Ferdinando Auricchio
Curriculum Vitae
(Last Update: February 2017)

Born: June 1st, 1965, in Napoli (Italy)
Address: Department of Civil Engineering and Architecture (DICAr)
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SCIENTIFIC PRODUCTION
- **200 publications on referred International Journals**
- **5 book chapters**
- **4 patents**
- **H-Index**: **35** according to **ISI Web of Knowledge**; **41** according to **Scopus**
- **Citations: 4163** according to **ISI Web of Knowledge**; **5032** according to **Scopus**
- **Citations excluding self-citations: 3746** according to **ISI Web of Knowledge**; **4111** according to **Scopus**

RESEARCHER UNIQUE IDENTIFIERS
- **ResearcherID:** B-9405-2009
- **ORCID:** https://orcid.org/0000-0002-3735-2400

TOP 5 MOST CITED PAPERS:
- F. Auricchio, R.L. Taylor, J. Lubliner. "Shape-memory alloys: macro-modelling and numerical simulations of the superelastic behavior", Computer Methods in Applied Mechanics and Engineering, 146 (3-4): 281-312 (1997). **Citations: ISI 270, Scopus 298**
- F. Auricchio, R.L. Taylor. "Shape-memory alloys: modelling and numerical simulations of the finite-strain superelastic behavior", Computer Methods in Applied Mechanics and Engineering, 143 (1-2): 175-194 (1997). **Citations: ISI 189, Scopus 212**
- F. Migliavacca, L. Petrini, M. Colombo, F. Auricchio, R. Pietrabissa. "Mechanical behavior of coronary stents investigated through the finite element method", Journal of Biomechanics, 35 (6): 803-811 (2002). **Citations: ISI 152, Scopus 203**
- F. Auricchio, L. Petrini. "A three-dimensional model describing stress-temperature induced solid phase transformations: solution algorithm and boundary value problems", International Journal for Numerical Methods in Engineering, 61 (1): 807-836 (2004). **Citations: ISI 135, Scopus 138**
- F. Auricchio, E. Sacco. "A one-dimensional model for superelastic shape-memory alloys with different elastic properties between austenite and martensite", International Journal of Nonlinear Mechanics, 32 (6): 1101-1114 (1997). **Citations: ISI 125, Scopus 138**

CURRENT ACADEMIC POSITION:
Since 2001   **Full Professor** of Solids and Structural Mechanics, Department of Civil Engineering and Architecture (previously Department of Structural Mechanics), University of Pavia, Italy

Since 2001   **Research Associate** at IMATI-CNR (Institute for Applied Mathematics and Information Technologies of the National Research Council), Pavia, Italy

EDUCATION:
1995   **Doctor of Philosophy** (Ph.D.), Department of Civil Engineering, University of California at Berkeley, USA
1991   **Master of Science** (M.S.), Department of Civil Engineering, University of California at Berkeley, USA
1989   **Bachelor degree** in Civil Engineering with laude, University of Napoli, Italy

PROFESSIONAL COMMITTEES AND ACTIVITIES (SELECTED):
Since 2015   **Proponent and coordinator** of one of the five strategic thematic groups of the University of Pavia on "**3D@UniPV**: Virtual Modeling and Additive Manufacturing (3D printing) for Advanced Materials" (http://www.unipv.it/3d)
Since 2015   **Director** of the "**Computational Mechanics and Advanced Materials**" joint Center, between University of Pavia and University of Napoli Federico II
2015-2017   **Member** of the **Committee** for the **Evaluation of the Italian University and Research System (**GEV 8.b) in Civil Engineering (VQR 2011-2014)
2015   **Member** of the **"Additive Manufacturing"** Thematic Group **Steering Committee** within the Lombardy Association for Smart Industry (AFIL)
Since 2014   **Member** of the **ECCOMAS Industry Interest Group** (IIG) with the Industrial Liaison Committee (ILC)
2014-2017   **Coordinator** of the **Ph.D. Program in "Civil Engineering and Architecture"** (University of Pavia)
Since 2013   **Vice-President of ECCOMAS** (European Community of Computational Methods in Applied Sciences)
Since 2013   **Member** of the **Advisory Committee on Technical Standards for Constructions** for CNR (National Italian Research Council)
2013-2016   **Member** of the **Academic Senate** (University of Pavia)
Since 2012   **Department Chair** (Department of Civil Engineering and Architecture)

ACTIVE RESEARCH GRANTS:
2016-2019   "Pancreatic ductal adenocarcinoma (PDAC): development of a new communication platform between radiologists, surgeons and pathologists based on the 3D virtual and physical reconstruction of the tumor mass and the pancreas", funded by **Italian Department of Health**, unit leader
2016-2018   "New Materials and Technologies for Stereo lithography 3D printing", funded by **Regione Lombardia & INSTM**, project leader
2015-2018   "A multidisciplinary investigation for the improvement of aortic endografting: from biomedical engineering concepts to clinical implementation", funded by **Italian Department of Health**, unit leader
2015-2018   "3D@UniPV: Virtual Modeling and Additive Manufacturing (3D printing) for Advanced Materials", **University of Pavia** (no budget)

PAST RESEARCH GRANTS:
2014-2016   "iCardioCloud. Bringing cardiovascular virtual reality to clinical bedside practice through cloud platform: implementation of a US excellence paradigm into Lombardia SSR", funded by **Regione Lombardia and Fondazione Cariplo**, project leader
2016   "Fab@Hospital for bone plate fabrication and patient anatomy reconstruction using rapid prototyping technologies", funded by **CNR** (**National Research Council**), unit leader
2013-2016   "Advanced mechanical modeling of new materials and technologies for the solution of 2020 European challenges", funded by **MIUR (Italian Department of University Research)**, project leader

2014	"Fab@Hospital. Hospital Factory for Manufacturing Customized, Patient Specific 3D Anatomo-Functional Model and Prostheses", funded by **CNR** (**National Research Council**), <u>unit leader</u>
2009-2013	"Aortic VAlve Sparing: toward an innovative PROsthesis design (through the exploitation of advanced materials and computational mechanics)", funded by **Fondazione Cariplo**, <u>project leader</u>
2010-2012	"Shape-memory-alloy advanced modeling for civil, industrial and biomedical engineering applications", funded by **MIUR (Italian Department of University Research)**, <u>project leader</u>
2007-2009	"SMARTeR Shape Memory Alloys to Regulate Transient Responses in civil engineering", funded by **ESF (European Science Foundation)** within S3T program, <u>unit leader</u>

AWARDS AND HONORS:

2016	**Euler Medal** by **ECCOMAS** (European Community of Computational Methods in Applied Sciences). Award description can be found at http://www.eccomas.org/spacehome/1/4
2015	San Siro Merit by Comune di Pavia. Award description can be found at www.comune.pv.it/site/home/il-comune/documento7503.html
2012	**Fellow Award** by **IACM** (International Association for Computational Mechanics) Award description can be found at http://www.iacm.info/vpage/1/0/Prizes-and-Awards/IACM-Awards

RESEARCH TOPICS (SELECTED):

- **3D printing**: modeling of phenomena occurring during 3D printing at different scales and with different technologies (mainly, FDM & LSM), activation of a 3D printing lab with different technologies
- **Mixed finite elements**: development and analysis of finite element methods for Reissner-Mindlin plates, laminates, shells, locking problems in small and large deformation regimes
- **Material constitutive modeling**: static and dynamic response for low and high number of cycles (metals, polymers, rubbers), advanced materials (shape memory alloys and self-diagnosing materials)
- **Biomechanics**: constitutive laws for biological tissue, modeling and investigation of minimally invasive procedures (stenting) as well as invasive cardio-surgery procedures, generation of computational models from patient-specific medical images
- **Isogeometric analysis**: structural mechanics problems in small and large deformations
- **Fluid-structure interaction**: mathematical modeling and applications to hydraulics and cardiovascular applications
- **Fast/impact dynamics:** development of meshless numerical techniques, smoothed particle hydrodynamics (**SPH**) methods
- **Advanced materials for the reduction of seismic risk**: development of innovative devices