/inorganic hybrid materials

My lab has the overall interest of understanding the physics and chemical mechanisms of light absorption and emission in nanostructured materials. In particular, I am interested in the synthesis and characterization of hybrid organic/inorganic materials based on metal and nano particles functionalized with organic molecules or complexes. At Cinvestav, I have established my lines of research focusing on the design, synthesis and characterization of this type of materials with techniques such as spray pyrolysis, sputtering, hydrothermal and other synthesis techniques and spectral light absorption, emission and structural characterization using technique such as spectrofluorimetry, x-ray diffraction scanning and transmission electron microscopy among other characterization techniques. The potential applications for these materials include solar energy harvesting and medical imaging and treatments of specific type of cells and biological systems.