



[Research Personnel of the Gear Research Lab](#)

GRL PRINCIPAL INVESTIGATOR (PI)



Alfonso FUENTES-AZNAR

Associate Professor

Department of Mechanical Engineering

Email: afeme@rit.edu

Phone: +1 (585) 475-2917

Office: ENG-2541

Dr. Alfonso Fuentes joined the Department of Mechanical Engineering of the Rochester Institute of Technology (RIT) as an Associate Professor in August of 2015. Prior to joining RIT, Dr. Fuentes was a Full Professor of Mechanical Engineering at the Polytechnic University of Cartagena (UPCT), Spain, and Head of the Department of Mechanical Engineering.

Dr. Fuentes received his M.S. in Mechanical Engineering in 1993 from the University of Murcia, Spain, in 1993, and his Ph.D. in Mechanical Engineering in 1996 from the National University of Distance Education (UNED) in Madrid, Spain. Dr. Fuentes has been a visiting scholar at the Gear Research Center of the University of Illinois at Chicago (UIC) from June 1999 to May 2001 where he was trained by Professor Faydor L. Litvin in the application of the modern theory of gearing to the computerized design, simulation of meshing and contact and finite element analysis of gear drives.

Dr. Fuentes' research focuses on the development of improved gear transmissions applied in helicopters, marine and automotive industry, development of enhanced design technologies for all types of gear drives, and development of IGD – Integrated Gear Design – computer program as the ultimate tool for advanced gear design, analysis, and simulation of any type of gear drive. He maintains an active collaboration with the Enhanced Gear Drives Research Group (GITAE), which he established in 2002 at the Polytechnic University of Cartagena. Dr. Fuentes has authored more than a hundred publications including journal articles, conference papers, and technical reports. He is the subject editor for gears and cams of the Journal Mechanism and Machine Theory.



GRL INTERNATIONAL COLLABORATOR



Ignacio GONZALEZ-PEREZ

Full Professor

Polytechnic University of Cartagena (UPCT)

Department of Mechanical Engineering

Cartagena, Spain

Email: ignacio.gonzalez@upct.es

Dr. Gonzalez-Perez received his M.S. in Mechanical Engineering in 1999 from the University of Murcia (UM), Spain, and his PhD in Mechanical Engineering in 2003 from the Polytechnic University of Cartagena (UPCT), Spain. He was promoted to Associate Professor at UPCT in the year 2009 and to Full Professor in the year 2020. He has been a visiting scholar at the Gear Research Center of the University of Illinois at Chicago (UIC) from October 2001 to October 2003, being trained by Professor Faydor L. Litvin in the design and analysis of gear drives through the application of the modern theory of gearing. He has been a visiting scientist at the Gear Research Department of Yamaha Motor Company in Japan from June 2005 to November 2005, collaborating with Mr. Kenichi Hayasaka in the testing of new designs of helical gear drives with localized bearing contact. He has been a visiting scholar at the Gear Research Laboratory of the Rochester Institute of Technology (RIT) from February 2017 to June 2017, collaborating with Professor Alfonso Fuentes in the implementation of efficient finite element models of gear drives. He is the Principal Investigator of the Enhanced Gear Drives Research Group and Head of the Department of Mechanical Engineering at UPCT since the year 2015. He keeps an active collaboration with Dr. Fuentes in the development of IGD – Integrated Gear Design – computer program. He has authored more than eighty publications in the areas of design, simulation of meshing, and contact analysis of gear drives, among them 30 are peer-reviewed articles.

GRL VISITING SCHOLARS

CURRENT VISITING SCHOLARS/STUDENTS:



PAST VISITING SCHOLARS:

- **Mr. Siyuan Liu**, [Oct 2019 - Jan 2021], Ph.D. Student, The State Key Laboratory of Mechanical Transmissions, Chongqing University, Chongqing, China.
- **Dr. Jinzhan Su** [Nov 2018 - Nov 2019], Chang'an University, Xi'an, Shaanxi Province, China.
- **Dr. Zhen Chen** [Nov 2018 - Nov 2019], China University of Geosciences (Wuhan), Hubei, China.
- **Dr. Hui GUO** [Dec 2017 - Dec 2018], Northwestern Polytechnical University, Xi'an, China.
- **Dr. Chiu-Fan HSIEH** [Aug 2017 - July 2018], Department of Mechanical and Computer-Aided Engineering, National Formosa University, Taiwan.
- **Dr. Ignacio GONZALEZ-PEREZ** [Feb 2017 - June 2017], Department of Mechanical Engineering, Polytechnic University of Cartagena, Spain.

GRL GRADUATE/UNDERGRADUATE STUDENTS

CURRENT GRADUATE STUDENTS:

PAST GRADUATE STUDENTS:

- **Eloy YAGUE-MARTINEZ**, PhD in Engineering, Rochester Institute of Technology. Thesis: "Computational Design, Simulation of Meshing, and Stress Analysis of Strain Wave Gear Drives", 2021.
- **Scott EISELE**, BS/MS Dual Degree, Department of Mechanical Engineering, Rochester Institute of Technology. Thesis: "The Influence of Tooth Surface Modifications on the Sensitivity of Involute Cylindrical Gears to Manufacturing Errors", 2018.