

Curriculum vitae di Giorgio Donzella

- 1984: Master degree in Mechanical Engineering, Politecnico di Milano.
- 1984: Post-graduate research collaborator in the Experimental Stress Analysis Laboratory of Politecnico di Milano
- 1985: Teaching collaborator in Machine Design at Università degli Studi di Brescia
- 1986-1998: Researcher in Machine Design at Università degli Studi di Brescia
- 1998-2003: Associated Professor in Machine Design at Università degli Studi di Brescia
- 2004-today: Full Professor in Machine Design at Università degli Studi di Brescia

Main academic/institutional activity at University of Brescia (Department of Mechanical and Industrial Engineering)

- Teacher of several courses dealing with the structural mechanical engineering (Machine Design, Fundamentals of Fatigue Design, Mechanics of Materials, Experimental Stress Analysis and Non-destructive Testing)
- Responsible for the Numerical Structural Analysis Laboratory, since 1995 to 2013
- Responsible for the Experimental Stress Analysis Laboratory, since 2000 to today
- Responsible for bachelor course in Mechanical and Materials Engineering and for the master course in Mechanical Engineering, since 2013 to today
- President of Council of Courses in Industrial Engineering, since 2017 to 2019.

Scientific activity

- Main research topics:
 - Rolling contact fatigue: RCF-wear competition, inclusion effect, ratchetting, failure assessment
 - Fatigue in polymers: life prediction, failure analysis, filler effect on the damage evolution and failure modality
 - Residual stress measurements and numerical prediction
 - Numerical simulation of biological systems and implants
 - Damage of polymers subjected to radiation effects
 - Fatigue damage measurements and prediction in steel ropes
- Author of about 140 articles published on national and international journals and conference proceedings
- Scientific responsible of Research Unit in national research projects (PRIN, MPI 40%):
 - Mechanisms of crack propagation under rolling contact fatigue
 - Predictive criteria of damage phenomena in the wheel-rail contact
 - Fatigue and rolling contact fatigue damage of composite with polymeric matrix
 - Structural reliability in the mechanical constructions
- Scientific responsible of numerous research projects supported by Università degli Studi di Brescia (MPI60%, PRD)
- Member of the Doctoral Committee of the PhD “Mechanical and Industrial Engineering” at University of Brescia up to 2017
- Member of the Doctoral Committee of the international PhD “Technology for Health Protection” at University of Brescia, up to 2014
- Tutor of PhD and responsible of several research contracts in the field of rolling contact fatigue and fatigue of polymeric materials
- Referee of international journals: International Journal of Fatigue, Engineering Fracture Mechanics, Fatigue and Fracture of Engineering Materials and Structures, Journal of Materials and Product Technology, Journal of Magnetism and Magnetic Materials, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, Proceedings of the Institution of Mechanical Engineers Part F: Journal of Rail and Rapid Transit, Proceedings of the

Institution of Mechanical Engineers Part H: Journal of Engineering in Medicine, ASME Journal of Tribology, Tribology International, International Journal of Mechanical Sciences.

- Organiser or Co-organiser of international and national conferences: Surface Treatment 95 (Milano 1995), Rolling Contact Fatigue (Brescia 2002), 4th Int. Conf. on Barkhausen Noise and Micromagnetic Testing (Brescia 2003), 14° Italian ABAQUS Users' Meeting (Brescia 2003), Structural Integrity of Railway Wheels and Wheel-Rail Interface (Brescia 2006), XVIII Congresso AIMETA (Brescia 2007), Giornata di studio sulla Biomeccanica (Brescia, 2007), IUTAM SYMPOSIUM: Fracture Phenomena in Nature and Technology (Brescia, 2012).
- Scientific awards: Alfred Rosling Bennett Premium/S Lake Award 1998, attributed by "The Institution of Mechanical Engineers" for the paper: The effect of of block braking on the residual stress state of a solid railway wheel.
- Member of AIAS (Italian Association for Stress Analysis)
- Member of IGF (Italian Group of Fracture)
- Member of ESIS Technical Committee 24 (Integrity of Railway Structures)

Technology transfer activity

- Scientific responsible of numerous research projects supported by private funds (the most significant in the following):
 - LUCCHINI CRS (Damage problems in the wheel-rail contact)
 - LUCCHINI CRS (Design of innovative railway wheels)
 - LUCCHINI CRS (Structural optimisation of railway axle boxes)
 - ANSALDO RICERCHE (Monitoring of rolling contact fatigue phenomena in bearings)
 - SIG-SIMONAZZI (Design of ultra high pressure vessels and seals)
 - ORLANDI RIMORCHI (Experimental stress analysis and structural optimisation of draft fittings)
 - OMB (Experimental stress analysis and structural optimisation of refuse collecting vehicles)
 - CFGOMMA (Characterisation of vibration dampers)
 - ROVETTA PRESSE (Experimental and numerical stress analysis of mechanical presses)
 - GKN-FAD (Experimental stress analysis and structural optimisation of tire rims for industrial vehicles)
 - VEAFIN (Development of numerical models for the assessment of structural effects due to surgery operations on the mitral valve)
 - SIDEL (Experimental investigation on rolling contact strength of rollers made of polymeric materials)
 - ATP (Structural characterisation of polymeric materials)
 - TENARIS DALMINE (Influence of inclusion content on rolling contact fatigue of gear steels)
 - EVALVE (Numerical analysis of the structural behavior of mitral valve under edge-to-edge repair by means of percutaneous micro-clip.
 - TIMKEN (Strain measurements on rolling bearings)
 - SMILAB (Experimental characterization and modelling of polyethylene terephthalate preform for injection stretch blow moulding)
 - SAFAS (Strain measurements on nuclear plant valves during the hydraulic test)
 - CROMODORA WHEELS (Thermo-mechanical simulation of wheels production process)
 - CROMODORA WHEELS (Multi-axial fatigue analysis and residual stress measurements on wheels in Al Alloy)
 - ALMAG (Analisi sperimentale delle deformazioni su colonne di presse ad iniezione in esercizio)
 - A2A (Analisi sperimentale delle deformazioni termo-tensionali su serbatoi di accumulo calore)
- Member of promoting committee and partner of the University of Brescia SPIN OFF: ITL (Italian Technology Lab), since 2013 up to 2024