

SAUCEDO FLORES EMMANUEL

MATERIAS QUE PUEDE IMPARTIR EN LA MAESTRÍA EN INGENIERÍA DE PROYECTOS TECNOLÓGICOS:

- Temas Selectos (Manufactura)
- Temas Selectos (Control)

1. FORMACIÓN ACADÉMICA

MEMS Technology Specialization, 2002-2003
México-USA Science Fundation (FUMEC) and UNAM Engineering Faculty, Mexico City, Mexico

PhD in Electrical Engineering, 1978-1982
Solid State Electronics Section of the Electrical Engineering Department of the CINVESTAV- IPN, Mexico City, Mexico

MS Degree in Electrical Engineering, 1974-1976
Solid State Electronics Section of the Electrical Engineering Department of the *Centro de Investigación y Estudios Avanzados* (CINVESTAV), Mexico City, Mexico

Diplôme Universitaire d'Energie Solaire, 01/1977 to 06/1977
Centre Universitaire de Perpignan, France and Université de Ciencias et Technologies de Languedoc, Montpellier, France. Received scholarship from French government.

BS Degree in Physics, 1970-1974
Universidad Autónoma de Nuevo Leon, Monterrey, Mexico

2. EXPERIENCIA DOCENTE

CINVESTAV- Instituto Politécnico Nacional 1980 - 1984
Professor of the Solid State Electronics Section - Electrical Engineering Department
Develop research projects to support Si wafer processing at the Solar Cells Pilot Plant.
Tutor master in science students.

Lecturing at master and doctorate semiconductor programs.

- (1) Modern Physics and Applied Mathematics in Engineering, 1984.
- (2) Measurements of Fundamental Parameters in Semiconductors, 1984.
- (3) Photovoltaic Conversion, 1983
- (4) Surfaces, Interfaces and Heterojunctions, 1981
- (5) Physics of Semiconductors, 1980.

Universidad Autónoma Metropolitana 1982 – 1983
Part Time Proffessor
Quantitative Methods Applied to Economics - Department of Economics

Stanford University School of Engineering - Universidad Autónoma de Guadalajara 1988 – 1989
Invited Proffessor

Digital MOS Integrated Circuits Analysis and Design. Master's Program in Electrical Engineering.

Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
Part Time Professor

1992

Statistical Methods. Management Master's Program at the School of High Management of Enterprises for Graduates.

3. PUBLICACIONES

Internacional

- "Un-doped and F-doped Spray Deposited SnO₂ Films. Growth and Characterization". Proceedings of the 12th International Vacuum Congress and 8th International Congress on Solid Surfaces, 12-16 Oct. 1992, Netherlands
- "Characterization of Growth and Properties of Spray Deposited SnO_x Films". Journal of Crystal Growth, 1981.
- "A 14% Efficiency SnO_x-SiO₂-(n) Si Solar Cell". Proceedings of the 14th IEEE Specialist Photovoltaics Conference. San Diego, Cal., USA, pages 1370-1375, 1980.
- "Properties of Chemically Sprayed SnO_x Anti-reflecting Films on Silicon Solar Cells". Solar Energy Materials, Vol. 1, 3-4, p. 299-311, 1979
- "Reduction of Surface Recombination Velocity of Silicon Surfaces by SnO_x Films". Photovoltaic Solar Energy Conference Proceedings, Berlin, Germany, p.647-653, 1979.
- Over 20 Company (Motorola and On Semiconductor Corporations) Technical Excellence Reports of Technology Developments.
- "Surface Micro-Machining Construction Method of a Pin Joint Actuated Pinion-Gear Mechanism With Only 2-Active Poly-Si Layers". Presented at the V Texas Area MEMS Workshop Series, 6 May 2003.
- "Study of the Pull-in Voltage for MEMS Parallel Plate Capacitor Actuators". Presented at the Material Research Society Fall Meeting, Boston Ma. USA, 01-05 December 2003. Published at the MRS Symposium A: Micro- and Nano-Systems, Vol 782, 2004, ISBN:1-55899-720-2. A5.86.1-7.
- "High Frequency Study of the MEMS Parallel Plate Capacitor", Proceedings of the Fifth International Conference on Microelectronics and Interfaces (ICMI04) in Santa Clara, Cal. 1-3 March 2004 published by the American Vacuum Society (AVS) New York, NY. pp. 127-129, ISBN 0-9713614-2-8.
- "Improved Construction Method of a Surface Micro-Machined Pin-Jointed Actuator-Tool Using Only Two Mechanical Layers" Proc. of the SPIE Smart Structures and Materials. San Diego Cal. USA, 14-18 March 2004. Vol 5389, pp. 248-255. ISSN: 0277-786X.
- "Dynamic Behavior Modeling of MEMS Parallel Plate Capacitors" IEEE Positioning, Location and Navigation Symposium (PLANS) 2004. Monterey, Cal. USA 26-29 April 2004. ISBN: 0-7803-8417-2. pp. 15-19.
- "The k-Hardening Effect on High Frequency Modeling of Micro-Machined Capacitive Sensors and Actuators" (invited paper) Proc. of the 2004 SEM X International Congress and Exposition on Experimental and Applied Mechanics organized by the Society for Experimental Mechanics. Costa Mesa, Cal. USA, 7-10 June 2004. ISBN: 0-912053-87-9. ISSN: 1046-6762.

Nacional

- 10 Papers in several national scientific symposiums and seminars.

- Master in Science Thesis. Title "Contribución al Estudio de la Heteroestructura Fotovoltaica nCdS-pCuxS Obtenida Mediante la Técnica Rocío Químico-Conversion Topoquímica" ("Contribution to the Study of the Photovoltaic Heterostructure nCdS-pCuxS Obtained by the Chemical Spray-Topochemical Conversion Technique"), Solid State Electronics Section of the Electrical Engineering Department of the CINVESTAV-IPN, Mexico D.F, 1977
- PhD Thesis. Title "Estudio Teórico-Práctico de la Estructura Fotovoltaica SnOx-SiO2-(n)Si" ("Theoretical and Experimental Study of the Photovoltaic Structure SnOx-SiO2-(n)Si"), Solid State Electronics Section of the Electrical Engineering Department of the CINVESTAV-IPN, Mexico D.F, 1982

4. OTROS (patentes, derechos de autor, etc.)

- **US005500377A** "DESCRIPTION METHOD OF MAKING SURGE SUPPRESSOR SWITCHING DEVICE", Motorola Inc. Date of patent: March 19, 1996, USA.
- **US007205583B1** "THYRISTOR AND METHOD OF MANUFACTURE" Semiconductor Components Industries (ON Semiconductor). Date of patent: April 17 2007, USA.
- **US007339203B2** "THYRISTOR AND METHOD OF MANUFACTURE" Semiconductor Components Industries (ON Semiconductor). Date of patent:: Mar 04 2008, USA.
- US20090250720 "TRANSIENT VOLTAGE SUPPRESSOR AND METHODS" Semiconductor Components Industries (ON Semiconductor). Filed on Apr 04, 2008, patent application publication date: Oct 08, 2009, USA.
- US20090273876 "TRANSIENT VOLTAGE SUPPRESSOR AND METHOD" Semiconductor Components Industries (ON Semiconductor). Filed on May 01, 2008, patent application publication date: Nov 05, 2009, USA.
- US20090273868 "TRANSIENT VOLTAGE SUPPRESSOR AND METHOD" Semiconductor Components Industries (ON Semiconductor). Filed on May 07, 2008, patent application publication date: Nov 05, 2009, USA.

Premios y reconocimientos

- Inducted as member of the National System of Researchers (SNI) by the Mexican National Science and Technology Council (CONACYT) and Public Education Ministry (SEP), 2011-2013.
- Inducted as Level III Technologist at the National System of Researchers (SNI) by the Mexican National Science and Technology Council (CONACYT) and Public Education Ministry (SEP), 2003-2007.
- Inducted as member of the first generation -1984 - of the National System of Researchers (SNI) Level I by the Mexican National Science and Technology Council (CONACYT) and Public Education Ministry (SEP).
- Inducted as Member of the Technical Ladder Staff of ON Semiconductor as Senior Principal Staff Scientist, 1999-2001.
- Inducted as Member of the Technical Ladder Staff of Motorola Guadalajara as Principal Staff Engineer, 1996-1999
- Received a Plaque of Appreciation for invaluable support as Co-Chairman of the Device Physics and Design Session of the 2nd ON Semiconductor Internal Manufacturing Technical Symposium held in the Philippines, November, 2000
- Awarded the Y2000 Technical Excellence Creativity Prize from ON Semiconductor, Guadalajara, August, 2000

- Inducted as Technical Member of the Change Action Board (CAB) of the Motorola-ON Semiconductor Guadalajara Plant, 1996-2000
- Received 3 Award of Excellence Plaques from the Motorola's General Management in recognition to Outstanding Team Work Technical Achievements, 1994, 1995, 1996
- Achieved 40 Technical Excellence Awards in appreciation of technical report writing contributions in Motorola Guadalajara and ON Semiconductor Guadalajara, 1994-2001
- Received the Scientific and Technical Society Award of Motorola in Acknowledgment of Superior Technical Contribution for having conceived the first Patent issued to Motorola Guadalajara Plant in 20 years of history, 1996
- Member of the Project Evaluation Board of the AVANCE Program (Last Mile Science into Business Projects Sponsoring) by the Mexican National Science and Technology Council (CONACYT). July 2003.
- On Semiconductor Innovative Product Award (Ultra Low Capacitance Bidirectional Thyristor Surge Protection Device LC-TSPD). June 2008.
- Appointed by the Mexican Public Education Ministry (SEP) as a Member of the Jury for the Mexican National Science and Arts Awards (Design and Technology Branch) Election (Aug 2008).