

Curriculum vitae

Dr. Mariella Diaferio

In 1997 she graduated with honours (110/110 cum laude) in Civil Engineering (Structural Engineering) at the Politecnico di Bari with a dissertation on Structural Dynamics.

She is Associate Professor of Structural Engineering (ICAR/09) at the Politecnico di Bari from 2019.

From 2002 to 2019 she was Assistant Professor of Structural Engineering (ICAR/09) at the Politecnico di Bari.

In 2001 she attained the Ph.D. in Structural Engineering at the University of Florence (associated universities: University of Pisa, University of Genova, University of Udine, Politecnico di Bari) by discussing her doctoral dissertation entitled “Non-Linear models for suspended elastic structures”

In 2001 Mariella Diaferio gained a research contract at the University of Roma La Sapienza on the “Numerical analysis of structural models for long span suspended bridges subjected to wind actions”.

In 2002 she received the Post- Doctoral scholarship in “Non-linear dynamic analysis of structures with unilateral restraints”

From 2006 to 2009 she was member of the Board of Governors of the Politecnico di Bari

From 2017 to 2019 she was member of the Disciplinary Board of the Politecnico di Bari

From 2004 to 2009 Rector’s delegate of the Politecnico di Bari.

In the field of teaching, she has given courses and collaborated to the design laboratories in Structural Engineering, Static Restoration, Steel Structures, Theories and construction techniques in their historical development, Structural Morphologies, and Earthquake Engineering. She currently holds the course of Structural Engineering.

She has been a member of many PhDs Committees; she is currently a member of the Ph.D. Board in "Risk and Environmental, Territorial and Building Development" of the Department of Civil, Environmental, Land, Construction and Chemistry Engineering (DICATECh) of the Polytechnic University of Bari.

She is the author of over 80 scientific publications on national and international journals and proceedings in the field of Structural Engineering, she mainly developed the topics related to the seismic behaviour of structures, the study of seismic hysteretic devices for structures, the damage detection, the dynamic identification, the vulnerability and damage assessment in historical buildings, the non-linear dynamic analysis, the behaviour of bridges subjected to wind action, the non-destructive tests on structures, the retrofitting interventions on buildings.

She designed and performed several experimental campaigns: quasi-static cyclic tests for the characterization of passive protection devices; Shaking table tests on frames equipped with passive protection devices; Static and dynamic tests on the Provincial Administration building of Bari, Non-destructive static and dynamic tests on the Clock tower of Trani’s Castle, Non-destructive static and dynamic tests on the Bell tower of Trani’s Cathedral, Static and dynamic tests on the Church Matrice in Noci, Dynamic tests on the bell tower of Church San Patrizio in Roma, Dynamic tests on the bell tower of Basilica Pontificia SS. Medici in Bitonto; Dynamic tests on the bell tower of Church Santa Maria di

Loreto in Mola di Bari, Dynamic tests on the bell tower of Church San Nicola in Adelfia, Dynamic tests on the medieval tower in Craco (Matera, Italy), Dynamic tests on the medieval tower in Febonio (Trasacco, l'Aquila), Dynamic tests on the Annunziata tower (Corfù, Greece), Dynamic tests on the City Hall of Corfù (Greece), Dynamic tests by means of radar interferometer on precast r.c. viaduct on the Bari Centrale - Quartiere S. Paolo railway line, Dynamic tests on the bell tower of Church Lamadacqua (Noci), Quasi-static tests on an arch realised by a new constructive system.

She was visiting researcher from 17-07-2018 to 28-07-2018 and from 01-08-2018 to 30-08-2018 at the Departamento de Ingegneria Civil – Escuela Politecnica Superior – Universidad de Alicante (Spain)

She has been a member of research groups of many projects characterised by collaborations at national and international level:

- Research Project “*Shear Panels for the Seismic Protection of Buildings*” funded by European Community Project ECOEST2 “European Consortium of Earthquake Shaking Tables”
- PRIN “*Life-cycle performance, innovation and design criteria for structures and infrastructures facing aeolian and other natural hazards*” PERBACCO
- PRIN “*Vibrations in Civil Engineering Structures: source of damage and discomfort, diagnostic and safety assessment tool*” VINCES
- Research Project “*Study of liquefaction in some European sites through statistical approaches and ground-structure interaction*” funded by Integrated Actions Italy-Spain Programme,
- Strategic Project “*Innovative approaches to the modelling and experimentation of materials and structures, for the development of production systems of Civil Engineering. S.I.S.M.A.*”
- Explorative Project “*Optimization of thermal and mechanical performances of flat clay blocks*”
- ReLuis (Network of Italian labs of seismic engineering) Executive Project 2005 – 2008 Research Project N. 7 “*Technologies for Seismic Isolation and control of structures and infrastructures*”.
- Research Project “*WET SYS B*”. funded by Pic Interreg III A Italy-Albania – Axis II - 2.1 – Environmental protection
- PRIN “*Wind effects on slender structures: Performance-based optimal design*” Wi-POD,
- Strategic Project “*Experimental Mechanics Integrated Laboratory In Aerospace*” EMILIA
- Strategic Project “*Innovative models for mechatronic systems.*”
- Research Project SERIES. Proposal P03-0034: “*Assessment of the seismic behaviour of flat-bottom silos containing grain-like materials*” funded by the 7th Framework Programme. Capacities Specific Programme Research Infrastructure, project performed in cooperation with EQUALS Laboratory Bristol UK.
- ReLuis (Network of Italian labs of seismic engineering) Executive Project RELUIS II – AT2: Regulatory and technological innovations in seismic engineering– Line 2.3: Technological innovation in seismic engineering – Task 2.3.2: *Development and analysis of new technologies for seismic upgrading.*
- Research Project: *Structural monitoring of artistic and historical building testimonies SMARTBUILT*, funded by European Territorial Cooperation Programme Greece – Italy 2007-2013.
- Research Project - *Mechatronic innovative safety systems (wired and wireless) for railway, aerospace and robotic applications MASSIME*, funded by National Operational Programme (PON) for Research and Competitiveness 2007-2013
- Research Project STEM-STELO: “*Systems and Technologies for the Implementation of Exceptional Transport and Development Machinery of the Logistic Project*”, funded by National Operational Programme (PON) for Research and Competitiveness 2007-2013.

- PRIN “*Dynamics, Stability and Control of Flexible Structures*”.
- Research Project of the Project Networks Laboratories of the Puglia Region: “*Laboratory for the development of renewable sources and energy efficiency in energy districts. Project ZERO (Zero Emission Research Option)*”.
- ReLuis (Network of Italian labs of seismic engineering) Executive Project 2014-2018. Line 6: “*Isolation and dissipation*”.
- Research Project SERA TA 2nd call for proposals “P07 - *SEismic BEhavior of Scaled MOdels of groin VAults made by 3D printers (SEBESMOVA3D)*”.

She was beneficiary of the funding for basic research activities FFABR 2017

She was consultant for the following activities:

- Experimental campaign on Apulian Theatres, within the agreement between the Teatro Pubblico Pugliese and Politecnico di Bari. During this activity 25 historical Apulian theatres have been investigated.
- She has been appointed by Politecnico di Bari in the planning, supervision and testing of masonry constructions characterised by different construction typologies for the setting up of a Laboratory for the Protection of Historical Heritage.
- She has been appointed by Politecnico di Bari in the planning, supervision and testing of ground penetrating radar test system for the setting up of a Laboratory for the Protection of Historical Heritage.
- She has been employed by Ferrotramviaria S.p.A. for defining “a procedure for the interpretation of dynamic structural identification test data for the assessment of the p.r.c. bridges on the Bari Centrale - Quartiere S. Paolo line”.
- Consultant for the evaluation of structural behaviour of the church Lamadacqua in Noci e of the church Santa Lucia in Alberobello. This activity foresees dynamic tests and identification of the modal parameters, definition and updating of a finite element model.
- Consultant for the evaluation of structural behaviour of the church Matrice in Noci
- Consultant for the evaluation of structural behaviour of the bell tower of the church San Nicola in Adelfia (Bari)
- She has been employed by Comune di Bari for “dynamic tests on the Adriatico cable-stayed bridge”.

She is reviewer for many international journals as: Construction and Building Materials, Bulletin of Earthquake Engineering, International Journal of Non-Linear Mechanics, Structures, Engineering Structure, Engineering and Computational Mechanics, Advances in Civil Engineering, Scientia Iranica, Computers and Concrete, Soil Dynamics and Earthquake Engineering, Mechanics Based Design of Structures and Machines, Inverse Problems in Science & Engineering, Journal of Civil Engineering and Architecture, International Journal of Advanced Structural Engineering.

She was reviewer for PRIN, SIR and FISR projects.