

## **Gonzalo Gonzalez Rey**

**Professor of Applied Mechanics and Machine Elements** (40 years of experience as professor of mechanical engineering at universities of Cuba, Mexico, Spain, and United States of America).

### Work Experience

- **January 2021 to 2023: Adjunct professor of Department of Mechanical and Aerospace Engineering. College of Engineering. University of Miami.** Professor of Advanced Mechanics of Solids.
- **September 2020: Statement of Status of Eligibility (SOE)** from the Florida Department of Education covering Engineering and Technology Education (Grades 6-12), Physics (Grades 6-12) and Mathematics (Grades 6-12).
- **August 2019 to present: Adjunct professor of Department of Mechanical and Materials Engineering in the College of Engineering and Computing at Florida International University.** Professor of Dynamics course.
- **August 2015 to 2018: Professor of Mechanical Engineering. Head of Mechatronics Research Group with research on Machine Elements and Industrial Automation.** Universidad Tecnológica de Aguascalientes, Mexico. August 2015 to November 2018.
- **2018 to present: Professor of Master Degree Program of Advance Manufacture at CIATEQ** (Advanced Research and Technology Center of Queretaro).
- **2016-2018: Professor of Mechanical Engineering courses** at the Pan American University, campus Aguascalientes in Mexico.
- **2010 - 2015: Invited Professor of the Technological Institute of Higher Studies of Monterrey (Tec de Monterrey),** Aguascalientes campus.
- **1982 to July 2015. Professor of Mechanical Engineering by 32 years** in the Higher Polytechnic Institute José Antonio Echeverría (ISPJAE/Havana-Cuba), **Head of Machine Elements Division** since 1994 until 2015, **Vice-Dean of Research and Graduated Activities in Mechanical Engineering Faculty** between 1998 and 2012 at ISPJAE. **Advisor to Vice-rector for research for scientific publications.**
- **Invited Professor of Silesian University of Technology/Poland (1996), Center for the Study of Automotive Vehicles (CEDVA)/ Mexico (2000), High School of Mechanical and Electrical Engineering (ESIME) at IPN/Mexico (2007) and Tec de Monterrey/Mexico (2011 -2015).**

### Education:

- **Doctorate on Technical Science** (Mechanical Engineering field). Awarded by Higher Polytechnic Institute Jose Antonio Echeverria (At present: Technical University at Havana). PhD Dissertation Topic: Rational Synthesis of Straight Bevel Gear with Higher Load Capacity. October 1998.
- **Bachelor of Science in Mechanical Engineering** with specialization in automotive engineering. Awarded by Higher Polytechnic Institute Jose Antonio Echeverria (At present: Technical University at Havana) on July 22, 1982.

### Skills

- Mechanical Design (10+ years), Design of mechanical transmissions. ISO standardization. Metric system. Rolling bearings. Gear transmissions. Machine elements.
- Engineering project tutor. (10+ years)

### Links

- [https://scholar.google.com/citations?user=ASg\\_2dsAAAAJ&hl=es](https://scholar.google.com/citations?user=ASg_2dsAAAAJ&hl=es)
- [https://www.researchgate.net/profile/Gonzalo\\_Gonzalez\\_Rey2](https://www.researchgate.net/profile/Gonzalo_Gonzalez_Rey2)
- <https://www.youtube.com/watch?v=lac4sw71TPE> (Mock-up class in Technological University at Aguascalientes).
- <https://www.ratemyprofessors.com/ShowRatings.jsp?tid=2574271> (Rated my professors, the 2nd highest rated in Engineering at FIU).

### Awards

- **Medal of the 25th Anniversary of the Technological University of Aguascalientes (UTA).** December 2016, Aguascalientes/Mexico
- **Medal of the 50th Anniversary of the CUJAE.** December 2014. Awarded by the Higher Polytechnic Institute José

Antonio Echeverría (CUJAE) for the sustained and recognized academic work for more than 30 years. Havana/Cuba.

- **Member of the Academic Excellence Club of Tecnológico de Monterrey Campus, Aguascalientes.** July 2013, Aguascalientes/Mexico.
- **Recognition of High Level Professional.** 2007. Awarded by the National Union of Architects and Construction Engineers in Cuba.
- **National Award of the Cuban Academy of Sciences.** December 2006. Co-author of the National Award for results compiled in "Scientific Contributions to the Theory and Practice of Gear Transmissions".
- **Prize of the Minister of Higher Education of Cuba.** December 2006. Distinction for contributions to the Cuban engineering research.

#### **Mechanical Skills: Aptitude — Expert**

February 2019

Measures a candidate's ability to understand and apply mechanical concepts and processes. Full results:

[https://share.indeedassessments.com/share\\_assignment/mawdipwqarhstkw](https://share.indeedassessments.com/share_assignment/mawdipwqarhstkw)

Indeed, assessments provides skills tests that are not indicative of a license or certification, or continued development in any professional field.

#### **Remote Teach Ready (RTR) Badge issued by Florida International University (FIU).** December 2020.

This badge recognizes teachers prepared to make use of key distance learning technologies, including Zoom, how to navigate Canvas; manage assignments/assessments; write alternative assessments; communicate course content; stay connected with students; maintain a course schedule; and follow FERPA guidelines. [https://www.youracclaim.com/badges/0d7cbc40-6b7f-458e-a016-aa5f7d7d99d2/facebook?fbclid=IwAR3BT079KXAJE7NJ\\_ehQxK4PoZh54J0QJOVG5DwL\\_G3ddilDpF6624OWSZ](https://www.youracclaim.com/badges/0d7cbc40-6b7f-458e-a016-aa5f7d7d99d2/facebook?fbclid=IwAR3BT079KXAJE7NJ_ehQxK4PoZh54J0QJOVG5DwL_G3ddilDpF6624OWSZ)

#### **Engineering Journal Editor and Member of Professionals Associations.**

- American Gear Manufacturer Association (AGMA) Academic member since 1992 to present.
- Director and Scientific Editor of Revista Cubana de Ingeniería (Journal of Cuban Engineering/ISSN 2223-1781) and Ingeniería Mecánica (Mechanical Engineering Journal/ ISSN 1029-516X).
- Director of Machine Elements Cuban Committee for Standardization since 2000 to 2015.
- Member of the ISO Technical Committee 60 since 1992 to 2015 and participating as expert in the Working Groups 6 and 13 (load capacity of cylindrical and bevel gears respectively).
- American Society of Mechanical Engineers (ASME) member and ASME Cuba Correspondent since 1992 to 2012.

#### **Publications (Since 2018)**

- **Evaluation of plain bearing performance according to standard ISO 7902:2020 (In Spanish)** May 2022. <https://ingenieriamecanica.cujae.edu.cu/index.php/revistaim/article/view/692/1188>
- **Geometric synthesis of spur gears with high pitting resistance (In Spanish)** <https://ingenieriamecanica.cujae.edu.cu/index.php/revistaim/article/view/650/1151> May 2021.
- **Conceptual design in integrative projects in courses for higher university technicians in mechatronics (In Spanish).** <https://rrp.cujae.edu.cu/index.php/rrp/article/view/253/281> August 2021
- **The teaching laboratory as training space in the practice of Gear engineering (In Spanish).** January 2021. <https://rrp.cujae.edu.cu/index.php/rrp/article/view/234/265>
- **Tensile test under ISO 527-2 in test pieces made with PLA material and additive manufacturing techniques (In Spanish).** [http://www.tecsuperiorslp.edu.mx/images/Comunicacion/Revista\\_Capital\\_Intelectual\\_/Capital%20Intelectual%20no.13.pdf](http://www.tecsuperiorslp.edu.mx/images/Comunicacion/Revista_Capital_Intelectual_/Capital%20Intelectual%20no.13.pdf) January 2019.
- **A procedure for estimating of minimum effective case depth of carburized teeth cylindrical gears (In Spanish).** <http://scielo.sld.cu/pdf/im/v21n1/im02118.pdf>. April 2018.

#### **Author of books:**

- **Cylindrical gears engineering by ISO standards (In Spanish).** 133pp. Publishing: OmniScriptum GMBH & Co. KG. Saarbrücken, Germany. 2016. ISBN 978–3-8417-6090-6.
- **Basic engineering of rolling bearings (In Spanish).** 73pp. Publishing: Lap Lambert Academia Publishing GMBH &

Co. KG. Saarbrücken, Germany. 2012. ISBN 978-3-8473-6773-

- **Fundamentals for calculation of mechanical transmission components (In Spanish).** 50pp. Lap Lambert Academia Publishing GMBH & Co. KG. Saarbrücken, Alemania. 2012. ISBN 978-3-8484-7088-4.

#### **Tutor of PhD and Master's Thesis:**

- **Rational geometry of spur gear with resistance to pitting.** Author: Dr. **Christoper Edgar Falcón Anaya**. Degree awarded by the Advanced Technology Center of Aguascalientes / Mexico. August / 2021.
- **Design and simulation of interchangeable gripper between Robot Fanuc LR mate 200iD and Motoman MH5F.** Author: MsC. Eng. Christian Irving E. Rodríguez González. Degree awarded by the Advanced Technology Center of Aguascalientes / Mexico. November / 2017.
- **Design and model of cutter router for robotic arm.** Author: MsC. Eng. Gerardo Brianza Gordillo. Degree awarded by the Advanced Technology Center of Aguascalientes / Mexico. August / 2017.
- **Evaluation of rim thickness on cylindrical gears fracture resistance.** Author: Eng. Osney Gerardo Pérez Acosta. Degree awarded at Technological University of Havana / Cuba. December 2013.
- **Proposal of Cuban standards for dimensions and selection of roller chains.** Author: MsC. Eng. Tania Ortiz Cárdenas. Degree awarded at Technological University of Havana / Cuba. Sep /2001.

#### **Additional Information**

##### ***Undergraduate Engineering Courses as professor:***

- Advanced Mechanics of Solids (MAE 507)
- Statics (EGN 331I)
- Dynamics (EGN 332I)
- Mechanical design I (EML 3500)
- Strength of materials,
- Machine elements,
- Machine design,
- Mechanics of solids,
- Machines and mechanisms theory,
- Mechanical design projects,
- Dimensional metrology,
- Technical drawing
- Engineering of materials,
- Mechanical systems,
- Dynamics of vehicles
- Manufacturing process
- Engineering projects (Mechanical and Mechatronic)

##### ***Graduated Engineering Courses as professor:***

- Advanced Mechanics of Solids (MAE 607)
- Advanced manufacturing processes (Non-traditional cutting and machining processes, coatings, powder metallurgy, processing of ceramic and composite materials of polymeric matrix).
- Design of mechanical transmissions based on ISO Standards,
- Rolling bearing engineering according to ISO Standard,
- Fundamentals and design of cylindrical gears by ISO Standard 6336,
- Bevel gears transmission by ISO Standard 10300,
- Spur and helical gears: Design and performance,
- Mechanical components (Calculation by ISO standards of gears, belt and chain transmissions, shafts, and bearings)