

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Rubén Domínguez Maldonado

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Birth Date: 07-Dec-1978

Age: 38

Nationality: Mexican

PROFESSIONAL STUDIES

- 1998 – 2003, Physical Engineer, Faculty of Engineering, Yucatán Autonomous University, Mérida, Yucatán, México, 2-Dec-2003

Thesis: "STUDY OF THERMAL PROPERTIES IN MATERIALS BY PHOTOACOTIC SPECTROSCOPY AND PHOTOPYROELECTRIC SPECTROSCOPY"

- 2003 – 2005, Master of Science in Mechanical Engineering, Mechanical Engineering Department, Mérida Technologic Institute, Mérida, Yucatán, México, 20-Oct-2005,

Thesis: "THEORY AND EXPERIMENTATION OF THE THERMAL PROPERTIES OF A BIMATERIAL SYSTEM"

- 2006-2008, PhD in Materials Science, Materials Department, Research Center for Advanced Materials (CIMAV), Chihuahua, Chihuahua, México, July 8, 2009

Thesis: "PREPARATION AND CHARACTERIZATION OF NANOSTRUCTURED ALLOYS OF AuCu AND AuAl"

- 2011-2012 Postdoctoral Position, Applied Physic Department, Center of Research Investigation and Advanced Studies (CINVESTAV Mérida), Mérida, Yucatán, México.

Research work: Physical properties of nanostructured alloys.

PARTICIPATION IN NATIONAL AND INTERNATIONAL CONGRESS WITH ARBITRATION: 28

PUBLICATION IN EXTENSIVE IN INTERNATIONAL CONGRESS WITH ARBITRATION: 14

INTERNATIONAL PUBLICATIONS IN INDEXED JOURNALS

- Al Oliva, RD Maldonado, O. Ceh and JE Corona, HG Riveros, "Study of a bimaterial system by an improved dynamical thermal model", Surface Review and Letters SRL, Vol. 12, No. 2 (2005) 1-10 .
- R. D. Maldonado, A. I. Oliva, "Physical properties obtained from measured thermal profiles in the film / substrate bimaterial system", Surfaces Review and Letters SRL, Vol. 13, No. 5 (2006) 557-565.
- J. E. Corona, R. D. Maldonado, A. Oliva, "Vacuum oven to control the annealing process in alloyed nanolayers", Mexican Journal of Physics, Vol. 53 No.4 (2007) 318-322.
- R. D. Maldonado, A. I. Oliva, "Morphology and electrical resistivity of AuCofilaments alloys", Surfaces Review and Letters SRL, Vol 15, No.6 (2008) 881-888.
- R. D. Maldonado, A. I. Oliva, J. E. Corona, "Annealing effects on the electrical resistivity of AuAl thin films alloys", Mater. Chem. Phys., Vol.116, pp. 453-457, 2009.
- A. Oliva, R. D. Maldonado, E. A. Diaz, A. I. Montalvo, "A high absorbance material for solar collectors' applications", Materials Science and Engineering, 45 (2013) 012019.

- J. O. Novelo Segura, R. D. Maldonado, G. M. Alonzo-Medina, A. Hurtado, "Characterization of morphology and mechanical properties of Au-Cu thin films alloys by AFM and Nanoindentation", Int. J. Sci. And Adv. Technol. 10 (2014) 27-32.
- RD Maldonado, E. Huerta, JE Corona, O. Ceh, AI León-Castillo, MP Gómez-Acosta, E. Mendoza-Andrade, "Design, simulation and construction of a Savonius wind rotor for subsidized houses in Mexico", Energy Procedia, 57 (2014) 691-697.
- R. D. Maldonado, E. Huerta, J. E. Corona, O. Ceh, A. I. León, I. Henandez, "Design and construction of a solar flat collector for social housing in Mexico", Energy Procedia, 57 (2014) 2159-2166.
- T. E. Novelo, P. Amezaga-Madrid, R. D. Maldonado, A. Oliva, G. M. Alonzo-Medina, "Synthesis and Characterization in AuCu-Si nanostructures", Materials Characterization, 101 (2015) 83-89.
- D.M. Medina Carril, J.G. Carrillo, R.D. Maldonado, F. Avilés, "Finite element analysis of a solar collector plate using two plate geometries", Engineering and Research, Vol. 36 No. 3 (2016) 95-101.
- T. E. Novelo, G. M. Alonzo-Medina, P. Amézaga-Madrid, R. D. Maldonado, "Surface Morphology and Electrical Resistivity in Polycrystalline Au / Cu / Si (100) System", Journal of Nanomaterials, ID: 2079204, 2017.

PATENTS IN MEXICO

- Rubén Domínguez Maldonado, Edgar Adrián Díaz Loeza, Angel Ignacio Montalvo Montero y Andrés Iván Oliva Arias. **"Tubos colectores de geometría elíptica con recubrimiento de alta absorción para colectores solares planos"**. Expediente: MX/a/2012/000340, 5 de Enero de 2012 (Patente registrada ante el IMPI, Folio: MX/E/2012/001869).
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, **"Cámara de acondicionamiento de flujo de aire y cámara de pruebas de baja turbulencia para túneles de viento"**, Expediente: MX/a/2015/001536, 3 de Febrero de 2015 (Patente registrada ante el IMPI, Folio: MX/E/2015/008425). **SUBMITTED**
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, **"Geometría de alabe para rotores eólicos tipo Savonius helicoidal"**, Expediente: MX/a/2015/001535, 3 de Febrero de 2015 (Patente registrada ante el IMPI, Folio: MX/E/2015/008420). **SUBMITTED**
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, **"Colector plano con reflectores parabólicos de foco lineal utilizados en calentadores solares de agua"**, Expediente: MX/u/2015/000279, 29 de Mayo de 2015 (Patente registrada ante el IMPI, Folio: MX/E/2015/038767). **SUBMITTED**
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, **"Rotor eólico modular tipo Savonius helicoidal"**, Expediente: MX/a/2015/016016, 20 de Noviembre de 2015 (Patente registrada ante el IMPI, Folio: MX/E/2015/084566). **SUBMITTED**
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, **"Metodología y molde para la fabricación de aerogeneradores tipo Savonius helicoidal"**. Expediente: MX/a/2016/015869, 1 de Diciembre de 2016 (Patente registrada ante el IMPI, Folio: MX/E/2015/086930). **SUBMITTED**
- Rubén Domínguez Maldonado, Eduardo Albert Huerta Argáez, José María Diaz Basteris, **"Sistema automático de descarga de tolvas"**, Expediente: MX/u/2016/000624, 15 de Diciembre de 2016 (Modelo de Utilidad registrada ante el IMPI, Folio: MX/E/2015/091051). **SUBMITTED**

ASSOCIATIONS

- Regular Member of Materials Research Society (MRS), from 2008 to date
- Member of the Mexican Society of Sciences and Vacuum Surfaces (since 2009)
- Regular Member of the Solar Energy Association (ANES), since 2013.
- Regular member of the International Solar Energy Society (ISES) from 2013.

PROJECTS APPROVED BY CONACYT FUNDS

- Infrastructure Development and study of morphological and thermal properties of nanostructured alloys. Project funded by Conacyt in the call for Basic Science in the modality Young Investigator, Folio: 131795, Amount: \$ 1,395,643.00 pesos M.N. (April-2011 to April-2014).
- Renewable Energies and Sustainability in the South-Southeast Region of Mexico, Emerging Regional Research Groups (GIRE), Conacyt Thematic Networks. Folio: 235637, Amount: \$ 5, 000,000.00 pesos M. N. (July-December 2014).
- Consolidation of Renewable Energies and Energy Sustainability Laboratory in the South-Southeast Region of Mexico, Support for the strengthening and development of the scientific and technological infrastructure 2015, Application: 251932, Amount: \$ 4, 943, 520.00 pesos MN (June 2015- June 2016).

PROJECTS ACADEMY / COMPANY

- DM Energía Verde SA de CV, Innovation Stimulus Program 2011 (PEI2011), "Development of a High Efficiency Hybrid Ecological System for Warming Water in Social Interest Homes", Folio No. 155578. PEI APPROVED-FINALIZED.
- Mega Empack SA de CV, Innovation Stimulus Program 2013 (PEI2013), "Study of mechanical properties of virgin, recycled and post-industrial resins for polymerized resin blend for the production of high performance preforms for high-speed injection", Folio No. 199029. PEI APPROVED-FINALIZED.
- DM Energía Verde SA DE CV, Innovation Stimulus Program 2013, "Design and development of a pilot plant for the manufacture of high-efficiency solar heaters for social housing", with application No. 200317. APP APPROVED-ENDED.
- Producer of Cal Yucatan SA de CV, Innovation Stimulus Program 2015 (PEI2015), "Development of ecological, flexible and durable cement base Ca (OH) 2 for construction" with application No. 221322. PEI APPROVED-FINALIZED.
- LARC Industries SA de CV, Innovation Stimulus Program 2015, "Development of a thermal collector based on thermoplastics", with application No. 221756. PEI APPROVED-FINALIZED.
- Augusto León Castillo, Servicio y Mantenimiento SA de CV, Innovation Stimulus Program 2015 (PEI2015), "Development of a hybrid system based on wind and photovoltaic energy for public lighting" with No. 221976. PEI APPROVED-FINALIZED.
- Productora de Cal Yucatan SA de CV, Incentive Program for Innovation 2016, "Pilot plant for the process of manufacturing sustainable cementants for the construction industry" with request no. 232255. PEI APPROVED-FINALIZED.
- LARC Industries SA de CV, Incentive Program for Innovation 2016, "Development of plastic prototypes for roofs and green walls in sustainable housing in the Yucatan peninsula" with application No. 232245. PEI APPROVED-FINALIZED.
- Augusto León Castillo, Servicio y Mantenimiento SA de CV, Incentive Program for Innovation 2016, "Design for the process of manufacturing wind turbine type Savonius helicoidal for the generation of electric power" with request No. 232108. PEI APPROVED-FINALIZED.

HUMAN RESOURCES TRAINING: Bachelor: 7, Ph. D.: 3, Posdoctoral students: 1