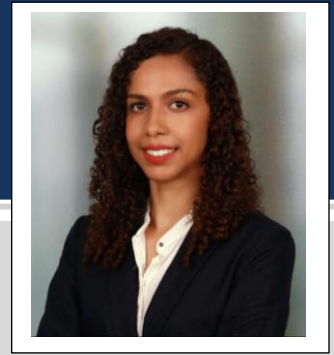


Marilia Gabriela Justino Vaz



ACADEMIC EDUCATION

- 04/2020 - present** **Mechanical Engineering - Doctoral degree – City University of London, United Kingdom**
Researching Dual-fuel engine design concepts through effective CFD simulation tools in EDEM Project. Sponsored by Marie Skłodowska-Curie Actions
- 03/2016 - 06/2018** **Mechanical Engineering - Master's degree - Federal University of Minas Gerais (UFMG), Brazil**
Master thesis: Validation of reduced chemical kinetic mechanisms for gasoline-ethanol blends in an internal combustion engine (written in Portuguese).
- 03/2009 - 12/2015** **Metallurgical Engineering - Bachelor's degree - Federal University of Minas Gerais (UFMG), Brazil**
Bachelor thesis: Numerical analysis of the piston crown geometry influence on the Tumble and Squish in a single cylinder engine with experimental validation (written in Portuguese).
- 03/2009 - 12/2015** **Materials Engineering – Complementary formation - Federal University of Minas Gerais (UFMG), Brazil**
Final-year project: Studies of new processes of manufacturing refractories blocks for the glass industry (written in French).

ACADEMIC EXCHANGE PROGRAMS

- 09/2014 - 07/2015** **École Nationale Supérieure de Chimie de Lille (ENSCL), Lille, France**
- Emphasis on "Optimization and reliability of materials"
 - Sponsored by the Brasil France Ingénieur Technologie Program
- 09/2012 - 07/2013** **Universidade do Porto, Porto, Portugal**
- Studies in Materials Engineering
 - Sponsored by the Science without Borders Program

PROFESSIONAL EXPERIENCE

- 04/2020 - present** **Woodward L'Orange – Research Engineer - Germany**
- Design of dual-fuel engines concepts with emphasis on injector design, timing, thermal and emission performance.
 - Implementation of Sub Grid Scale models (for spray mixing, ignition and combustion) in LES for simulating dual-fuel internal combustion engines.
- 04/2019 - 03/2020** **Labor für Kolbenmaschinen, Hochschule Heilbronn – Research Engineer - Germany**
- Responsible for numerical simulations with GT-suite in projects such as the development of variable valve train actuation and the variable compression ratio (VCR) connecting rod.
 - Evaluation of thermodynamic testing of VCR engines on the test bench and in demo vehicles.
- 09/2018 - 12/2018** **Velocimetry Laboratory (UFMG) - Research - Brazil**
- Characterization of engine fuel injector and analyze of the spray formation using optical diagnostics techniques.
- 08/2016 - 07/2018** **Fiat Chrysler Automobiles – Technological Residence Program for Engineers – Brazil**
- Responsible for 1D and 3D numerical simulation with GT-Power and Converge software for combustion analysis in internal combustion engines running on blends of gasoline and ethanol for reduced kinetic chemical mechanisms assessment.
- 02/2015 - 08/2015** **Saint Gobain CREE – Engineering R&D internship – France**
- Responsible for the project which aimed to study the manufacturing processes for refractory blocks in order to solve current problems of cold consolidation for two commercial products.
 - Understanding the mechanisms of different binding agents and their characterizations in these refractories.

SOCIAL MEDIA




www.linkedin.com/in/justinovazmariliagabriela/



@Gab_Vaz_


LANGUAGES


Native Language:

 Portuguese

Others language:

 French – B2

 English – B2

 German – A2 (B1 in progress)

SOFTWARE

- ✓ Microsoft Office pack
- ✓ Solidworks
- ✓ Python
- ✓ Matlab
- ✓ GT -Power
- ✓ GT-Suite
- ✓ STAR CCM+
- ✓ STAR-CD
- ✓ CONVERGE
- ✓ Ansys

- 08/2013 - 06/2014** **Mobility Technology Center (CTM-UFGM) - Internship – Brazil**
- 3D numerical simulations of an ethanol engine concept with Star CCM+ and Star CD software. Characterization of air flow and combustion with experimental validation.
 - Project in partnership with the automaker Fiat Powertrain.
- 08/2011 - 08/2012** **Mineral Processing Laboratory (UFGM) - Internship – Brazil**
- Development of routes for the treatment of high phosphorus content iron minerals, partnership with the steel company Usiminas.
 - Technologies used: grain size analysis, classification, primary milling, secondary milling, gravity and magnetic separation, filtration, and flotation.
- 01/2010 - 08/2011** **Corrosion Laboratory (UFGM) - Research Fellowship - Brazil**
- Evaluation of the effectiveness of certain corrosion-resistant coatings applied for the protection of electrical cables tubes as an alternative for cathode protection.
 - Study of environmental impacts of amorphous alloys used in the electricity distribution transformers core.
- 06/2008 - 05/2009** **Town Hall of Sete Lagoas - Administrative Assistant - Brazil**
- Responsible for the analysis of cash income of Sete Lagoas town.
 - Form of admission: Public tender

PUBLICATIONS

WITTEK, K., GEIGER, F., **JUSTINO VAZ, M. G.** "Characterization of the system behaviour of a variable compression ratio (VCR) connecting rod with eccentrically piston pin suspension and hydraulic moment support". Energy Conversion and Management (In revision)

BRAGA, R., **VAZ, M.**, de MORAIS MARTINS, C., HINDI, G. and HUEBNER, R . "3D Numerical Characterization of a Multi-Holes Injector in a Quiescent Vessel and Its Application in a Single-Cylinder Research Engine Using Ethanol". SAE Technical Paper 2017-36-0360, 2017, <https://doi.org/10.4271/2017-36-0360>.

SCHOR, R. R., MOLINA VALLE, R., **JUSTINO VAZ, M.G.** et al. "Numerical Comparison of an Ethanol Spray Using Open FOAM and Star CCM+". XXXVIII Iberian-Latin American Congress on Computational Methods in Engineering, 2017, DOI: 10.20906/CPS/CILAMCE2017-1242.

AMORIM, F.G.L., RIBEIRO, J.H.M., **JUSTINO VAZ, M.G.**, and MOLINA VALLE, R. "Sensitivity Analysis of the Air Flow Inside a Single Cylinder Engine for Different Turbulence Models Using CFD". Advanced Materials Research, v. 1016, p. 624-629, 2014. DOI : 10.4028/www.scientific.net/AMR.1016.624.

JUSTINO VAZ, M.G., AMORIM, F.G.L., RIBEIRO, J.H.M., HUEBNER, R. and MOLINA VALLE, R. "Numerical Analysis of the Piston Crown Geometry Influence on the Tumble and Squish in a Single Cylinder Engine". SAE Technical Paper 2014-36-0300, 2014, <https://doi.org/10.4271/2014-36-0300>.

RIBEIRO, J.H.M., AMORIM, F.G.L., **JUSTINO VAZ, M.G.**, at all. "Estudo do escoamento de ar em motor monocilindrico com análise de diferentes modelos de turbulência". VIII Congresso Nacional de Engenharia Mecânica, Uberlândia- MG, 2014.

LEADERSHIP/EXTRACURRICULAR

- 03/2016 - 11/2016** Volunteering in Events: Organization of the First International Congress of Engines, Fuels and Combustion.
- 10/2015 - 12/2015** Tutoring work at Math Science Institute in the project: "Information Technologies in the Math Sciences and Engineering"
- 03/2013 - 10/2013** Volunteering in Events : Organization of the XXIV Mining and Metallurgical Symposium
- 03/2011 - 10/2011** Volunteering in Events : Organization of the XXII Mining and Metallurgical Symposium

HOBBIES

- ❖ Dancing
- ❖ Yoga
- ❖ Archery
- ❖ Playing Ukulele