



Researcher at the Mechanical Engineering Department at Engineering Faculty of Brescia University, since 13th October 1986, confirmed since 28th October 1989.

Associated Professor in the ING/IND-16 scientific sector, namely: "Technologies and manufacturing systems" at the Mechanical Engineering Department at Engineering Faculty of Brescia University, since 1st March 2001. Confirmed as Associate Professor since 1st March 2004. Transferred at the Design and Technology Department at Engineering Faculty of Bergamo University. Full Professor at the same Department since 1st October 2006, confirmed since October 2009.

He was Dean of the School of Engineering of the University of Bergamo from January 2015 to June 2018.

He was President of the Quality Assurance Board of the University of Bergamo from January 2019 to November 2021.

He is member of the CESC - Centro sulle dinamiche economiche, sociali e della cooperazione dell'Università degli Studi di Bergamo from January 2022.

Teaching activities were carried out at Brescia University and Bergamo University, and at the Engineering Faculty of Lecco and Bovisa of the Polytechnic of Milan. The main courses were: Mechanical Technologies, Machine Tools, Quality Industrial Management I and II, Mechanical Technologies II (CNC machines and non-conventional machining), Manufacturing Technologies and Machines. He held lessons in "Industrial Maintenance Management", "Technologies and Processes of the Textile Supply Chain", "Management of Hospitals", "Cleaning Management" e "Smart Factory Management" Masters at Bergamo University and "Scholastic Managership" at several Universities.

The research fields of interest are:

- plastic deformation processes of metals: deep drawing, stamping, extrusion, ring test, tube rolling and drawing;
- innovative sheet and tube metal processes (incremental forming and hydroforming) for which he has designed and developed various experimental and laboratory equipment;
- preliminary formability studies in incremental forming of high strength materials;
- development of optimization methods of plastic deformation operations and study of limit formability, damage and welding criteria; development of corresponding analytical and numerical models;
- optimization (in a stochastic environment) of cutting operations: turning, milling, tool reliability, optimal cutting speed determination in stochastic environment;
- study of the behavior of the tool (mechanisms and growth of wear) and of the behavior of the workpiece (distribution of residual stresses, surface finish) as the lubrication conditions and working parameters vary by means of experimental tests and development of 2D and 3D simulation models;
- study of the causes of tool failure with implementation of on-line (vibrations and forces) and off-line control systems of the tool status (neural networks) and optimization of the use of flexible machining systems and cells, and of generic production systems with particular regard to the tool resource;
- studies of micro-EDM machining on metallic and ceramic materials;
- analysis of Friction Stir Welding operations on butt joint and overlapped sheets and between non-flat components;
- optimization in the use of flexible working cells and systems with particular attention to the tool resource;
- study of processing with additive technologies;
- analysis of the energy aspects inherent to mechanical processing.

The studies were conducted through experimental methods and the development of analytical and simulative models of the processes.

Many collaborations and joint researches have been carried out with manufacturing companies in the fields of optimization and production design by adopting simulation and experimental approaches. Collaborations were also conducted with research centers in the USA and Germany and with Italian research centers and Universities with particular interest in plastic deformation processes and friction definition.

He is member of the Italian Association of Manufacturing Technologies (AITeM) and is a member of the Board of Directors since January 2022.

He participated and was responsible for research projects funded by MIUR, MISE and CNR.

He is the author and co-author of more than 140 papers at international conferences and over 70 papers on international scientific journals. He edited some parts of 6 books.

He is referee for many international Journals in the research sectors.