

Antonio Fiorentino, PhD

Associate Professor

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Academic Activities

Associate Professor at the Dept. Of Mechanical and Industrial Engineering of University of Brescia in the field ING-IND/16 Technologies and Manufacturing Systems from 2017.

PhD in Technologies and Energetic Systems for Mechanical Industry in 2010.

Co-author of more than 50 scientific publications on International Journals and Conference proceedings. Referee for many International Journals.

Scientific Activities

Research activities are focused on Technologies and Manufacturing Systems topics, in particular:

- *Additive Manufacturing and Biomedical devices.*
Scaffolds manufacturing and testing for Tissue Engineering applications.
Market analyses, design, manufacturing and testing of custom-made prosthetic devices obtained from anatomical and CT scans of the patient: titanium implants for cranial and maxilla-facial reconstruction, silicone tracheal stents, hip joints, aesthetic silicon prosthesis.
- *Forming processes.*
Studies on feasibility, FEM and optimization of stamping, sheet and tube forming processes. In particular, Near Net Shape processes and Incremental Sheet Forming and Hydroforming.
- *Cost modelling.*
Development of models for manufacturing cost estimation through the use of data analysis and multivariate regression techniques.
- *Data Analysis.*
Statistical methods for data analysis and development of numerical models for the study, monitoring and control of the processes: ANOVA, DOE, Response Surface.
- *Basic research.*
Friction. Development of experimental tests and numerical methods for friction coefficient estimation in Tube Hydroforming and cold Sheet Forming process.
Incremental Sheet Forming. Development of criteria for sheet rupture; development of methods for the reduction of the geometrical error and the enhancement of the precision of the part.

Collaborations with Italian and foreign Countries Universities and Research Centres in the following research projects:

- 2018-20 PRD 2018 Department research project – *Principal Investigator – RoboDent – Prototype for Robot-Assisted Dental Surgery.*
Duration: 24 mesi. Budget 18.500 €
- 2016-18 Call Health & Wealth – Università degli Studi di Brescia
3DP-4HW – Three Dimensional Printing for Health & Wealth.
Duration: 36 months. Budget 180.000 €
- 2016-18 EULO Foundation
PRINT BIO BASE – Development of an efficient, safe ad smart method for the reconstruction of complex skull base defects through Additive Manufacturing.
Duration: 18 months. Budget 88.000 €
- 2011-14 PRD 2010 - Department research project
BIO@BeSt – Experimental Characterization of the mechanical behaviour of biological tissues and biomaterials.
Duration: 36 months. Budget 15.000 €
- 2011-13 Regione Lombardia – CUP D81J10000220005
REMS – Research on micromachining
Duration: 24 months. Budget 250.000 €
- 2011-13 Programma Operativo Nazionale Ricerca e Competitività
TITAFORM – Hot forming of Titanium alloys for aeronautics.
Duration: 18 months. Budget 135.000 €
- 2010-13 Industria 2015 – Grant 00052MI01
MICHELANGELO – Cognitive systems for the increment of the automation, auto-diagnosis, precision and functional integration of cutting machines.
Duration: 36 months. Budget 728.000 €
- 2010-14 FP7-PEOPLE-2009-IRSES-IREBID – Grant 247476
IREBID – International Research Exchange for BIomedical Device design and prototyping.
Duration: 48 months. Budget: 219.600 €
- 2009-11 PRIN 2008
DAMEN – Formability and Failure in high temperature metal sheet forming; new models and test procedures.
Duration: 24 months. Budget 55.000 €
- 2006-08 PRIN 2005
S.M.A.R.T. – High temperature processes for Al and Mg alloys sheet forming: new tests and models for friction estimation.
Duration: 24 months – Budget: 31.327 €
- 2005-06 PIA
LAMIER – Study and optimization of incremental sheet forming ad hemming processes.
Duration: 24 months – Budget: 50.000 €

Industrial research

Applied research activities are held in collaboration with industrial realities from different manufacturing sectors: prototyping, die manufacturing, cutting, forming.

Teaching Activities – Lessons

Teaching activities are held at the Dept. of Mechanical and Industrial Engineering of University of Brescia.

AA 2012/13 – today	<i>DOE (Design of experiments) – 5 CFU</i> English course for PhD students of the University of Brescia.
AA 2009/10 – today.	<i>Mechanical Technologies – 9 CFU</i> Bachelor degree in Management Engineering.
AA 2011/12 – today.	<i>Production Technologies for Biomechanics – 3 CFU</i> Master degree in Biomechanics.
AA 2011-12	<i>The Biomedical Manufacturing Summer School, 13-22 June, Brescia (IT).</i> The summer school was organized in collaboration with the faculty of Medicine. Teaching and organizing activities.
AA 2008/09	<i>Mechanical Technologies A – 5 CFU</i> Bachelor degree in Management Engineering.
AA 2007/08 –	<i>Technology and Design for industrial production – 5 CFU</i>
AA 2009/10	Bachelor degree in Industrial Design.