

# **Curriculum Vitae**

**2004 - 2019**

**Ph.D. Ing. FRANCESCO TORNABENE**

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# 1 Personal Information and Short Biography

Francesco Tornabene

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Position: Assistant professor

SSD: Structural Mechanics, ICAR/08

Affiliation (since September 10<sup>th</sup> 2018): Department of Innovation Engineering, Università del Salento, Lecce.

Affiliation (up to September 9<sup>th</sup> 2018): DICAM, Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, Scuola di Ingegneria e Architettura, Alma Mater Studiorum - University of Bologna, Bologna.

## 1.1 List of Titles

**2004 - Today:** Author of more than 220 scientific publications.

**2004 - Today:** Reviewer activity for more than 190 National and International Journals.

**7 February 2019: Ambassador of Bologna Award** for the organization of 21st International Conference on Composite Structures ICCS21, 4-7 September 2018, Bologna, Italy. (<https://events.unibo.it/iccs21>)

**November 2018: Highly Cited Researcher** by Clarivate Analytics (<https://hcr.clarivate.com>).

**September 2018 - Today: Assistant Professor** at the University of Salento.

**July 2018 - Today:** Member of the **European Academy of Sciences** (EurASc, <http://www.eurasc.org>).

**June 2018 - Today:** Member of the **International Research Center on Mathematics and Mechanics of Complex Systems** (M&MOCS, <http://memocs.univaq.it>).

**5 April 2018 - 5 April 2024: National Academic Qualification as Full Professor** in Mechanics of Solids and Structures (**08/B2**)

**September 2017: First author** of the scientific paper: “F. Tornabene, N. Fantuzzi, M. Bacciocchi, E. Viola (2018) - *Mechanical Behavior of Damaged Laminated Composites Plates and Shells: Higher-Order Shear Deformation Theories*, Composite Structures 189, 304-329”, winner of “**IAN MARSHALL’S AWARD for Best Student Paper**” during the ICCS20, 20th International Conference on Composite Structures, September 4, 2017.

**August 2017 - Today: Co-Editor** of the International Journal: *The Open Civil Engineering Journal*.

**7 April 2017 - 7 April 2023: National Academic Qualification as Associate Professor** in Mechanics of Solids and Structures (**08/B2**) and Aeronautic, Aerospace and Naval Engineering (**09/A1**).

**January 2017 - Today: Editor-In-Chief** of the International Journal: *Journal of Composites Science*.

**January 2017 - Today:** 40<sup>th</sup> position and ranking 20 in the **Top Italian Scientists List (Engineering Area)** ([http://www.topitalianscientists.org/TIS\\_HTML/Top\\_Italian\\_Scientists\\_Engineering.htm](http://www.topitalianscientists.org/TIS_HTML/Top_Italian_Scientists_Engineering.htm)).

**October 2016: Second Author** of the scientific paper: “N. Fantuzzi, F. Tornabene, M. Bacciocchi, R. Dimitri (2017) - *Free Vibration Analysis of Arbitrarily Shaped Functionally Graded Carbon Nanotube-Reinforced Plates*,

Composites Part B 115, 384-408” winner of the “Best Student Paper Award”, during the International Conference Multiscale Innovative Materials and Structures - MIMS16, October 28-30, 2016.

**2014 - Today: Editor-In-Chief** of the International Journal: *Curved and Layered Structures*.

**2014 - Today: Co-organizer of International Conferences:** SPB2015 (International Conference on Shells, Plates and Beams, 9-11 September 2015, Bologna, Italy), MECHCOMP2 (2nd International Conference on Mechanics of Composites, 11-14 July 2016, Porto, Portugal), ICCS19 (19th International Conference on Composite Structures, 9-11 September 2016, Porto, Portugal), MECHCOMP3 (3rd International Conference on Mechanics of Composites, 4-7 July 2017, Bologna, Italy), ICCS20 (20th International Conference on Composite Structures, 4-7 September 2017, Paris, France), ICCS21 (21th International Conference on Composite Structures, 4-7 September 2018, Bologna, Italy).

**April 2014: First Author** of the Scientific Paper: “F. Tornabene, A. Ceruti (2013) - *Free-Form Laminated Doubly-Curved Shells and Panels of Revolution Resting on Winkler-Pasternak Elastic Foundations: A 2-D GDQ Solution for Static and Free Vibration Analysis*, World Journal of Mechanics 3(1), 1-25”, considered as one of the best papers published in the Engineering section at the Scientific Research Publishing Inc.

**2013 - Today: Member of the Editorial Board** of International Journals: *Journal of Engineering* (from November 2017 to Today), *International Journal of Engineering & Applied Sciences* (from October 2017 to Today), *Composite Structures* (from 2016 to Today), *Technologies* (from 2016 to Today), *Journal of Applied and Computational Mechanics* (from 2016 to Today), *Journal of Composites Science* (from 2016 to Today), *Advanced Materials and Technologies* (from 2015 to Today), *Heliyon* (from 2014 to Today), *International Scholarly Research Notices* (from 2014 to Today), *Mathematical Problems in Engineering* (from 2014 to Today), *ISRN Mechanical Engineering* (from 2013 to Today), *Journal of Computational Engineering* (from 2013 to 2017), *Advances in Aircraft and Spacecraft Science* (from 2014 to 2016).

**June 2013: First Author** of the Scientific Paper: “F. Tornabene, N. Fantuzzi, E. Viola, E. Carrera (2014) - *Static Analysis of Doubly-Curved Anisotropic Shells and Panels using CUF Approach, Differential Geometry and Differential Quadrature Method*, Composite Structures 107, 675-697”, winner of the “**IAN MARSHALL’S AWARD for Best Student Paper**” during ICCS17, 17th International Conference on Composite Structures, June 21, 2013.

**April 2012 - Today:** Representative for the **Erasmus exchanges** of the School of Engineering and Architecture for the Civil Engineering courses and for several **internship** in companies.

**April 2012 - Today: Member of the Scientific Committee** of the CIMEST Centre and International Conferences: CACMSIstanbul2015 (1st International Conference on Advances in Composite Materials and Structures, 13-15 April 2015, Istanbul, Turkey), CACMSSaoPaulo2016 (2nd International Conference on Advances in Composite Materials and Structures, 25-27 April 2016, São Paulo, Brazil), ICCS18 (18th International Conference on Composite Structures, 15-19 June 2015, Lisbon, Portugal).

**June 2012 - Today:** inserted in the website **Shell Buckling People** (<http://shellbuckling.com/people.php>).

**April 2012 - Today:** Author, promoter and developer of the **software DiQuMASPAB** (*Differential Quadrature for Mechanics of Anisotropic Shells, Plates, Arches and Beams*).

**April 2012 - Today: Lecturer at the Alma Mater Studiorum - University of Bologna for the following Classes:** *Dynamics of Structures M* for the a.y. 2012/2013 and 2013/2014; *Computational Mechanics M* for the a.y. 2013/2014; *Theory of Structures M* from the a.y. 2014/2015 to the Today; *Plates and Shells M* from the a.y. 2014/2015 to Today.

**April 2012 - September 2018: Assistant professor** at the Alma Mater Studiorum - University of Bologna.

**2012 - Today: Invited Chairman and organizer of thematic sessions** in various International Conferences: ICMNMMCS2012 (International Conference on Mechanics of Nano, Micro and Macro Composite Structures, Torino, Italy, 18-20 June 2012), ICCS17 (17th International Conference on Composite Structures, Porto, Portugal, 17-21 June 2013), AIMETA2013 (XXI° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata, Torino, Italy, 17-20 September 2013), MECHCOMP2014 (1st International Conference on Mechanics of Composites, Stony Brook University, Long Island, USA, 8-12 June 2014), ICCM2017 (8th International Conference on Computational Methods, Guilin, Guangxi, China, 25-29 July 2017), ICCM2018 (9th International Conference on Computational Methods, Rome, Italy, 6-10 August 2018).

**November 2011 - January 2012: Fixed-term researcher** for the research programme entitled: *Advanced Computation systems for Anisotropic Materials*.

**February 2011 - October 2011: Owner of the Research Grant** entitled: *Design Methodologies for Recycling Applied to the Nautical Field*.

**2009 - Today: Research Activity in collaboration with Professors of Foreign and National Universities**, such as: Daniel J. Inman, Isaac B. Elishakoff, Serge Abrate, J.N. Reddy, Antonio J.M. Ferreira, Erasmo Carrera, Romesh C. Batra, Mohamad S. Qatu, Ashraf M. Zenkour, Moshe Eisenberger, Alex Kalamkarov, Salvatore Brischetto, Fernando Fraternali, Luigi Ascione, Saeed Kamarian, Ramkumar Kandasamy, Yong Li, Giovanni Della Puppa, M. Trautz, S. Cao, M. Nejati, A. Asanjarani, Giorgio Zavarise, Patrizia Trovalusci, Francesco Ubertini, Stefania, Tomasiello, R. Jiwari, Domagoj Lanc, Rita F. Rango, Liz G. Nallim.

**January 2007 - January 2009: Owner of the Research Grant** entitled: *Unified Formulation of Shell Structures Made of Anisotropic Materials. Numerical Analysis by means of the Generalized Differential Quadrature Method and the Finite Element Method*.

**May 2007: Obtained the PhD** in *Mechanics of Structures*. Title of the Thesis: *Modeling and Solution of Shell Structures made of Anisotropic Material*.

**January 2005 - December 2011: Adjunt Professor (tutor contract)** activities of supporting the teaching for the course of *Structural Mechanics L*, a.y. 2005/2006 and a.y. 2007/2008, for the course *Mechanics Design and Laboratory T*, a.y. 2010/2011.

**November 2004: Winner of the Carlo Felice Jodi grant** for graduated students in structural mechanics.

**January 2004: Obtained the Qualification for the Mechanical Engineering Profession.**

**Dicembre 2003: First position obtained in the competition** for the admission in the **PhD courses** in *Mechanics of Structures*.

**July 2003: Degree in Mechanical Engineering** at the Alma Mater Studiorum – University of Bologna. Title of the thesis: *Dynamic Behavior of Cylindrical Shells: Formulation and Solution*.

**July 2001: Patent for the Industrial Invention** “*Friction Clutch for High Performance Vehicles*”, Question n. BO2001A00442 filed on 13-07-2001 in Bologna. Owner: Alma Mater Studiorum - University of Bologna.

**Luglio 1997: High School Degree (“Maturità Classica”)** achieved at the Liceo Classico “S. Luigi” in Bologna.

## 2 Scientific Activities

The investigated research topics are the following:

### 2.1 Research Topics

- 1) Research activity in “Structural Mechanics”: Theory of Plates and Shells, Theory of Arches with Variable Cross-Section and Curvature, Theory of Beams.
- 2) Research activity in “Computational Mechanics”: Generalized Differential Quadrature Method, Finite Element Method, Strong Formulation Finite Elements, Time Integration Methods.
- 3) Research activity in “Innovative Materials and Smart Materials”: Functionally Graded Materials, Carbon Nanotubes, Variable Angle-Tow Composites.
- 4) Research activity in “Fracture Mechanics”: Orthotropic and Piezoelectric Materials.
- 5) Research activity in “Elastic Stability”: Non-Conservative Forces.

### 2.2 Research Activities

The research activity aimed mainly to investigate the structural behavior of composite doubly-curved shells, focusing the attention also to the innovations in the industrial processes for the development of new classes of materials. All the considered theoretical models have been validated by means of numerical applications based on the differential quadrature method. These topics can be included in the macro categories, presented in detail in the following.

#### 2.2.1 Structural Mechanics

The research activity in the structural mechanics topic has focused mainly on the analysis of plates and shells made of composite materials. Shell structures occupy an important role in civil, mechanical, architectural, aerospace and naval engineering. The wide use of shells in engineering is due to several advantages. These structures show an extraordinary efficiency in bearing with external loads, a high degree of resistance, good stiffness and a high strength-to-weight ratio. For these reasons, doubly-curved shells have been the main topic of several researches from 1940 up to date.

A shell is a three-dimensional solid that can be studied with the classical theory of elasticity. However, the calculations based on this kind of theory could be computationally burdensome, since these models require a huge number of degrees of freedom. The initial three-dimensional problem is reduced to a two-dimensional one defined on the middle surface of the structure through the introduction of appropriate hypotheses. In addition to the classic theory of elasticity (*3D Elasticity*), several *Higher-order Shear Deformation Theories*

(HSDTs), characterized by different kinematic models, have been developed and analyzed. The theoretical framework on which these theories are based is given by the so-called *Carrera Unified Formulation* (CUF). The formulation in hand has allowed the study and the consequent implementation in a computational code of two different approaches to deal with composite doubly-curved shells: the *Equivalent Single Layer* (ESL) and the *Layer-Wise* (LW). The first approach uses a kinematic expansion of the generalized displacements referred to the shell middle surface; the second one, instead, considers the displacements on the lower and upper surfaces of each layer that composes the laminate as main degrees of freedom, whereas the intermediate displacements represent the kinematic expansion of the model. It is important to remind that the CUF includes also most of the classical theories, such as the *Classical Shell Theories* (CSTs) and the *First-order Shear Deformation Theories* (FSDTs). Examples of these approaches are the Kirchhoff-Love and Reissner-Mindlin theories, respectively.

The geometries under investigation includes doubly-curved shells and panels (shells of revolution and shells of translations), singly-curved shells (conical, cylindrical and spherical shells), and degenerate shells (circular and rectangular plates). By means of the differential geometry, it has been possible to evaluate all the geometric parameters involved in the governing equations of the considered structures. In the more general circumstance of arbitrarily-shaped shells, the coefficients at issues, such as the main radii of curvature, have been defined in a principal and orthogonal curvilinear coordinate system. In addition, *free-form* shells and panels have been investigated. Their peculiar shapes have been mathematically defined by means of the so-called *Bézier curves*.

The structural theories that describe the mechanical behavior of a singly-curved shell of translation are used also to deduce the corresponding higher-order theories for planar beams with curvilinear axis made of composite materials. The Carrera Unified Formulation still represents the theoretical framework of the theories at issue. Nevertheless, the expansion along the width coordinate has been neglected in order to analyze arches and beams characterized by variable cross-sections and curvatures.

The validity of these models has been proven by many numerical applications, in terms of dynamic and static behavior. In particular, a posteriori stress and strain recovery procedure has been developed for the static analysis. This procedure has allowed to obtain useful results for the structural design, by using the three-dimensional elasticity equations. This aims at avoiding the delamination, an issue that typically affects laminated composites. All the results have been accomplished by means of a MATLAB code and can be easily obtained again. The comparison with the values obtained by some commercial codes, such as Ansys, Nastran, Abaqus, Femap, VisualNastran Desktop, Pro\Engineer and Straus, has allowed to prove the validity of the considered structural models.

### ***Arches & Beams***

1. E. Viola, F. Tornabene (2005) - Vibration Analysis of Damaged Circular Arches with Varying Cross-section, Structural Integrity and Durability (SID-SDHM) 1(2), 155-169. (IF2005 -, ISSN: 1930-2983).
2. E. Viola, M. Dilena, F. Tornabene (2007) - Analytical and Numerical Results for Vibration Analysis of Multi-Stepped and Multi-Damaged Circular Arches, Journal of Sound and Vibration 299(1-2), 143-163. (IF2007 1.024, ISSN: 0022-460X).

3. E. Viola, L. Panzacchi, F. Tornabene (2007) - General Analysis and Application to Redundant Arches under Static Loading, *Construction and Building Materials* 21(5), 1129-1143. (IF2007 0.841, ISSN: 0950-0618).
4. A. Marzani, F. Tornabene, E. Viola (2008) - Nonconservative Stability Problems via Generalized Differential Quadrature Method, *Journal of Sound and Vibration* 315(1-2), 176-196. (IF2008 1.364, ISSN: 0022-460X).
5. F. Tornabene, A. Marzani, E. Viola, I. Elishakoff (2010) - Critical Flow Speeds of Pipes Conveying Fluid by the Generalized Differential Quadrature Method, *Advances in Theoretical and Applied Mechanics* 3(3), 121-138. (IF2010 -, ISSN: 1313-6550).
6. G. Carpentieri, F. Tornabene, L. Ascione, F. Fraternali (2015) - An Accurate One-Dimensional Theory for the Dynamics of Laminated Composite Curved Beams, *Journal of Sound and Vibration* 336(1), 96-105. (IF2015 2.107, ISSN: 0022-460X).
7. R. Dimitri, F. Tornabene (2015) - A Parametric Investigation of the Seismic Capacity for Masonry Arches and Portals of Different Shapes, *Engineering Failure Analysis* 52(1), 1-34. (IF2013 1.130, ISSN: 1350-6307).
8. F. Tornabene, R. Dimitri, E. Viola (2016) - Transient Dynamic Response of Generally-Shaped Arches Based on a GDQ-Time-Stepping Method, *International Journal of Mechanical Sciences* 114, 277-314. (IF2015 2.481, ISSN: 0020-7403).
9. F. Tornabene, N. Fantuzzi, M. Baccocchi (2018) - Refined Shear Deformation Theories for Laminated Composite Arches and Beams with Variable Thickness: Natural Frequency Analysis, *Engineering Analysis with Boundary Elements* 100, 24-47. (IF2016 1.721, ISSN: 0955-7997).

### ***Plates & Shells***

10. E. Viola, F. Tornabene (2006) - Vibration Analysis of Conical Shell Structures Using GDQ Method, *Far East Journal of Applied Mathematics* 25(1), 23-39. (IF2006 -, ISSN: 0972-0960).
11. F. Tornabene, E. Viola (2007) - Vibration Analysis of Spherical Structural Elements Using the GDQ Method, *Computers and Mathematics with Applications* 53(10), 1538-1560. (IF2007 0.72, ISSN: 0898-1221).
12. F. Tornabene, E. Viola (2008) - 2-D Solution for Free Vibrations of Parabolic Shells Using Generalized Differential Quadrature Method, *European Journal of Mechanics - A/Solids* 27(6), 1001-1025. (IF2008 1.674, ISSN: 0997-7538). 14th Position in the TOP 25 Hottest Articles for *European Journal of Mechanics - A/Solids*, July to September 2008. 3th Position in the TOP 25 Hottest Articles for *European Journal of Mechanics - A/Solids*, October to December 2008. Included in Most Cited *European Journal of Mechanics - A/Solids* Articles (<http://www.journals.elsevier.com/european-journal-of-mechanics-asolids/most-cited-articles/>).
13. F. Tornabene (2011) - Free Vibrations of Laminated Composite Doubly-Curved Shells and Panels of Revolution via the GDQ Method, *Computer Methods in Applied Mechanics and Engineering* 200(9-12), 931-952. (IF2011 2.651, ISSN: 0045-7825).
14. F. Tornabene (2011) - 2-D GDQ Solution for Free Vibrations of Anisotropic Doubly-Curved Shells and Panels of Revolution, *Composite Structures* 93(7), 1854-1876. (IF2011 2.24, ISSN: 0263-8223).
15. F. Tornabene (2011) - Free Vibrations of Anisotropic Doubly-Curved Shells and Panels of Revolution with a Free-Form Meridian Resting on Winkler-Pasternak Elastic Foundations, *Composite Structures* 94(1), 186-206. (IF2011 2.24, ISSN: 0263-8223).
16. F. Tornabene, A. Liverani, G. Caligiana (2012) - Laminated Composite Rectangular and Annular Plates: A GDQ Solution for Static Analysis with a Posteriori Shear and Normal Stress Recovery, *Composites Part B Engineering* 43(4), 1847-1872. (IF2012 2.143, ISSN: 1359-8368).
17. F. Tornabene, A. Liverani, G. Caligiana (2012) - Static Analysis of Laminated Composite Curved Shells and Panels of Revolution with a Posteriori Shear and Normal Stress Recovery Using Generalized Differential Quadrature Method, *International Journal of Mechanical Sciences* 61(1), 71-87. (IF2012 1.613, ISSN: 0020-7403).
18. F. Tornabene, A. Liverani, G. Caligiana (2012) - General Anisotropic Doubly-Curved Shell Theory: A Differential Quadrature Solution for Free Vibrations of Shells and Panels of Revolution with a Free-Form Meridian, *Journal of Sound and Vibration* 331(22), 4848-4869. (IF2012 1.613, ISSN: 0022-460X).
19. A.J.M. Ferreira, E. Viola, F. Tornabene, N. Fantuzzi, A.M. Zenkour (2013) - Analysis of Sandwich Plates by Generalized Differential Quadrature Method, *Mathematical Problems in Engineering* Vol. 2013, Article ID 964367, 1-22, <http://dx.doi.org/10.1155/2013/964367>. (IF2013 1.082, ISSN: 1024-123X).
20. F. Tornabene, A. Ceruti (2013) - Free-Form Laminated Doubly-Curved Shells and Panels of Revolution Resting on Winkler-Pasternak Elastic Foundations: A 2-D GDQ Solution for Static and Free Vibration Analysis, *World Journal of Mechanics* 3(1), 1-25. (IF2013 -, ISSN: 2160-049X).
21. F. Tornabene, N. Fantuzzi, E. Viola, A.J.M. Ferreira (2013) - Radial Basis Function Method Applied to Doubly-Curved Laminated Composite Shells and Panels with a General Higher-Order Equivalent Single Layer Theory, *Composites Part B Engineering* 55, 642-659. (IF2013 2.602, ISSN: 1359-8368).
22. F. Tornabene, E. Viola (2013) - Static Analysis of Functionally Graded Doubly-Curved Shells and Panels of Revolution, *Meccanica* 48(4), 901-930. (IF2013 1.815, ISSN: 0025-6455).
23. F. Tornabene, E. Viola, N. Fantuzzi (2013) - General Higher-order Equivalent Single Layer Theory for Free Vibrations of Doubly-Curved Laminated Composite Shells and Panels, *Composite Structures* 104(1), 94-117. (IF2013 3.12, ISSN: 0263-8223).



24. E. Viola, F. Tornabene, N. Fantuzzi (2013) - General Higher-Order Shear Deformation Theories for the Free Vibration Analysis of Completely Doubly-Curved Laminated Shells and Panels, *Composite Structures* 95(1), 639-666. (IF2013 3.12, ISSN: 0263-8223).
25. E. Viola, F. Tornabene, N. Fantuzzi (2013) - Static Analysis of Completely Doubly-Curved Laminated Shells and Panels Using General Higher-Order Shear Deformation Theories, *Composite Structures* 101(1), 59-93. (IF2013 3.12, ISSN: 0263-8223). Included (30 May 2013) in the Most Downloaded Composite Structures Articles in the last 90 days (<http://www.journals.elsevier.com/composite-structures/most-downloaded-articles/>).
26. A.J.M. Ferreira, E. Carrera, M. Cinefra, E. Viola, F. Tornabene, N. Fantuzzi, A.M. Zenkour (2014) - Analysis of Thick Isotropic and Cross-Ply Laminated Plates by Generalized Differential Quadrature Method and a Unified Formulation, *Composites Part B Engineering* 58(1), 544-552. (IF2014 2.983, ISSN: 1359-8368).
27. F. Tornabene, N. Fantuzzi, M. Baccocchi (2014) - The Local GDQ Method Applied to General Higher-Order Theories of Doubly-Curved Laminated Composite Shells and Panels: The Free Vibration Analysis, *Composite Structures* 116(1), 637-660. (IF2014 3.318, ISSN: 0263-8223).
28. F. Tornabene, N. Fantuzzi, M. Baccocchi (2014) - Free Vibrations of Free-Form Doubly-Curved Shells Made of Functionally Graded Materials Using Higher-Order Equivalent Single Layer Theories, *Composites Part B Engineering* 67(1), 490-509. (IF2014 2.983, ISSN: 1359-8368).
29. F. Tornabene, N. Fantuzzi, E. Viola, E. Carrera (2014) - Static Analysis of Doubly-Curved Anisotropic Shells and Panels using CUF Approach, Differential Geometry and Differential Quadrature Method, *Composite Structures* 107, 675-697. (IF2014 3.318, ISSN: 0263-8223). Winner of the IAN MARSHALL'S AWARD for Best Student Paper at the ICCS17 - 17th International Conference on Composite Structures, June 21, 2013.
30. F. Tornabene, N. Fantuzzi, E. Viola, J.N. Reddy (2014) - Winkler-Pasternak Foundation Effect on the Static and Dynamic Analyses of Laminated Doubly-Curved and Degenerate Shells and Panels, *Composites Part B Engineering* 57(1), 269-296. (IF2014 2.983, ISSN: 1359-8368).
31. E. Viola, L. Rossetti, N. Fantuzzi, F. Tornabene (2014) - Static Analysis of Functionally Graded Conical Shells and Panels Using the Generalized Unconstrained Third Order Theory Coupled with the Stress Recovery, *Composite Structures* 112(1), 44-65. (IF2014 3.318, ISSN: 0263-8223).
32. F. Tornabene, S. Brischetto, N. Fantuzzi, E. Viola (2015) - Numerical and Exact Models for Free Vibration Analysis of Cylindrical and Spherical Shell Panels, *Composites Part B Engineering* 81(1), 231-250. (IF2015 3.850, ISSN: 1359-8368).
33. F. Tornabene, N. Fantuzzi, M. Baccocchi, R. Dimitri (2015) - Dynamic Analysis of Thick and Thin Elliptic Shell Structures Made of Laminated Composite Materials, *Composite Structures* 133(1), 278-299. (IF2015 3.853, ISSN: 0263-8223).
34. F. Tornabene, N. Fantuzzi, M. Baccocchi, R. Dimitri (2015) - Free Vibrations of Composite Oval and Elliptic Cylinders by the Generalized Differential Quadrature Method, *Thin-Walled Structures* 97(1), 114-129. (IF2015 2.063, ISSN: 0263-8231).
35. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Accurate Inter-Laminar Recovery for Plates and Doubly-Curved Shells with Variable Radii of Curvature Using Layer-Wise Theories, *Composite Structures* 124(1), 368-393. (IF2015 3.853, ISSN: 0263-8223).
36. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - A New Approach for Treating Concentrated Loads in Doubly-Curved Composite Deep Shells with Variable Radii of Curvature, *Composite Structures* 131(1), 433-452. (IF2015 3.853, ISSN: 0263-8223).
37. E. Viola, F. Tornabene, N. Fantuzzi (2015) - Stress and Strain Recovery of Laminated Composite Doubly-Curved Shells and Panels Using Higher-Order Formulations, *Key Engineering Materials* 624, 205-213. (IF2015 -, ISSN: 1662-9795).
38. F. Tornabene (2016) - General Higher Order Layer-Wise Theory for Free Vibrations of Doubly-Curved Laminated Composite Shells and Panels, *Mechanics of Advanced Materials and Structures* 23(9), 1046-1067. (IF2015 1, ISSN: 1537-6494).
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### 2.2.2 Innovative and Smart Materials

Due to the recent noticeably developments in the material sectors, peculiar attention has been given to the study of innovative materials, such as *Functionally Graded Materials* (FGMs), which allows to define variable mechanical properties along the shell thickness. In particular, three different distributions have been considered to define the volume fraction of their constituents: a *five-parameter power law*, the *Weibull distribution* and an *exponential distribution*. The effect of the variation of the parameters that characterize these laws on the natural frequencies, as well as on the static response, has been investigated by means of several numerical applications. The theory of mixture and the Mori-Tanaka scheme have been used to evaluate the overall mechanical properties of the FGMs.

Composites reinforced by *Carbon Nanotubes* (CNTs) are another example of the application of innovative materials. It is possible, in fact, to improve the mechanical behavior of the structures in terms of stiffness and strength by inserting these nanoparticles within the layers.

Finally, the so-called *Variable Angle Tow* (VAT) composites have been investigated in the field of the innovative materials. These composites are characterized by variable mechanical properties within the reference domain. In particular, these materials allow to design more efficiently the mechanical properties of a composite layer, in order to improve the mechanical response of a structure. The mathematical description

of the variable properties has been obtained by means of a general law that is able to define the curvilinear paths of the reinforcing fibers. Several parametric studies have been performed to investigate the effect of the orientation of the fibers on the dynamic and static responses of plates and shells. The same mathematical formulation has been used also to characterize the variable thickness of the same structures or directly the mechanical features of the structure in terms of elastic coefficients.

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### 2.2.3 Computational Mechanics and Numerical Techniques

As far as the topic of numerical methods is concerned, the Generalized Differential Quadrature (GDQ) method has been investigated and proposed as an alternative to the classical schemes, such as the finite differences or the finite element methods. The GDQ method has been developed by Shu to improve the differential quadrature approach proposed by Bellman in the Seventies. In particular, several approaches able to evaluate the weighting coefficients required to approximate the derivatives of any order have been investigated. To this aim, the differential quadrature based on the Lagrange Polynomials (*Polynomial Differential Quadrature* or PDQ) and the one based on the Fourier expansion (*Harmonic Differential Quadrature* or HDQ) have been considered.

It is well-known that the various approaches available in the literature are characterized by the use of different basis functions for the functional approximation and different grid point distributions required to define the position of the discrete points within the reference domain. For this purpose, a general approach able to evaluate the weighting coefficients for different basis functions and discrete distributions has been proposed. In addition, the expressions of the main basis functions, as well as the grid point distributions, have been presented. The class of *Radial Basis Functions* (RBFs) has been also used as basis functions. These functions, in fact, depend on the radial distance among the discrete nodes of the domain. All these approaches can be employed also in local form to reduce the computational cost. The *Local Generalized Differential Quadrature* (LGDQ) method have been developed for this purpose.

Moreover, a numerical integration procedure that employs the weighting coefficients evaluated for the differential quadrature has been developed, since many applications require the evaluation of integrals. Thus, the *Generalized Integral Quadrature* (GIQ) method, developed by Shu as the counterpart of the GDQ, has been considered to this aim. Even this technique can be used taking into account various basis functions and grid distributions. In order to emphasize this aspect, different classical integration schemes have been considered, such as the trapezoidal rule or the Simpson's method. In addition, the general approaches for the differential and integral quadrature methods can be easily extended to multi-dimensional cases. A simple and compact mathematical formulation for the evaluation of the weighting coefficients has been developed to this aim. Finally, the accuracy of the GDQ and GIQ methods has been proven by several numerical applications in the structural field.

Generally, practical engineering problems are complex due to geometry, material and load discontinuities. It is necessary, for solving them, to divide the whole domain using finite elements of arbitrary shape. These subdomains can be reasonably called finite elements due to the evident analogy with the FEM techniques. The necessity of studying arbitrarily shaped domains or domains characterized by mechanical and geometrical discontinuities leads to the development of a new numerical approach that divide the structure in

finite elements and the strong form of the fundamental equations is solved inside each element. The fundamental aspects of this technique, named *Strong Formulation Finite Element Method* (SFEM), have been discussed. The starting point is the differential quadrature method. The mapping technique, used also in the finite element methods, transforms an arbitrarily shaped element into a regular element (*computational element*). In other words, the SFEM means a numerical procedure that divides the physical domain in finite elements and uses the differential quadrature to solve the strong form equations inside each element mapped into the computational space. This approach differs from the classical Finite Element Method (FEM) because the problem at the element level is solved using the weak (or variational) formulation. Several practical applications regarding the static and dynamic behavior of plates, membranes and plane stress and strain states are reported to study the convergence and stability characteristics and reliability of this numerical technique.

- 119.E. Viola, F. Tornabene, N. Fantuzzi (2013) - Generalized Differential Quadrature Finite Element Method for Cracked Composite Structures of Arbitrary Shape, *Composite Structures* 106(1), 815-834. (IF2013 3.12, ISSN: 0263-8223).
- 120.E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - Soft Core Plane State Structures Under Static Loads Using GDQFEM and Cell Method, *CMES* 94(4), 301-329. (IF2013 1.183, ISSN: 1526-1492).
- 121.E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - GDQFEM Numerical Simulations of Continuous Media with Cracks and Discontinuities, *CMES* 94(4), 331-368. (IF2013 1.183, ISSN: 1526-1492).
- 122.E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - On Static Analysis of Plane State Structures via GDQFEM and Cell Method, *CMES* 94(5), 419-456. (IF2013 1.183, ISSN: 1526-1492).
- 123.N. Fantuzzi, F. Tornabene (2014) - Strong Formulation Finite Element Method for Arbitrarily Shaped Laminated Plates - I. Theoretical Analysis, *Advances in Aircraft and Spacecraft Science* 1(2), 124-142. (IF2013-, ISSN: 2287-528X).
- 124.N. Fantuzzi, F. Tornabene (2014) - Strong Formulation Finite Element Method for Arbitrarily Shaped Laminated Plates - II. Numerical Analysis, *Advances in Aircraft and Spacecraft Science* 1(2), 143-173. (IF2013-, ISSN: 2287-528X).
- 125.N. Fantuzzi, F. Tornabene, E. Viola (2014) - Generalized Differential Quadrature Finite Element Method for Vibration Analysis of Arbitrarily Shaped Membranes, *International Journal of Mechanical Sciences* 79, 216-251. (IF2014 2.034, ISSN: 0020-7403).
- 126.N. Fantuzzi, F. Tornabene, E. Viola, A.J.M. Ferreira (2014) - A Strong Formulation Finite Element Method (SFEM) Based on RBF and GDQ Techniques for the Static and Dynamic Analyses of Laminated Plates of Arbitrary Shape, *Meccanica* 49, 2503-2542. (IF2014 1.949, ISSN: 0025-6455).
- 127.F. Tornabene, N. Fantuzzi, M. Bacciocchi (2014) - The Strong Formulation Finite Element Method: Stability and Accuracy, *Fracture and Structural Integrity* 29(1), 251-265. (IF2014 -, ISSN: 1971-8993).
- 128.N. Fantuzzi, M. Bacciocchi, F. Tornabene, E. Viola, A.J.M. Ferreira (2015) - Radial Basis Functions Based on Differential Quadrature Method for the Free Vibration Analysis of Laminated Composite Arbitrarily Shaped Plates, *Composites Part B Engineering* 78(1), 65-78. (IF2015 3.850, ISSN: 1359-8368).
- 129.F. Tornabene, N. Fantuzzi, F. Ubertini, E. Viola (2015) - Strong Formulation Finite Element Method Based on Differential Quadrature: A Survey, *Applied Mechanics Reviews* 67(2), 020801-1-55. (IF2013 2, ISSN: 0003-6900).
- 130.R. Dimitri, N. Fantuzzi, F. Tornabene, G. Zavarise (2016) - Innovative Numerical Methods Based on SFEM and IGA for Computing Stress Concentrations in Isotropic Plates with Discontinuities, *International Journal of Mechanical Sciences* 118, 166-187. (IF2015 2.481, ISSN: 0020-7403).
- 131.N. Fantuzzi, F. Tornabene (2016) - Strong Formulation Isogeometric Analysis (SFIGA) for Laminated Composite Arbitrarily Shaped Plates, *Composites Part B Engineering* 96(1), 173-203. (IF2015 3.850, ISSN: 1359-8368).
- 132.N. Fantuzzi, G. Della Puppa, F. Tornabene, M. Trautz (2017) - Strong Formulation Isogeometric Analysis for the Vibration of Thin Membranes of General Shape, *International Journal of Mechanical Sciences* 120, 322-340. (IF2015 2.481, ISSN: 0020-7403).
- 133.N. Fantuzzi, F. Tornabene, M. Bacciocchi, A.M.A. Neves, A.J.M. Ferreira (2017) - Stability and Accuracy of Three Fourier Expansion-Based Strong Form Finite Elements for the Free Vibration Analysis of Laminated Composite Plates, *International Journal for Numerical Methods in Engineering* 111(4), 354-382. (IF2015 2.1, ISSN: 1097-0207).

- 134.F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - Finite Elements Based on Strong and Weak Formulations for Structural Mechanics: Stability, Accuracy and Reliability, *International Journal of Engineering & Applied Sciences* 9(2), 1-21. (IF2015 -, ISSN: 1309-0267).
- 135.E. Viola, F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - Numerical Investigation of Composite Materials with Inclusions and Discontinuities, *Key Engineering Materials* 747(1), 69-76. (IF2015 -, ISSN: 1662-9795).
- 136.N. Fantuzzi, F. Tornabene, M. Baccocchi, A.J.M. Ferreira (2018) - On the Convergence of Laminated Composite Plates of Arbitrary Shape through Finite Element Models, *Journal of Composites Science* 2(1), 16, 1-50. (IF2018 -, ISSN: 2504-477X).
- 137.F. Tornabene, N. Fantuzzi, M. Baccocchi (2018) - Strong and Weak Formulations Based on Differential and Integral Quadrature Methods for the Free Vibration Analysis of Composite Plates and Shells: Convergence and Accuracy, *Engineering Analysis with Boundary Elements* 92, 3-37. (IF2016 1.721, ISSN: 0955-7997).

## 2.2.4 Other research topics (Fracture Mechanics, Experimental Mechanics)

Some additional topics have been also investigated, such as fracture mechanics and experimental mechanics.

- 138.A. Piva, E. Viola, F. Tornabene (2005) - Crack Propagation in an Orthotropic Medium with Coupled Elastodynamic Properties, *Mechanics Research Communications* 32(2), 153-159. (IF2005 0.586, ISSN: 0093-6413).
- 139.A. Piva, F. Tornabene, E. Viola (2006) - Crack Propagation in a Four-parameter Piezoelectric Medium, *European Journal of Mechanics - A/Solids* 25(2), 230-249. (IF2006 0.897, ISSN: 0997-7538).
- 140.A. Piva, E. Viola, F. Tornabene (2006) - Elastodynamic Degenerate States for a Crack in an Orthotropic Medium, *Meccanica* 41(4), 363-373. (IF2006 0.4, ISSN: 0025-6455).
141. A. Piva, F. Tornabene, E. Viola (2007) - Subsonic Griffith Crack Propagation in Piezoelectric Media, *European Journal of Mechanics - A/Solids* 26(3), 442-459. (IF2007 1.049, ISSN: 0997-7538).
142. E. Viola, C. Boldrini, F. Tornabene (2008) - Non-singular term effect on the Fracture Quantities of a Crack in a Piezoelectric Medium, *Engineering Fracture Mechanics* 75(15), 4542-4567. (IF2008 1.713, ISSN: 0013-7944).
143. Y. Li, N. Fantuzzi, F. Tornabene (2013) - On Mixed Mode Crack Initiation and Direction in Shafts: Strain Energy Density Factor and Maximum Tangential Stress Criteria, *Engineering Fracture Mechanics* 109, 273-289. (IF2013 1.662, ISSN: 0013-7944).
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145. N. Fantuzzi, R. Dimitri, F. Tornabene (2016) - A SFEM-Based Evaluation of Mode-I Stress Intensity Factor in Composite Structures, *Composite Structures* 145(1), 162-185. (IF2015 3.853, ISSN: 0263-8223).
146. R. Dimitri, N. Fantuzzi, Y. Li, F. Tornabene (2017) - Numerical Computation of the Crack Development and SIF in Composite Materials with XFEM and SFEM, *Composite Structures* 160(1), 468-490. (IF2015 3.853, ISSN: 0263-8223).
147. R. Dimitri, Y. Li, N. Fantuzzi, F. Tornabene (2017) - An Innovative Modeling of the Crack Path and Stress Intensity Factor for Arbitrary Shaft Configurations, *Advanced Materials and Technologies* 5, 20-35. (IF2015 -, ISSN: 2414-4606).
148. Y. Li, S. Cao, R. Dimitri, N. Fantuzzi, F. Tornabene (2017) - Analytical and Numerical Investigation of the Stiffness Matrix for Edge-Cracked Circular Shafts, *Fatigue & Fracture of Engineering Materials & Structures* 40(3), 391-411. (IF2015 1.838, ISSN: 1460-2695).
- 149.R. Dimitri, F. Tornabene (2018) - Numerical Study of the Mixed-Mode Delamination of Composite Specimens, *Journal of Composites Science* 2(2), 30, 1-33. (IF2018 -, ISSN: 2504-477X).
- 150.R. Dimitri, F. Tornabene, G. Zavarise (2018) - Analytical and Numerical Modeling of the Mixed-Mode Delamination Process for Composite Moment-Loaded Double Cantilever Beams, *Composite Structures* 187(3), 535-553. (IF2015 3.853, ISSN: 0263-8223).
- 151.R. Jiwari, S. Tomasiello, F. Tornabene (2018) - A Numerical Algorithm for Computational Modelling of Coupled Advection-Diffusion-Reaction Systems, *Engineering Computations* 35(3), 1383-1401. (IF2016 1.010, ISSN: 0264-4401).



## 2.3 List of Publications

### 2.3.1 Papers published in International Journals

#### 2005

1. A. Piva, E. Viola, F. Tornabene (2005) - Crack Propagation in an Orthotropic Medium with Coupled Elastodynamic Properties, *Mechanics Research Communications* 32(2), 153-159. (IF2005 0.586, ISSN: 0093-6413).
2. E. Viola, F. Tornabene (2005) - Vibration Analysis of Damaged Circular Arches with Varying Cross-section, *Structural Integrity and Durability (SID-SDHM)* 1(2), 155-169. (IF2005 -, ISSN: 1930-2983).

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3. A. Piva, F. Tornabene, E. Viola (2006) - Crack Propagation in a Four-parameter Piezoelectric Medium, *European Journal of Mechanics - A/Solids* 25(2), 230-249. (IF2006 0.897, ISSN: 0997-7538).
4. A. Piva, E. Viola, F. Tornabene (2006) - Elastodynamic Degenerate States for a Crack in an Orthotropic Medium, *Meccanica* 41(4), 363-373. (IF2006 0.4, ISSN: 0025-6455).
5. E. Viola, F. Tornabene (2006) - Vibration Analysis of Conical Shell Structures Using GDQ Method, *Far East Journal of Applied Mathematics* 25(1), 23-39. (IF2006 -, ISSN: 0972-0960).

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6. A. Piva, F. Tornabene, E. Viola (2007) - Subsonic Griffith Crack Propagation in Piezoelectric Media, *European Journal of Mechanics - A/Solids* 26(3), 442-459. (IF2007 1.049, ISSN: 0997-7538).
7. F. Tornabene, E. Viola (2007) - Vibration Analysis of Spherical Structural Elements Using the GDQ Method, *Computers and Mathematics with Applications* 53(10), 1538-1560. (IF2007 0.72, ISSN: 0898-1221).
8. E. Viola, M. Dilena, F. Tornabene (2007) - Analytical and Numerical Results for Vibration Analysis of Multi-Stepped and Multi-Damaged Circular Arches, *Journal of Sound and Vibration* 299(1-2), 143-163. (IF2007 1.024, ISSN: 0022-460X).
9. E. Viola, L. Panzacchi, F. Tornabene (2007) - General Analysis and Application to Redundant Arches under Static Loading, *Construction and Building Materials* 21(5), 1129-1143. (IF2007 0.841, ISSN: 0950-0618).

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10. A. Marzani, F. Tornabene, E. Viola (2008) - Nonconservative Stability Problems via Generalized Differential Quadrature Method, *Journal of Sound and Vibration* 315(1-2), 176-196. (IF2008 1.364, ISSN: 0022-460X).
11. F. Tornabene, E. Viola (2008) - 2-D Solution for Free Vibrations of Parabolic Shells Using Generalized Differential Quadrature Method, *European Journal of Mechanics - A/Solids* 27(6), 1001-1025. (IF2008 1.674, ISSN: 0997-7538).

12. E. Viola, C. Boldrini, F. Tornabene (2008) - Non-singular term effect on the Fracture Quantities of a Crack in a Piezoelectric Medium, *Engineering Fracture Mechanics* 75(15), 4542-4567. (IF2008 1.713, ISSN: 0013-7944).

## **2009**

13. F. Tornabene (2009) - Free Vibration Analysis of Functionally Graded Conical, Cylindrical Shell and Annular Plate Structures with a Four-parameter Power-Law Distribution, *Computer Methods in Applied Mechanics and Engineering* 198(37-40), 2911-2935. (IF2009 1.806, ISSN: 0045-7825).
14. F. Tornabene, E. Viola (2009) - Free Vibration Analysis of Functionally Graded Panels and Shells of Revolution, *Meccanica* 44(3), 255-281. (IF2009 0.892, ISSN: 0025-6455).
15. F. Tornabene, E. Viola (2009) - Free Vibrations of Four-Parameter Functionally Graded Parabolic Panels and Shells of Revolution, *European Journal of Mechanics - A/Solids* 28(5), 991-1013. (IF2009 1.815, ISSN: 0997-7538).
16. F. Tornabene, E. Viola, D.J. Inman (2009) - 2-D Differential Quadrature Solution for Vibration Analysis of Functionally Graded Conical, Cylindrical Shell and Annular Plate Structures, *Journal of Sound and Vibration* 328(3), 259-290. (IF2009 1.414, ISSN: 0022-460X).
17. E. Viola, F. Tornabene (2009) - Free Vibrations of Three Parameter Functionally Graded Parabolic Panels of Revolution, *Mechanics Research Communications* 36(5), 587-594. (IF2009 1.085, ISSN: 0093-6413).

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18. F. Tornabene, A. Marzani, E. Viola, I. Elishakoff (2010) - Critical Flow Speeds of Pipes Conveying Fluid by the Generalized Differential Quadrature Method, *Advances in Theoretical and Applied Mechanics* 3(3), 121-138. (IF2010 -, ISSN: 1313-6550).

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19. F. Tornabene (2011) - Free Vibrations of Laminated Composite Doubly-Curved Shells and Panels of Revolution via the GDQ Method, *Computer Methods in Applied Mechanics and Engineering* 200(9-12), 931-952. (IF2011 2.651, ISSN: 0045-7825).
20. F. Tornabene (2011) - 2-D GDQ Solution for Free Vibrations of Anisotropic Doubly-Curved Shells and Panels of Revolution, *Composite Structures* 93(7), 1854-1876. (IF2011 2.24, ISSN: 0263-8223).
21. F. Tornabene (2011) - Free Vibrations of Anisotropic Doubly-Curved Shells and Panels of Revolution with a Free-Form Meridian Resting on Winkler-Pasternak Elastic Foundations, *Composite Structures* 94(1), 186-206. (IF2011 2.24, ISSN: 0263-8223).
22. F. Tornabene, A. Liverani, G. Caligiana (2011) - FGM and Laminated Doubly-Curved Shells and Panels of Revolution with a Free-Form Meridian: a 2-D GDQ Solution for Free Vibrations, *International Journal of Mechanical Sciences* 53(6), 446-470. (IF2011 1.231, ISSN: 0020-7403).

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23. F. Tornabene, A. Liverani, G. Caligiana (2012) - Laminated Composite Rectangular and Annular Plates: A GDQ Solution for Static Analysis with a Posteriori Shear and Normal Stress Recovery, *Composites Part B Engineering* 43(4), 1847-1872. (IF2012 2.143, ISSN: 1359-8368).
24. F. Tornabene, A. Liverani, G. Caligiana (2012) - Static Analysis of Laminated Composite Curved Shells and Panels of Revolution with a Posteriori Shear and Normal Stress Recovery Using Generalized Differential Quadrature Method, *International Journal of Mechanical Sciences* 61(1), 71-87. (IF2012 1.613, ISSN: 0020-7403).
25. F. Tornabene, A. Liverani, G. Caligiana (2012) - General Anisotropic Doubly-Curved Shell Theory: a Differential Quadrature Solution for Free Vibrations of Shells and Panels of Revolution with a Free-Form Meridian, *Journal of Sound and Vibration* 331(22), 4848-4869. (IF2012 1.613, ISSN: 0022-460X).

## 2013

26. A.J.M. Ferreira, E. Viola, F. Tornabene, N. Fantuzzi, A.M. Zenkour (2013) - Analysis of Sandwich Plates by Generalized Differential Quadrature Method, *Mathematical Problems in Engineering* Vol. 2013, Article ID 964367, 1-22, <http://dx.doi.org/10.1155/2013/964367>. (IF2013 1.082, ISSN: 1024-123X).
27. Y. Li, N. Fantuzzi, F. Tornabene (2013) - On Mixed Mode Crack Initiation and Direction in Shafts: Strain Energy Density Factor and Maximum Tangential Stress Criteria, *Engineering Fracture Mechanics* 109, 273-289. (IF2013 1.662, ISSN: 0013-7944).
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32. F. Tornabene, E. Viola (2013) - Static Analysis of Functionally Graded Doubly-Curved Shells and Panels of Revolution, *Meccanica* 48(4), 901-930. (IF2013 1.815, ISSN: 0025-6455).

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39. E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - On Static Analysis of Plane State Structures via GDQFEM and Cell Method, *CMES* 94(5), 419-456. (IF2013 1.183, ISSN: 1526-1492).

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40. N. Fantuzzi, F. Tornabene (2014) - Strong Formulation Finite Element Method for Arbitrarily Shaped Laminated Plates - I. Theoretical Analysis, *Advances in Aircraft and Spacecraft Science* 1(2), 124-142. (IF2013-, ISSN: 2287-528X).
41. N. Fantuzzi, F. Tornabene (2014) - Strong Formulation Finite Element Method for Arbitrarily Shaped Laminated Plates - II. Numerical Analysis, *Advances in Aircraft and Spacecraft Science* 1(2), 143-173. (IF2013 -, ISSN: 2287-528X).
42. N. Fantuzzi, F. Tornabene, E. Viola (2014) - Generalized Differential Quadrature Finite Element Method for Vibration Analysis of Arbitrarily Shaped Membranes, *International Journal of Mechanical Sciences* 79, 216-251. (IF2014 2.034, ISSN: 0020-7403).
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44. A.J.M. Ferreira, E. Carrera, M. Cinefra, E. Viola, F. Tornabene, N. Fantuzzi, A.M. Zenkour (2014) - Analysis of Thick Isotropic and Cross-Ply Laminated Plates by Generalized Differential Quadrature Method and a Unified Formulation, *Composites Part B Engineering* 58(1), 544-552. (IF2014 2.983, ISSN: 1359-8368).

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50. E. Viola, L. Rossetti, N. Fantuzzi, F. Tornabene (2014) - Static Analysis of Functionally Graded Conical Shells and Panels Using the Generalized Unconstrained Third Order Theory Coupled with the Stress Recovery, *Composite Structures* 112(1), 44-65. (IF2014 3.318, ISSN: 0263-8223).

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143. M. Nejati, A. Ghasemi-Ghalebahman, A. Soltanmaleki, R. Dimitri, F. Tornabene (2019) - Thermal Vibration Analysis of SMA Hybrid Composite Double-Curved Sandwich Panels, *Composite Structures* 224(1) 111035, 1-11. (IF2015 3.853, ISSN: 0263-8223).
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147. M. Mohammadi, M. Bamdad, K. Alambeigi, R. Dimitri, F. Tornabene (2019) - Electro-Elastic Response of Cylindrical Sandwich Pressure Vessels with Porous Core and Piezoelectric Face-Sheets, *Composite Structures* 225(1) 111119, 1-16. (IF2015 3.853, ISSN: 0263-8223).
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149. F. Tornabene, M. Baccocchi, N. Fantuzzi, J.N. Reddy (2019) - Multiscale Approach for Three-Phase CNT/Polymer/Fiber Laminated Nanocomposite Structures, *Polymer Composites* 40, E102-E126. (IF2016 2.234, ISSN: 1548-0569).
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151. F. Tornabene, N. Fantuzzi, M. Baccocchi (2019) - Refined Shear Deformation Theories for Laminated Composite Arches and Beams with Variable Thickness: Natural Frequency Analysis, *Engineering Analysis with Boundary Elements* 100, 24-47. (IF2016 1.721, ISSN: 0955-7997).

### **2.3.1.1 Editorials in International Journals**

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153. F. Tornabene (2017) - Journal of Composites Science: A New Journal for Composite Materials, Structures and Experiments, *Journal of Composites Science* 1(1), 1-2. (IF2015 -, ISSN: 2504-477X).

### **2.3.2 International Monographs**

154. E. Viola, F. Tornabene (2007) - Dynamical Analysis of Spherical Shell Structural Elements Using the First-order Shear Deformation Theory, *Mechanical Vibration: Where do we stand?*, CISM Courses and Lectures no. 488, 17-41, ed. by I. Elishakoff, Springer - Wien, New York.
155. F. Tornabene, N. Fantuzzi (2014) - *Mechanics of Laminated Composite Doubly-Curved Shell Structures. The Generalized Differential Quadrature Method and the Strong Formulation Finite Element Method*, Esculapio, Bologna. ISBN: 978-88-7488-687-6.
156. A.J.M. Ferreira, E. Viola, F. Tornabene (2015) - *International Conference on Shells, Plates and Beams* Esculapio, Bologna. ISBN: 978-88-7488-886-3. ISSN: 2421-2822.
157. A.J.M. Ferreira, A.M.A. Neves, E. Viola, F. Tornabene, N. Fantuzzi (2016) - *2nd International Conference on Mechanics of Composites*, Esculapio, Bologna. ISBN: 978-88-7488-963-1. ISSN: 2421-2822.

158. A.J.M. Ferreira, A.M.A. Neves, E. Viola, F. Tornabene, N. Fantuzzi (2016) - 19th International Conference on Composite Structures, Esculapio, Bologna. ISBN: 978-88-7488-977-8. ISSN: 2421-2822.
159. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2016) - Laminated Composite Doubly-Curved Shell Structures I. Differential Geometry. Higher-Order Structural Theories, Esculapio, Bologna. ISBN: 978-88-7488-957-0. ISSN: 2421-2822.
160. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2016) - Laminated Composite Doubly-Curved Shell Structures II. Differential and Integral Quadrature. Strong Formulation Finite Element Method, Esculapio, Bologna. ISBN: 978-88-7488-958-7. ISSN: 2421-2822.
161. A.J.M. Ferreira, E. Viola, F. Tornabene, N. Fantuzzi (2017) - 3rd International Conference on Mechanics of Composites, Esculapio, Bologna. ISBN: 978-88-9385-029-2. ISSN: 2421-2822.
162. F. Tornabene, N. Fantuzzi (2017) - Theory of Laminated Composite Doubly-Curved Shell Structures, Esculapio, Bologna. ISBN: 978-88-9385-001-8. ISSN: 2421-2822.
163. A.J.M. Ferreira, W. Larbi, J.-F. Deu, F. Tornabene, N. Fantuzzi (2017) - 20th International Conference on Composite Structures, Esculapio, Bologna. ISBN: 978-88-9385-041-4. ISSN: 2421-2822.
164. A.J.M. Ferreira, F. Tornabene, N. Fantuzzi, E. Viola (2018) - 21th International Conference on Composite Structures, Esculapio, Bologna. ISBN: 978-88-9385-079-7. ISSN: 2421-2822.
165. F. Tornabene, N. Fantuzzi, M. Baccocchi (2018) - DiQuMASPAB: Differential Quadrature for Mechanics of Anisotropic Shells, Plates, Arches and Beams. User Manual, Esculapio, Bologna. ISBN: 978-88-938-5063-6. ISSN: 2421-2822.
166. F. Tornabene, M. Baccocchi (2018) - Anisotropic Doubly-Curved Shells - Higher-Order Strong and Weak Formulations for Arbitrarily Shaped Shell Structures, Esculapio, Bologna. ISBN: 978-88-9385-080-3. ISSN: 2421-2822.

### **2.3.3 National Monographs**

167. F. Cesari, F. Tornabene (2011) - Esercizi di Meccanica delle Strutture: I Materiali Compositi, Pitagora, Bologna. ISBN: 88-371-1844-9.
168. F. Tornabene (2012) - Meccanica delle Strutture a Guscio in Materiale Composito. Il metodo Generalizzato di Quadratura Differenziale, Esculapio, Bologna. ISBN: 978-88-7488-527-5.
169. F. Tornabene, R. Dimitri (2015) - Stabilità dell'Equilibrio Elastico, Esculapio, Bologna. ISBN: 978-88-7488-845-0.
170. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Strutture a Guscio in Materiale Composito I. Geometria Differenziale. Teorie di Ordine Superiore, Esculapio, Bologna. ISBN: 978-88-7488-855-9. ISSN: 2421-2822.

171. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Strutture a Guscio in Materiale Composito II. Quadratura Differenziale e Integrale. Elementi Finiti in Forma Forte, Esculapio, Bologna. ISBN: 978-88-7488-856-6. ISSN: 2421-2822.
172. F. Tornabene (2017) - Teoria delle Strutture a Guscio in Materiale Composito, Esculapio, Bologna. ISBN: 978-88-9385-000-1. ISSN: 2421-2822.

### **2.3.4 Publications in International Conferences**

173. E. Viola, L. Panzacchi, F. Tornabene (2004) - Structural Analysis of Historical Masonry Arches, International Conference of Restoration, Recycling and Rejuvenation Technology for Engineering and Architecture Application (RRTEA2004), Cesena, Italy, 7-11 June 2004. In: G.C. Sih et L. Nobile (eds.), Restoration, Recycling and Rejuvenation Technology for Engineering and Architecture Application, 358-369.
174. F. Tornabene, E. Viola (2005) - The Effect of Cracks on the Dynamic Response of Circular Arches with Varying Cross-section by G.D.Q.E. Technique, IV<sup>o</sup> International Conference on Fracture and Damage Mechanics (FDM2005), Mallorca, Spain, 12-14 July 2005. In: M.H. Aliabadi et al. (eds.), Advances in Fracture and Damage Mechanics IV, 295-300.
175. F. Tornabene, E. Viola (2006) - Differential Quadrature Solution for Parabolic Structural Shell Elements, III<sup>o</sup> European Conference on Computational Mechanics (ECCM2006), Lisbon, Portugal, 5-8 June 2006. In: C.A. Mota Soares et al. (eds.), Solids, Structures and Coupled Problems in Engineering, 393.
176. F. Tornabene, F. Ubertini, E. Viola (2007) - The Generalized Differential Quadrature Method for Solving Initial-value Problems in Linear Dynamics, International Symposium on Recent Advances in Mechanics, Dynamical Systems and Probability Theory (MDP 2007), Palermo, Italy, 3-6 June 2007.
177. F. Tornabene, E. Viola (2008) - A Generalized Differential Quadrature Solution for Laminated Composite Shells of Revolution, VIII<sup>o</sup> World Congress on Computational Mechanics (WCCM2008) - V<sup>o</sup> European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS2008), Venezia, Italy, 30 June - 4 July 2008.
178. F. Tornabene, S. Abrate (2012) - Free Vibrations of Doubly Curved Functionally Graded Shells, International Conference on Mechanics of Nano, Micro and Macro Composite Structures (ICMNMCS2012), Torino, Italy, 18-20 June 2012. In: A. J. M. Ferreira, E. Carrera (eds.), Mechanics of Nano, Micro and Macro Composite Structures.
179. F. Tornabene, A. Liverani, G. Caligiana (2012) - Static Analysis with Normal and Shear Stress Recovery for Anisotropic Doubly-Curved Shell Panels Using the Differential Geometry and the GDQ Method, International Conference on Mechanics of Nano, Micro and Macro Composite Structures (ICMNMCS2012), Torino, Italy, 18-20 June 2012. In: A. J. M. Ferreira, E. Carrera (eds.), Mechanics of Nano, Micro and Macro Composite Structures.



180. N. Fantuzzi, F. Tornabene, E. Viola (2013) - Free Vibrations of Functionally Graded Cracked Plates of Arbitrary Shape via GDQFEM, 6th ECCOMAS Thematic Conference on Smart Structures and Materials (SMART2013), Torino, Italy, 24-26 June 2013.
181. F. Tornabene, N. Fantuzzi, E. Viola (2013) - Layer-Wise and Equivalent-Single-Layer Theories for Laminated Composite Doubly-Curved Shells and Panels Using Differential Geometry and GDQ Method, 17th International Conference on Composite Structures (ICCS17), Porto, Portugal, 17-21 June 2013.
182. F. Tornabene, N. Fantuzzi, E. Viola (2013) - Dynamic and Static Analysis of Laminated Doubly-Curved Shells and Panels Using Layer-Wise and Equivalent-Single-Layer Theories via GDQ Method, The 21st International Conference on Composite/Nano Engineering (ICCE21), Tenerife, Spain, 21-27 July 2013.
183. F. Tornabene, N. Fantuzzi, E. Viola (2013) - Vibration Analysis of Laminated Doubly-Curved Shells and Panels Using Higher-Order Equivalent-Single-Layer and Layer-Wise Theories, 9th International Symposium on Vibrations of Continuous Systems (ISVCS13), Courmayeur, Italy, 22-26 July 2013.
184. E. Viola, F. Tornabene, N. Fantuzzi (2013) - Generalized Differential Quadrature Finite Element Method for Arbitrary Shaped Composite Structures, 17th International Conference on Composite Structures (ICCS17), Porto, Portugal, 17-21 June 2013.
185. E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - On Static Analysis of Composite Plane State Structures via GDQFEM and Cell Method, International Conference on Computational and Experimental Engineering and Sciences (ICCES2013), Seattle, USA, 24-28 May 2013.
186. E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - GDQFEM and Cell Method Numerical Simulations of Continuous Media with Cracks and Discontinuities, International Conference on Computational and Experimental Engineering and Sciences (ICCES2013), Seattle, USA, 24-28 May 2013.
187. E. Viola, F. Tornabene, E. Ferretti, N. Fantuzzi (2013) - Soft Core Plane State Structures Under Static Loads Using GDQFEM and Cell Method, International Conference on Computational and Experimental Engineering and Sciences (ICCES2013), Seattle, USA, 24-28 May 2013.
188. N. Fantuzzi, F. Tornabene, E. Viola (2014) - Multi-Layered Structures of Arbitrary Shape via Generalized Differential Quadrature Finite Element Method, 1st International Conference on Mechanics of Composites (MECHCOMP2014), Stony Brook, USA, 8-12 June 2014.
189. N. Fantuzzi, F. Tornabene, E. Viola (2014) - Dynamic and Static Behavior of Arbitrarily Shaped Laminated Composite Plates via Strong Formulation Finite Element Method, The 22th International Conference on Composite/Nano Engineering (ICCE22), Malta, 13-19 July 2014.
190. E. Viola, F. Tornabene, N. Fantuzzi (2014) - Stress and Strain Recovery of Laminated Composite Doubly-Curved Shells and Panels Using Higher-Order Formulations, Mechanics of Masonry Structures Strengthened with Composite Materials, Modeling, Testing, Design, Control (MuRiCo4), Ravenna, Italy, 9-11 September 2014.

191. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - The Strong Formulation Finite Element Method Applied to Structural Mechanics Problems, GAMM 86th Annual Scientific Conference (GAMM2015), Lecce, Italy, 23-27 March 2015.
192. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Advanced Applications for Laminated Doubly-Curved Shells with Variable Curvatures, 18th International Conference on Composite Structures (ICCS18), Porto, Portugal, 15-18 June 2015.
193. N. Fantuzzi, F. Tornabene, E. Viola (2015) - Strong Formulation Finite Element Method for Arbitrarily Shaped Composite Structures, 18th International Conference on Composite Structures (ICCS18), Porto, Portugal, 15-18 June 2015.
194. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Computational Models for Laminated Doubly-Curved Shells with Variable Radii of Curvatures Using Weak and Strong Formulations, 9th European Solid Mechanics Conference (ESMC2015), Madrid, Spain, 6-10 July 2015.
195. N. Fantuzzi, M. Baccocchi, F. Tornabene, E. Viola (2015) - Static and Dynamic Analyses of Arbitrarily Shaped Laminated Composite Structures, International Conference on Shells, Plates and Beams (SPB2015), Bologna, Italy, 9-11 September 2015.
196. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Higher-Order Theories for the Structural Analysis of Doubly-Curved Shells and Panels Made of Innovative Materials, International Conference on Shells, Plates and Beams (SPB2015), Bologna, Italy, 9-11 September 2015.
197. N. Fantuzzi, F. Tornabene, M. Baccocchi, E. Viola (2016) - Moving Least Squares Differential Quadrature Based on Radial Basis Functions for the Vibration Analysis of Beams, Plates and Shells, International Conference on Vibrations and Buckling 2016 (VibBuck2016), Porto, Portugal, 7-9 March 2016.
198. N. Fantuzzi, F. Tornabene, M. Baccocchi, E. Viola (2016) - Mechanics of Arbitrarily Shaped Composite Structures Using Isogeometric Mapping, 2nd International Conference on Mechanics of Composites (MECHCOMP2), Porto, Portugal, 11-14 July 2016.
199. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2016) - Higher-Order Theories for the Structural Analysis of Doubly-Curved Shells with Variable Mechanical Properties, 2nd International Conference on Mechanics of Composites (MECHCOMP2), Porto, Portugal, 11-14 July 2016.
200. N. Fantuzzi, F. Tornabene, M. Baccocchi, E. Viola (2016) - Isogeometric Analysis of Composite Structures Through Mapping Using Blending Functions, 19th International Conference on Composite Structures (ICCS19), Porto, Portugal, 5-9 September 2016.
201. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2016) - A General Formulation Based on Higher-Order Theories for the Static and Dynamic Analysis of Doubly-Curved Structures with Variable Mechanical and Geometrical Properties, 19th International Conference on Composite Structures (ICCS19), Porto, Portugal, 5-9 September 2016.

202. N. Fantuzzi, F. Tornabene, M. Baccocchi, R. Dimitri (2016) - Free Vibration Analysis of Functionally Graded Carbon Nanotube-Reinforced Composite Plates with Arbitrary Domains and Discontinuities, Multiscale Innovative Materials and Structures (MIMS16), Cetara, Italy, 28-30 October 2016.
203. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2016) - Static and Dynamic Behavior of Functionally Graded Carbon Nanotube-Reinforced Laminated Composite Doubly-Curved Shells: Higher-Order Structural Approaches, Multiscale Innovative Materials and Structures (MIMS16), Cetara, Italy, 28-30 October 2016.
204. E. Viola, F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - Numerical Investigation of Composite Materials with Inclusions and Discontinuities, Mechanics of Masonry Structures Strengthened with Composite Materials, Modeling, Testing, Design, Control (MuRiCo5), Bologna, Italy, 28-30 June 2017.
205. N. Fantuzzi, F. Tornabene, M. Baccocchi, E. Viola (2017) - Mechanics of Structural Components by Using a Numerical Approach Based on Blending Functions Mapping and a Strong Formulation, 3rd International Conference on Mechanics of Composites (MECHCOMP3), Bologna, Italy, 4-7 July 2017.
206. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2017) - Investigation on the Structural Response of Plates and Shells with Variable Mechanical Properties: Modeling of the Damage, 3rd International Conference on Mechanics of Composites (MECHCOMP3), Bologna, Italy, 4-7 July 2017.
207. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2017) - Nanocomposite Plates and Shells Reinforced by Agglomerated Carbon Nanotubes: Static and Dynamic Analysis, The 25th International Conference on Composite/Nano Engineering (ICCE25), Roma, Italy, 16-22 July 2017.
208. N. Fantuzzi, L. Leonetti, P. Trovalusci, F. Tornabene (2017) - Some Novel Numerical Applications of Cosserat Continua, 8th International Conference on Computational Methods (ICCM2017), Guilin, China, 25-29 July 2017.
209. N. Fantuzzi, F. Tornabene, M. Baccocchi, E. Viola (2017) - Composite Structures of Arbitrary Shape by Using Nonlinear Isogeometric Mapping, 20th International Conference on Composite Structures (ICCS20), Paris, France, 4-7 September 2017.
210. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2017) - Mechanical Behavior of Damaged Laminated Composites Plates and Shells: Higher-Order Shear Deformation Theories, 20th International Conference on Composite Structures (ICCS20), Paris, France, 4-7 September 2017.
211. F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - Isogeometric Analysis of Arbitrarily Shaped Structures: A Numerical Approach Based on the Strong Formulation, V International Conference on Isogeometric Analysis (IGA2017), Pavia, Italy, 11-13 September 2017.
212. F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - A Numerical Approach Based on the GDQ Method for the Linear Static Analysis of Laminated Composite Shells Subjected to Point and Line Loads, IV ECCOMAS Young Investigator Conference (YIC2017), Milano, Italy, 13-15 September 2017.

213. F. Tornabene, N. Fantuzzi, M. Baccocchi (2017) - How to Easily Model Doubly Curved Shells with Variable Radii of Curvature, The 11th Conference on Shell Structures: Theory and Applications (SSTA11), Gdańsk, Poland, 11-13 October 2017.
214. F. Tornabene, N. Fantuzzi, M. Baccocchi (2018) - Modelling of Damaged Laminated and Sandwich Shell Structures by means of Higher-order Shear Deformation Theories, 10th European Solid Mechanics Conference (ESMC2018), Bologna, Italy, 2-6 July 2018.
215. N. Fantuzzi, M. Baccocchi, F. Tornabene (2018) - Peculiar Convergence and Accuracy for Laminated Moderately Thick Plates of Arbitrary Shape in Free Vibrations, 4th International Conference on Mechanics of Composites (MECHCOMP4), Madrid, Spain, 9-12 July 2018.
216. F. Tornabene, M. Baccocchi, N. Fantuzzi (2018) - Critical Velocity Evaluation of Rotating Laminated Composite Doubly-Curved Shells, 4th International Conference on Mechanics of Composites (MECHCOMP4), Madrid, Spain, 9-12 July 2018.
217. R. Dimitri, F. Tornabene (2018) - Numerical Study of the Mixed-Mode Delamination of Generally-Shaped Composite Interfaces, 21th International Conference on Composite Structures (ICCS21), Bologna, Italy, 4-7 September 2018.
218. N. Fantuzzi, M. Baccocchi, F. Tornabene (2018) - Free Vibration Problem of Composite Plates of Arbitrary Shape: Where Do We Stand?, 21th International Conference on Composite Structures (ICCS21), Bologna, Italy, 4-7 September 2018.
219. F. Tornabene (2018) - Higher-Order Formulations for the Mechanical Analysis of Doubly-Curved Shell Structures Made of Advanced and Innovative Materials, 21th International Conference on Composite Structures (ICCS21), Bologna, Italy, 4-7 September 2018.
220. R. Dimitri, F. Tornabene (2018) - Advanced Modeling for the Mixed-Mode Delamination of Composite Specimens, 9th International Conference on Computational Methods (ICCM2018), Roma, Italy, 6-10 August 2018.
221. L. Leonetti, N. Fantuzzi, P. Trovalusci, F. Tornabene (2018) - Mechanical Behavior of Orthotropic Micropolar Continua Subjected to Localized Loads, 9th International Conference on Computational Methods (ICCM2018), Roma, Italy, 6-10 August 2018.
222. F. Tornabene, N. Fantuzzi, M. Baccocchi (2018) - An Innovative Numerical Approach for the Mechanical Analysis of Damaged Laminated Composite Structures, 9th International Conference on Computational Methods (ICCM2018), Roma, Italy, 6-10 August 2018.
223. R. Dimitri, F. Tornabene (2019) - Numerical Debonding Modelling of Curved Composite Specimens in Mixed-Mode Condition, International Conference on Nonlinear Solid Mechanics (ICoNSoM2019), Rome, Italy, 16-19 June 2019.
224. R. Dimitri, F. Tornabene (2019) - Vibration Analysis of Composite Laminated and Latticed Structures Based on Higher-Order Formulations, International Conference on Nonlinear Solid Mechanics (ICoNSoM2019), Rome, Italy, 16-19 June 2019.

225. R. Torre, S. Brischetto, F. Tornabene - Analytical and Semi-Analytical 3D Shell Models for Composite Structures, 5th International Conference on Mechanics of Composites (MECHCOMP5), Lisbon, Portugal, 1-4 July 2019.
226. F. Tornabene, R. Dimitri, S. Brischetto (2019) - Higher-Order Formulation for the Mechanical Analysis of Laminated and Latticed Shells with Complex Geometries and Materials, International Conference on Boundary Element Techniques (BETEQ2019), Palermo, Italy, 22-24 July 2019.
227. R. Torre, S. Brischetto, F. Tornabene - Cylindrical Bending in Composite Structures by Means of Analytical and Numerical 2D/3D Shell Models, 22th International Conference on Composite Structures (ICCS22), Wuhan, China, 31-3 November 2019.

### **2.3.5 Publications in National Conferences**

228. E. Viola, F. Tornabene (2006) - Free Vibration Analysis of Shells of Revolution Using GDQ Method, XVI° Convegno Italiano di Meccanica Computazionale (GIMC 2006), Bologna, Italy, 26-28 June 2006. In: F. Ubertini et al. (eds.), Atti XVI° Convegno Italiano di Meccanica Computazionale, 93.
229. C. Boldrini, F. Tornabene, E. Viola (2007) - Analytical Formulation by Means of Complex Potentials of Crack Models in a Piezoelectric Material, Convegno Italiano “Materiali e Metodi Innovativi nell’Ingegneria Strutturale”, Catania, Italy, 4-6 July 2007. In: A. Badalà et al. (eds.), Materiali e Metodi Innovativi nell’Ingegneria Strutturale, 241-256.
230. F. Tornabene, E. Viola (2007) - Free Vibrations of Laminated Composite Hyperbolic Shells of Revolution Via GDQ Method, Convegno Italiano “Materiali e Metodi Innovativi nell’Ingegneria Strutturale”, Catania, Italy, 4-6 July 2007. In: A. Badalà et al. (eds.), Materiali e Metodi Innovativi nell’Ingegneria Strutturale, 257-272.
231. F. Tornabene, E. Viola (2007) - Free Vibration Analysis of Functionally Graded Doubly Curved Shell Structures Using GDQ Method, XVIII° Convegno Italiano dell’Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 2007), Brescia, Italy, 11-14 September 2007. In: A. Carini et al. (eds.), XVIII° Congresso AIMETA di Meccanica Teorica e Applicata, 298-299.
232. F. Tornabene (2011) - Shear and Normal Stress Recovery for Anisotropic Shells and Panels of Revolution via the GDQ Method, XX° Convegno Italiano dell’Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 2011), Bologna, Italy, 12-15 September 2011. In: F. Ubertini et al. (eds.), XX° Congresso AIMETA di Meccanica Teorica e Applicata, 281.
233. Tornabene, N. Fantuzzi, E. Viola (2013) - General Higher-Order Equivalent Single Layer and Layer Wise Theories for Laminated Composite Shells and Panels Using GDQ Method, XXI° Convegno Italiano dell’Associazione Italiana di Meccanica Teorica e Applicata (AIMETA2013), Torino, Italy, 17-20 September 2013.

234. E. Viola, F. Tornabene, N. Fantuzzi (2013) - Static Analysis of Arbitrarily Shaped Composite Plates via GDQFEM, XXI° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata (AIMETA2013), Torino, Italy, 17-20 September 2013.
235. F. Tornabene, N. Fantuzzi, M. Baccocchi (2014) - The Strong Formulation Finite Element Method: Stability and Accuracy, XX° Convegno Italiano di Meccanica Computazionale - VII Riunione del Gruppo Materiali AIMETA (GIMC-GMA2014), Cassino, Italy, 11-13 June 2014.
236. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2015) - Static and Dynamic Analyses of Doubly-Curved Composite Thick Shells with Variable Radii of Curvatures, XXII° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata (AIMETA2015), Genova, Italy, 14-17 September 2015.
237. E. Viola, F. Tornabene, N. Fantuzzi, M. Baccocchi (2015) - Structural Mechanics Applications using Strong Formulation Finite Element Method, XXII° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata (AIMETA2015), Genova, Italy, 14-17 September 2015.
238. F. Tornabene, N. Fantuzzi, M. Baccocchi (2015) - Advanced Laminated Composite Applications for Doubly-Curved Shell Structural Components with Variable Curvature, XXIII° Conference of the Italian Association of Aeronautics and Astronautics (AIDAA2015), Torino, Italy, 17-19 November 2015.
239. R. Dimitri, N. Fantuzzi, F. Tornabene, G. Zavarise (2016) - A Comparative SFEM- and IGA-Based Numerical Prediction of the Stress Concentration Factor in Plates with Discontinuities, XXI° Convegno Italiano di Meccanica Computazionale - VIII Riunione del Gruppo Materiali AIMETA (GIMC-GMA2016), Lucca, Italy, 27-29 June 2016.
240. F. Tornabene, N. Fantuzzi, M. Baccocchi (2016) - Finite Element Method Based on a Strong Formulation Isogeometric Analysis, XXI° Convegno Italiano di Meccanica Computazionale - VIII Riunione del Gruppo Materiali AIMETA (GIMC-GMA2016), Lucca, Italy, 27-29 June 2016.
241. F. Tornabene, N. Fantuzzi, M. Baccocchi, E. Viola (2017) - Mechanical Behavior of Laminated Composite Shells with Arbitrary Domains: Comparison Between Weak and Strong Formulations, XXIII° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata (AIMETA2017), Salerno, Italy, 4-7 September 2015.
242. F. Tornabene, M. Baccocchi, N. Fantuzzi (2018) - Strong and Weak Formulations for the Analysis of Arbitrarily Shaped Laminated Composite Structures, XXII° Convegno Italiano di Meccanica Computazionale - IX Riunione del Gruppo Materiali AIMETA (GIMC-GMA2018), Ferrara, Italy, 13-14 September 2018.
243. L. Leonetti, N. Fantuzzi, P. Trovalusci, F. Tornabene (2018) - The Effect of Micro-Polar Rotation in 2D Cosserat Solids, XXII° Convegno Italiano di Meccanica Computazionale - IX Riunione del Gruppo Materiali AIMETA (GIMC-GMA2018), Ferrara, Italy, 13-14 September 2018.

## 2.4 Editorial Board Activities and Review

### 2.4.1 Editor-in-Chief of International Journals

- **Editor-In-Chief** of International Journals:

1. *Curved and Layered Structures* [ISSN: 2353-7396] (from 2014 to Today).
2. *Journal of Composites Science* [ISSN: 2504-477X] (from January 2017 to Today).

- **Co-Editor** of International Journals:

1. *Science and Engineering of Composite Materials* [ISSN: 2191-0359] (from December 2018 to Today).
2. *The Open Civil Engineering Journal* [ISSN: 1874-1495] (from August 2017 to Today).

- **Editor** of International Journals:

3. *Heliyon* [ISSN: 2405-8440] (from January 2018 to Today).
4. *Mathematical Problems in Engineering* [ISSN: 1024-123X] (from December 2015 to Today).

### 2.4.2 Editor-In-Chief of International Book Series

- **Editor-In-Chief** of International Book Series:

1. *Structural and Computational Mechanics Book Series* [ISSN: 2421-2822] (from 2015 to Today).

### 2.4.3 Guest Editor Activities

- **Guest Editor** of the following Special Issues:

1. Applications of Unified Formulation and Advanced Theories Using Several Numerical Approaches, *Mechanics of Advanced Materials and Structures* 23(9) [ISSN: 1537-6494] (2015-2016).
2. Applications of Generalized Differential and Integral Quadrature Methods, *Applied Sciences* [ISSN: 2076-3417] (2016-2017).
3. Functionally Graded Material (FGM) and Functionally Graded Carbon Nanotube (FG-CNT) Reinforced Composites, *Applied Sciences* [ISSN: 2076-3417] (2017-2018).
4. Mechanics of Innovative Materials in Engineering Applications, *Journal of Composites Science* [ISSN: 2504-477X] (2018-2019).
5. Advanced Theoretical and Computational Methods for Complex Materials and Structures, *Applied Sciences* [ISSN: 2076-3417] (2018-2019).
6. Structural Mechanics of Composite Materials and Structures, *Molecules* [ISSN: 1420-3049] (2019-2020).
7. Advanced Mechanical Modeling of Nano-Materials and Nano-Structures, *Nanomaterials* [ISSN: 1420-3049] (2019-2020).

#### **2.4.4 Member of the Editorial Board of International Journals**

- Member of the **Editorial Board** of the following journals:

1. Composite Materials and Engineering (from April 2019 to Today).
2. Eureka: Physics and Engineering (from April 2019 to Today).
3. Molecules (from April 2019 to Today).
4. Emerging Science Journal (from January 2019 to Today).
5. Composite Materials Research (from January 2019 to Today).
6. Mechanics of Advanced Composite Structures (from January 2019 to Today).
7. Science and Engineering of Composite Materials (from December 2018 to Today).
8. Journal of Modern Mechanical Engineering and Technology (from October 2018 to Today).
9. Open Engineering (from October 2018 to Today).
10. International Journal of Engineering, Mathematics and Physics (from September 2018 to Today).
11. Applied Sciences (from August 2018 to Today).
12. Sci - Open Access Journal (from August 2018 to Today).
13. ALKU Journal of Science (from August 2018 to Today).
14. Eastern-European Journal of Enterprise Technologies (from July 2018 to Today).
15. Modern Materials Science and Technology (from June 2018 to Today).
16. Journal of Engineering (from 2017 to Today).
17. International Journal of Engineering and Applied Sciences (from 2017 to Today).
18. Composite Structures (from 2016 to Today).
19. Technologies (from 2016 to Today).
20. Journal of Applied and Computational Mechanics (from 2016 to Today).
21. Journal of Composites Science (from 2016 to Today).
22. Advanced Materials and Technologies (from 2015 to Today).
23. Heliyon (from 2014 to Today).
24. International Scholarly Research Notices (from 2014 to Today).
25. Mathematical Problems in Engineering (from 2014 to Today).
26. ISRN Mechanical Engineering (from 2013 to 2017).
27. Journal of Computational Engineering (from 2013 to 2017).
28. Advances in Aircraft and Spacecraft Science (from 2014 to 2016).

#### **2.4.5 Reviewer for International Journals**

1. Acta Mechanica
2. Actuators
3. Advances in Acoustics and Vibration
4. Advances in Applied Mathematics and Mechanics



5. Advances in Civil Engineering
6. Advances in Computational Design
7. Advances in Engineering Software
8. Advances in Mechanical Engineering
9. Advances in Nano Research
10. Advances in Polymer Technology
11. Advances in Structural Engineering
12. Advances in Technology Innovation
13. Aerospace Science and Technology
14. Aerotecnica Missili e Spazio
15. AIAA Journal
16. Ain Shams Engineering Journal
17. Aircraft Engineering and Aerospace Technology
18. American Journal of Analytical Chemistry
19. Annals of Solid and Structural Mechanics
20. Applied Acoustics
21. Applied Mathematical Modelling
22. Applied Mathematics and Computation
23. Applied Mathematics Letters
24. Applied Mechanics Reviews
25. Applied Physics A
26. Applied Polymer Science
27. Applied Science
28. Archive of Mechanical Engineering
29. Archives of Civil and Mechanical Engineering
30. Archives of Mechanics
31. Archives of Trauma Research
32. Asian Research Journal of Mathematics
33. Biomaterials and Biomedical Engineering
34. British Journal of Mathematics and Computer Science
35. Chaos Solitons and Fractals
36. Chinese Journal of Aeronautics
37. Ciência and Tecnologia dos Materiais
38. Composite Structures
39. Composites Communications
40. Composites Part A

41. Composites Part B
42. Composites Science and Technology
43. Computational and Applied Mathematics
44. Computational and Nonlinear Dynamics
45. Computational Materials Science
46. Computational Methods in Engineering Science and Mechanics
47. Computers and Concrete
48. Computer and Structures
49. Computer and Mathematics with Applications
50. Computer Methods in Applied Mechanics and Engineering
51. Computer Modeling for Engineering and Sciences
52. Construction and Building Materials
53. Defence Technology
54. Dynamics and Vibroacoustics
55. Earthquake Engineering and Engineering Vibration
56. Earthquakes and Structures
57. Engineering Analysis with Boundary Elements
58. Engineering Computations
59. Engineering Failure Analysis
60. Engineering Fracture Mechanics
61. Engineering Journals
62. Engineering Science and Technology
63. Engineering Structures
64. Engineering Structures and Materials
65. Engineering with Computers
66. Environmental Engineering and Management Journal
67. European Journal of Mechanics A/Solids
68. European Journal of Pure and Applied Mathematics
69. Experimental Mechanics
70. Finite Elements in Analysis and Design
71. Frontiers in Built Environment
72. Frontiers of Mechanical Engineering
73. Geomechanics and Engineering
74. Heliyon
75. IEEE Transactions on Systems, Man and Cybernetics
76. Indian Journal of Engineering and Materials Sciences

77. Indian Journal of Physics
78. International Journal for Multiscale Computational Engineering
79. International Journal for Numerical Methods in Engineering
80. International Journal of Acoustics and Vibration
81. International Journal of Advanced and Applied Sciences
82. International Journal of Advanced Structural Engineering
83. International Journal of Aeronautical and Space Sciences
84. International Journal of Applied Electromagnetics and Mechanics
85. International Journal of Applied Mechanics
86. International Journal of Computational Materials Science and Engineering
87. International Journal of Computational Methods
88. International Journal of Damage Mechanics
89. International Journal of Engineering Science and Technology
90. International Journal of Mechanical and Materials Engineering
91. International Journal of Mechanical Sciences
92. International Journal of Mechanics and Materials in Design
93. International Journal of Non-Linear Mechanics
94. International Journal of Smart and Nano Materials
95. International Journal of Solids and Structures
96. International Journal of Structural Stability and Dynamics
97. International Journal of Thermal Sciences
98. International Journal of Vehicle Noise and Vibration
99. Inverse Problems in Science and Engineering
100. Iranian Journal of Science and Technology Transactions A Science
101. Iranian Journal of Science and Technology Transactions of Mechanical Engineering
102. International Scholarly Research Notices
103. Journal of Aeronautics and Aerospace Engineering
104. Journal of Aerospace Engineering
105. Journal of Applied and Computational Mechanics
106. Journal of Applied Mechanical Engineering
107. Journal of Bionic Engineering
108. Journal of Civil and Environmental Engineering
109. Journal of Composite Materials
110. Journal of Computational Acoustics
111. Journal of Computational and Nonlinear Dynamics
112. Journal of Computational Engineering and Physical Modeling

113. Journal of Computational Science
114. Journal of Constructional Steel Research
115. Journal of Engineering
116. Journal of Engineering and Applied Sciences
117. Journal of Engineering Mathematics
118. Journal of Engineering Mechanics
119. Journal of Engineering and Applied Sciences
120. Journal of Experimental and Theoretical Artificial Intelligence
121. Journal of Low Frequency Noise, Vibration & Active Control
122. Journal of Intelligent Material Systems and Structures
123. Journal of Materials
124. Journal of Materials Design and Applications
125. Journal of Mechanical Engineering Science
126. Journal of Mechanical Science and Technology
127. Journal of Mechanics
128. Journal of Mechanics of Materials and Structures
129. Journal of Physics and Chemistry of Solids
130. Journal of Sandwich Structures and Materials
131. Journal of Sound and Vibration
132. Journal of Statistics and Mathematical Sciences
133. Journal of Structures
134. Journal of Testing and Evaluation
135. Journal of the Brazilian Society of Mechanical Sciences and Engineering
136. Journal of The Institution of Engineers (India) Series C
137. Journal of Vibration and Acoustics
138. Journal of Vibration and Control
139. Journal of Zhejiang University Science A
140. Latin American Journal of Solids and Structures
141. Karbala International Journal of Modern Science
142. KSCE Journal of Civil Engineering
143. Materials
144. Materials and Design
145. Materials and Structures
146. Materials Performance and Characterization
147. Materials Research
148. Materials Science

149. Mathematical Biosciences and Engineering
150. Mathematical Methods in Applied Sciences
151. Mathematical Problems in Engineering
152. Measurement
153. Measurement Science Review
154. Meccanica
155. Mechanical Sciences
156. Mechanical Systems and Signal Processing
157. Mechanics Based Design of Structures and Machines
158. Mechanics of Advanced Composite Structures
159. Mechanics of Advanced Material and Structures
160. Mechanics Research Communications
161. Micro and Nano Letters
162. Microsystem Technologies
163. Molecules
164. Multidiscipline Modeling in Materials and Structures
165. Nanomaterials
166. Nonlinear Dynamics
167. Nonlinear Engineering
168. Numerical Algorithms
169. Ocean Engineering
170. Open Journal of Composite Materials
171. Periodica Polytechnica Mechanical Engineering
172. Physica E
173. Physica Scripta
174. Plos One
175. Polymer Composites
176. Polymer Testing
177. Probabilistic Engineering Mechanics
178. Procedia Engineering
179. Proceeding Review
180. Proceedings of the Royal Society A
181. Research on Engineering Structures and Materials
182. Results in Physics
183. Sadhana - Academy Proceedings in Engineering Science
184. Science and Engineering of Composite Materials

185. Scientia Iranica
186. Scientific Reports
187. Scientific Research
188. Shock and Vibration
189. Simulation Modelling Practice and Theory
190. Smart Structures and Systems
191. Soils and Foundations
192. Songklanakarin Journal of Science and Technology
193. Springer Nature Applied Sciences
194. Springer Plus
195. Steel and Composite Structures
196. Structural and Multidisciplinary Optimization
197. Structural Engineering and Mechanics
198. Technical Sciences
199. The Arabian Journal for Science and Engineering
200. The European Physical Journal Plus
201. The Open Civil Engineering Journal
202. Theoretical and Applied Fracture Mechanics
203. Theoretical and Applied Mechanics Letters
204. Thin Solid Films
205. Thin-Walled Structures
206. Transactions of the Canadian Society for Mechanical Engineering
207. Transactions on Industrial Electronics
208. Waves in Random and Complex Media
209. World Journal of Engineering
210. ZAMM - Zeitschrift fuer Angewandte Mathematik und Mechanik

***Overall reviews done since 2009 to Today***

- reviews 2009: 2
- reviews 2011: 1
- reviews 2012: 48
- reviews 2013: 81
- reviews 2014: 154
- reviews 2015: 149
- reviews 2016: 306

- reviews 2017: 319
- reviews 2018: 391
- reviews 2019: 206 (up to date)

Overall reviews done: 1657

#### **2.4.6 Reviewer for Research Projects**

Reviewer for PRIN Projects - MIUR (from 2014 to Today).

### **2.5 Partecipation to Research Projects**

**Partecipation to the National Scientific Research Program (PRIN2007)** entitled: “Numerical Modelling of Ultrasonic Guided Wave in Composites Multilayered Bonded Structures”. Request of co-financing (DM n. 1175, 18 september 2007) Year 2007, Prot. 2007SZSZ7L\_002. Scientific Coordinator: Prof. Maiorana Carmelo. Manager of the Research Unit: Prof. Erasmo Viola.

**“SIR” Program, Order 23 January 2014 prot. N. 197. Protocol: RBSI144U0.** *Magneto-Piezo-Thermo-Elastic Composite Cracked Plate and Shell Models Applied to Aerospace, Naval, Civil and Mechanical Engineering Using a Higher-Order Unified Formulation.* Principal Investigator: Nicholas Fantuzzi, Alma Mater Studiorum University of Bologna. Permanent employees: Erasmo Viola, Francesco Tornabene, Alma Mater Studiorum University of Bologna. (Not Financed).

**Principal Investigator of the National Scientific Research Program (PRIN2015)** entitled: “*3D Printing Manufacturing Technology for Advanced FGM and Composite Structures used in Aerospace, Civil and Mechanical Engineering: Numerical and Experimental Analyses*”. Request of financing (DD n. 2488, 4 november 2015) Anno 2015, Prot. 2015ZTBH32. Coordinatore Scientifico: Prof. Francesco Tornabene. Manager of the Research Unit: Prof. Francesco Tornabene. (Not Financed).

**Principal Investigator and Beneficiary of FFABR2017 - ANVUR n. 20/2017, 15 June 2017.** Scientific Coordinator: Prof. Francesco Tornabene. Manager of the Research Unit: Prof. Francesco Tornabene.

**Principal Investigator of the National Scientific Research Program (PRIN2017)** entitled: *Mechanical properties and Experimental and Numerical analysis of doubly-curved free-form Structures manufactured by MEANS of 3D printed fused deposition modelling technology – byMEANSof3D*”. Request of financing (DD n. 3728, 27 December 2017) Year 2017, Prot. 2017YPYTER. Scientific Coordinator: Prof. Francesco Tornabene. Manager of the Research Unit: Prof. Francesco Tornabene. (Admitted but Not Financed).

## 2.6 Participation to Contracts and Agreements

**Agreement between Tacchificio Monti and University of Bologna.** Assistance to the rearrangement of the manufacturing process with reference to the precautionary process, simulation of tests for the verification of the products and introduction of an ERP system for the correct management of the company resources.

## 2.7 Organizing Activities

### Invited Charmian and Session Organizer

1. ICMNMMCS2012, International Conference on Mechanics of Nano, Micro and Macro Composite Structures, 18-20 June 2012, Torino, Italy.  
<http://paginas.fe.up.pt/~icnmmcs/welcome.html>
2. ICCS17, 17th International Conference on Composite Structures, 17-21 June 2013, Porto, Portugal.  
<http://paginas.fe.up.pt/~iccs17>
3. AIMETA2013, XXI° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata, 17-20 September 2013, Torino, Italy.  
<http://www.aimeta.dicam.unibo.it/sites/www.aimeta.dicam.unibo.it/files/static/www.aimetatorino2013.it/it/default2c3f.html?PID=1>
4. MECHCOMP, 1st International Conference on Mechanics of Composites, 8-12 June 2014, Stony Brook, USA.  
<https://sites.google.com/site/mechcomp2014>
5. ICCM2017, 8th International Conference on Computational Methods, 25-29 July 2017, Guilin, Guangxi, China.  
<http://www.sci-en-tech.com/ICCM/index.php/iccm2017/2017>
6. ICCM2018, 9th International Conference on Computational Methods, 6-10 August 2018, Rome, Italy.  
<http://www.sci-en-tech.com/ICCM/index.php/iccm2018/2018>
7. ICoNSoM2019, International Conference on Nonlinear Solid Mechanics, 16-19 June 2019, Roma, Italy.  
<http://www.memocsevents.eu/iconsom2019>

### Scientific Committee Member

8. CACMSIstanbul2015, 1st International Conference on Advances in Composite Materials and Structures, 13-15 April 2015, Istanbul, Turkey.  
<https://sites.google.com/site/cacmsistanbul2015>
9. CACMSSaoPaulo2016, 2nd International Conference on Advances in Composite Materials and Structures, 25-27 April 2016, São Paulo, Brazil.  
<https://sites.google.com/a/gcloud.fe.up.pt/compositessaopaulo2016>
10. ICCS18, 18th International Conference on Composite Structures, 15-19 June 2015, Lisbon, Portugal.  
<http://events.mercatura.pt/iccs18>
11. ICCS19, 19th International Conference on Composite Structures, 9-11 September 2016, Porto, Portugal.



<http://events.mercatura.pt/iccs19>

12. SSTA2017, 11th International Conference on Shell Structures, Theory and Applications, 11-13 October 2017, Poland, Gdansk.  
<http://wilis.pg.edu.pl/ssta/welcome>
13. ICCMS2017, International Conference on Composite Materials and Structures, 27-29 December 2017, Hyderabad, India.  
<http://www.iccms2017hyd.com>
14. MECHCOMP4, 4th International Conference on Mechanics of Composites, 9-12 July 2018, Madrid, Spain.  
<https://sites.google.com/a/gcloud.fe.up.pt/mechcomp2018madrid>
15. ICTWS2018, International Conference on Thin Walled Structures, 24-27 July 2018, Lisbon, Portugal.  
<http://ictws2018.ist.utl.pt>
16. ICCM2018, 9th International Conference on Computational Methods, 6-10 August 2018, Rome, Italy.  
<http://www.sci-en-tech.com/ICCM/index.php/ICCM2018/ICCM2018>
17. SYMCOMP2019, 4th International Conference on Numerical and Symbolic Computation Developments and Applications, 11-12 April 2019, Porto, Portugal.  
<http://symcomp2019.dem.isel.pt/>
18. DSTA2019, 15th International Conference on “Dynamical Systems - Theory and Applications”, 2-5 December 2019, Lodz, Poland.  
<https://www.dys-ta.com/>
19. MECHCOMP5, 5th International Conference on Mechanics of Composites, 1-4 July 2019, Lisbon, Portugal.  
<http://mechcomconference2019.com/>
20. ICCS22, 22th International Conference on Composite Structures, 22-25 October 2019, Wuhan, China.  
<http://www.conference-announcement.com/meeting.asp?cid=553&id=14>
21. ICCS23 & MECHCOMP6, 23th International Conference on Composite Structures & 6th International Conference on Mechanics of Composites, 15-18 June 2020, Porto, Portugal.  
<https://events.unibo.it/iccs23>

#### **Local Organizer**

22. ICCS19, 19th International Conference on Composite Structures, 9-11 September 2016, Porto, Portugal.  
<http://events.mercatura.pt/iccs19>
23. ICCM2018, 9th International Conference on Computational Methods, 6-10 August 2018, Rome, Italy.  
<http://www.sci-en-tech.com/ICCM/index.php/iccm2018/2018>

#### **Co-Chair**

24. SPB2015, International Conference on Shells, Plates and Beams, 9-11 September 2015, Bologna, Italy.  
<http://www.spb2015.dicam.unibo.it>

25. MECHCOMP2, 2nd International Conference on Mechanics of Composites, 11-14 July 2016, Porto, Portugal.  
<http://events.mercatura.pt/MechComp2016>
26. MECHCOMP3, 3rd International Conference on Mechanics of Composites, 4-7 July 2017, Bologna, Italy.  
<https://events.unibo.it/mechcomp3>
27. ICCS20, 20th International Conference on Composite Structures, 4-7 September 2017, Paris, France.  
<https://events.unibo.it/iccs20>
28. ICCS21, 21th International Conference on Composite Structures, 4-7 September 2018, Bologna, Italy.  
<https://events.unibo.it/iccs21>

### **Mini-Symposium Organizer**

29. *Computational Methods for Shell Structures* in AIMETA2013, XXI° Convegno Italiano dell'Associazione Italiana di Meccanica Teorica e Applicata, 17-20 September 2013, Torino, Italy.  
<http://www.aimeta.dicam.unibo.it/sites/www.aimeta.dicam.unibo.it/files/static/www.aimetatorino2013.it/it/default2c3f.html?PID=1>
30. *Advanced Computational Methods for the Mechanical Modeling of Materials and Structures* in ICCM2017, 8th International Conference on Computational Methods, 25-29 July 2017, Guilin, Guangxi, China.  
<http://www.sci-en-tech.com/ICCM/index.php/iccm2017/2017>
31. *Advanced Modelling of Composite Materials and Structures* in ICCM2018, 9th International Conference on Computational Methods, 6-10 August 2018, Rome, Italy.  
<http://www.sci-en-tech.com/ICCM/index.php/iccm2018/2018>
32. *Advanced Mechanical Modeling of Composite Materials and Structures* in ICoNSoM2019, International Conference on Nonlinear Solid Mechanics, 16-19 June 2019, Roma, Italy.  
<http://www.memocsevents.eu/iconsom2019>

### **Plenary Lectures**

33. *Higher-order Formulations for the Mechanical Analysis of Doubly-Curved Shell Structures Made of Advanced and Innovative Materials* in 21th International Conference on Composite Structures, 4-7 September 2018, Bologna, Italy.  
<https://events.unibo.it/iccs21>

## **2.8 Institutional Roles**

- Member of the **Internship Committee** for the Degree in Civil Engineering (from 2013 to Today).
- Member of the **Admission Committee** at the School of Engineering of the Alma Mater Studiorum - University of Bologna (from 2012 to Today).

- **Delegate** of the Degree in Civil Engineering for the **internarional student mobility** at the School of Engineering of the Alma Mater Studiorum - University of Bologna (from 2013 to Today).

## 2.9 Professor Doctorate Boarding, Committee of Doctorate and Research Grant

- Member of the **Committee of Doctorate in Aerospace Engineering**, a.y. 2013/2014 (September 2014) at the Politecnico of Milano.
- Member of the **Committee for the evaluation of the candidates for a Research Grant** established by DICAM Department (December 2014) entitled: *Smart Manufacturing: Design of plastic container for Beverages*.
- Member of the **Committee of Doctorate in Science, Technologies and Space Measure XXVIII Cycle** (April 2016) at the University of Padova.
- Member of the **Committee of Doctorate in Structural Engineering XXVIII Cycle** (May 2016) at the Politecnico of Torino.
- Member of the **Committee of Doctorate in Arospace Engineering XXXI Cycle** (September 2019) at the Politecnico of Torino.
- Member of the **Professor Doctorate Boarding in Civil, Chemical, Environmental and Materials Engineering XXXIII Cycle** (April 2017), **XXXIV Cycle** (February 2018) and **XXXV Cycle** (February 2019) at the Alma Mater Studiorum - University of Bologna.

## 2.10 Bibliometric Indices

The research activity, which includes 140 papers publish in international journal with Impact Factor, has generated grat interest in the international scientific community. In fact, in a short period of time (2004-2019), the published papers have received more than 6492 citations included in more than 1701 papers published in international journals and the h-index (= number of papers cited at least h times) of Prof. Francesco Tornabene has become equal to 51.

Parameters / Source	Scopus Author ID: 6507489062	ISI Web of Knowledge ResearcherID: E-4789-2012	Google Scholar
Documents	144	137	213
Total citations	6718	5828	7938
h-index	52	48	58
h10-index	-	-	112

## ANVUR PARAMETERS 2012-2013

ANVUR Parameters	SCOPUS Database*		WOS Database*		Ref. Associate Professor	Ref. Full Professor	Ref. Commissioner
	2012	2013	2012	2013			
Paper in Journals last 10 years	27.78	40	30	36	11	12.5	12.5**
Normalized citations	30.78	66.51	30.63	57.89	6.14	8.96	216.5**
Contemporary H-index	12	22	12	18	5	5.5	9**

\* source: <http://mitel.dimi.uniud.it/varia/abilitanvur> ; \*\* not-normalized values

## ANVUR PARAMETERS 2013: SCOPUS DATA

ASN 2013 Indicators by Sapienza

### Italian Professorship Qualification

In order to check whether the author is (strictly) above the thresholds in at least 2 out of 3 indicators, please specify the Academic Position, the Academic Area (Settore Concorsuale) and whether you had a leave time (totale). The Call defines this indicator as 'Number of Articles published in indexed Journals' (numero di articoli pubblicati su riviste indicizzate) published in the period 2003-2013 (included). Since the definition is somehow ambiguous 'Letter'. If you want to include more (or less) categories, please check only the categories you want to include.

Please select the Academic position:  Full professor,  Associate professor

Please select the categories for the first indicator or leave the default ones (2003-2013 documents covered):  Article (34),  Abstract Report (0),  Articles in Press (1),  Book (0),  Business Article (0),  Conf. Paper with ISSN (0),  Conf. Paper no ISSN (1),  Conf. Review (0),  Editorial (0),  Erratum (0),  Letter (0),  Note (0),  Press Release (0),  Report (0),  Review (1),  Short Survey (0)

Please select the Academic area: 08/B2 - STRUCTURAL MECHANICS

Please insert Before 2003: 0

	Number of normalized journal papers (includes articles, reviews and letters)	Number of normalized citations	Contemporary H-Index	MyList Summary
My List	37	65.800	22	Candidate: <b>Francesco Tornabene</b> Documents selected: 40 Total citations: 658 Total journal papers: 37 Academic age: 10.000 year/s Working period 2003-2013: 10.0 year/s
Selected area:	12.5	8.96	5.5	
Outcome:	<b>Positive</b>			

\*\* source: <http://www.scopus.com/authid/detail.url?authorId=6507489062> - Italian Professorship Qualification Application

## ANVUR PARAMETERS 2014-2016

ANVUR Parameters	SCOPUS Database*			WOS Database *			Ref. Associate Professor	Ref. Full Professor	Ref. Commissioner
	2014	2015	2016	2014	2015	2016			
Paper in Journals last 10 years	47	54	78	45	54	73	11	12.5	12.5**
Normalized citations	98.46	128.01	206.39	89.51	107.37	178.92	6.14	8.96	216.5**
Contemporary H-index	26	28	36	23	25	30	5	5.5	9**

\* source: <http://mitel.dimi.uniud.it/varia/abilitanvur> ; \*\* not-normalized values

## ANVUR INDICES 2016-2018

ANVUR Indices	Second class			First class			Ref. Associate Professor	Ref. Full Professor	Ref. Commissioner
	2016	2017	2018	2016	2017	2018			
First index	61	75	80	75	90	94	6	9	20
Second index	2668	3980	4347	2733	4061	4608	57	149	394
Third index	34	41	42	34	41	44	4	7	11

\* source: <http://abilitazione.miur.it/public/index.php>

## ANVUR INDICES 2018-2020

ANVUR Indices	Second class	First class	Ref. Associate Professor	Ref. Full Professor	Ref. Commissioner
	2019	2019			
First index	96	119	6	13	20
Second index	5967	6412	107	195	394
Third index	49	51	5	8	11

\* source: <http://abilitazione.miur.it/public/index.php>

## Databases e Research Scores

Scopus Profile: <https://www.scopus.com/authid/detail.uri?authorId=6507489062>

ISI Web of Knowledge Profile: <http://www.researcherid.com/rid/E-4789-2012>

Google Scholar Profile: <https://scholar.google.it/citations?user=1USOLEAAAAAJ&hl=it>

OrcID Profile: <http://orcid.org/0000-0002-5968-3382>

ResearchGate Profile: [https://www.researchgate.net/profile/Francesco\\_Tornabene](https://www.researchgate.net/profile/Francesco_Tornabene)

Publons Profile: <https://publons.com/author/1171215/francesco-tornabene#profile>

Accademia Profile: <https://unibo.academia.edu/FrancescoTornabene>

Mendely Profile: <https://www.mendeley.com/profiles/francesco-tornabene>

Loop Profile: <https://loop.frontiersin.org/people/515140/overview>

## Top Italian Scientists List

Inserted in the Top Italian Scientists List: Engineering Area

[http://www.topitalianscientists.org/TIS\\_HTML/Top\\_Italian\\_Scientists\\_Engineering.htm](http://www.topitalianscientists.org/TIS_HTML/Top_Italian_Scientists_Engineering.htm)

## 3 Teaching Activities

### 3.1 Classes

The teaching activity was mainly focused on holding Classes at the Faculty of Engineering at the University of Salento and at the Alma Mater Studiorum - University of Bologna, and on the tutor activities for students during the writing of the thesis and internships. The various classes were part of Civil Engineering, Architecture and Building Engineering, Energy Engineering, Mechanical Engineering, Aerospace Engineering at the University of Salento and at the Alma Mater Studiorum - University of Bologna.

#### Accademic Year 2018-2019 & 2019-2020

- Lecturer for the class **Structural Mechanics** [SSD ICAR/08] (9 cfu) for the Degree in Industrial Engineering (Curriculum: Aerospace) at the Faculty of Engineering of the University of Salento - Located in Brindisi.

- Lecturer for the class **Computational Mechanics** [SSD ICAR/08] (6 cfu) for the Degree in Civil Engineering at the Faculty of Engineering of the University of Salento.

#### **Accademic Years 2014-2015 & 2015-2016 & 2016-2017 & 2017-2018**

- Lecturer for the class **Theory of Structures M** [SSD ICAR/08] (6 cfu that correspond to 48 hours of teaching) for the Degrees in Civil Engineering and Architecture and Building Engineering at the School of Engineering and Architecture of the Alma Mater Studiorum - University of Bologna.
- Lecturer for the class **Plates and Shells M** [SSD ICAR/08] (6 cfu that correspond to 60 hours of teaching) for the Degrees in Mechanical Engineering and Energy Engineering at the School of Engineering and Architecture of the Alma Mater Studiorum - University of Bologna.

#### **Accademic Years 2012-2013 & 2013-2014**

- Lecturer for the classes **Dynamics of Structures M** [SSD ICAR/08] (6 cfu that correspond to 60 hours of teaching) for the Degrees in Civil Engineering and **Dynamics of Structures with Laboratory** [SSD ICAR/08] (8 cfu that correspond to 80 hours of teaching) for the Degrees in Architecture and Building Engineering at the School of Engineering and Architecture of the Alma Mater Studiorum - University of Bologna.

#### **Accademic Year 2013-2014**

- Lecturer for the class **Computational Mechanics M** [SSD ICAR/08] (6 cfu that correspond to 60 hours of teaching) for the Degrees in Civil Engineering at the School of Engineering and Architecture of the Alma Mater Studiorum - University of Bologna.

**Teaching Assistantship** at the School of Engineering and Architecture of the Alma Mater Studiorum - University of Bologna, for the following courses:

- **Theory of Structures**, for the Degree in Civil Engineering (Teacher: Prof. Erasmo Viola) a.y. 2005/'06, 2006/'07, 2007/'08, 2012/'13, 2013/'14.
- **Plates and Shells M**, for the Degree in Mechanical Engineering (Teacher: Prof. Alessandro Marzani) a.y. 2012/'13
- **Numerical Methods for the Civil Engineering M**, for the Degree in Civil Engineering (Teacher: Prof. Fiorella Sgallari) a.y. 2011/'12.
- **Machine Design M**, for the Degree in Mechanical Engineering (Teacher: Prof. Francesco Cesari) a.y. 2011/'12.
- **Mechanical Design and Laboratory T C.I.**, for the Degree in Mechanical Engineering (Prof. Gianni Caligiana) a.y. 2010/'11.
- **Product Engineering M**, for the Degree in Mechanical Engineering (Teacher: Prof. Alfredo Liverani) a.y. 2010/'11.
- **Structural Mechanics II**, for the Degree in Civil Engineering (V.O.) (Teacher: Prof. Erasmo Viola) a.y. 2003/'04, 2004/'05, 2005/'06, 2006/'07 and 2007/'08.

- Mechanics of Structure L, for the Degree in Civil Engineering (Teacher: Prof. Erasmo Viola) a.y. 2004/'05, 2005/'06, 2006/'07 and 2007/'08.
- Structural Mechanics, for the Degree in Architecture and Building Engineering (Teacher: Prof. Erasmo Viola) a.y. 2005/'06, 2006/'07 and 2007/'08.
- Laboratory of Structural Mechanics, for the Degree in Architecture and Building Engineering (Teacher: Prof. Erasmo Viola) a.y. 2005/'06, 2006/'07 and 2007/'08.
- Structural Mechanics L, for the Degree in Civil Engineering (Teacher: Prof. Antonio Di Leo) a.y. 2005/'06 and 2007/'08.

### **Seminars in Doctorate Courses**

During the Doctorate Course of “Mechanics of Structures” at the Faculty of Engineering of the Alma Mater Studiorum - University of Bologna (XXV Cycle - May 2011), Prof. Francesco Tornabene discussed the following seminar:

- *Fundamentals and applications of the Differential Quadrature Method.*

During the Doctorate Course in “Aerospace Engineering” at the Politecnico of Torino, due to the invitation of Prof. Erasmo Carrera (May 2011), Prof. Francesco Tornabene discussed the following seminar:

- *2-D GDQ Solution for Anisotropic Doubly-Curved Shell and Panel Structures. Shear and Normal Stress Recovery via the GDQ Method.*

In the Albenga Room of the Department of Structural, Building and Geotechnical Engineering at the Politecnico of Torino, due to the invitation of Prof. Alberto Carpinteri (30 May 2018), Prof. Francesco Tornabene discussed the following seminar:

- *Structural Analysis of Doubly-Curved Shells Made of Innovative Constituents by Means of Higher-order Formulations.*

During the Doctorate Course in “Civil, Chemical, Environmental, and Materials Engineering” at the School of Engineering and Architecture of Alma Mater Studiorum - University of Bologna, Prof. Francesco Tornabene proposed as scientific representative the following seminars:

- *Strong Form Finite Elements: Formulation and Applications, given by eng. Nicholas Fantzzi (27 May 2015).*
- *Isogeometric Analysis: a CAD-FEM Integration for Interfacial Fracture and Contact Mechanics Problem, given by eng. Rossana Dimitri (24/11/2016).*
- *Finite Element Model for Buckling Analysis of Thin-Walled Beam-Type Structures, given by eng. Domagoj Lanc (13/12/2016).*
- *Higher-order Strong and Weak Formulations for Arbitrarily Shaped Doubly-Curved Shell Structures, given by eng. Michele Baccocchi (12 September 2018).*

### 3.2 Exam Committee

- **Exam committee** from 2014 to 2018, president of the exam committee of *Theory of Structures*, for the Degree in Civil Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Exam committee** from 2014 to 2018, president of the exam committee of *Plates and Shells*, for the Degree in Mechanical Engineering and Energy Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Exam committee** from 2013 to 2014, president of the exam committee of *Dynamics of Structures*, for the Degree in Civil Engineering and Architecture and Building Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Exam committee** from 2013 to 2014, president of the exam committee of *Computational Mechanics*, for the Degree in Civil Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Exam committee** from 2012 to 2014, president of the exam committee of *Dynamics of Structures*, for the Degree in Civil Engineering and Architecture and Building Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Exam committee** from 2012 to 2014, member of the exam committee of *Structural Mechanics*, for the Degree in Architecture and Building Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.
- **Degree committee** from 2012 to 2018, member of the exam committee for the Degree in Civil Engineering (in Italian), Architecture and Building Engineering and Civil Engineering at the Faculty of Engineering of Alma Mater Studiorum - University of Bologna.

### 3.3 Advisor of PhD Theses and Scientific Advisor of Research Grants

Supervisor and Thesis Advisor of the following PhD Theses:

1. M. Baccocchi (2018) - *Higher-Order Strong and Weak Formulations for Arbitrarily Shaped Doubly-Curved Shells Made of Advanced Materials*, PhD in “Civil, Chemical, Environmental, and MAterials Engineering”, XXX° Cycle, Alma Mater Studiorum University of Bologna.

Scientific advisor of the following Research Grant won by the candidate:

2. M. Baccocchi (2017) - *Development of Numerical Methods based on the Strong and Weak Formulations of the Governing Equations for the Mechanical Behavior of Shell Structures Made of Innovative Materials*, Research Grant at the DICAM Department (“Civil, Chemical, Environmental, and MAterials Engineering”), Alma Mater Studiorum University of Bologna.



### 3.4 Co-Advisor of PhD Theses

Co-Advisor of the following PhD theses:

1. N. Fantuzzi (2013) - *Generalized Differential Quadrature Finite Element Method Applied to Advanced Structural Mechanics*, PhD in “Structural Engineering and Hydraulics”, XXV° Cycle, Alma Mater Studiorum University of Bologna.

### 3.5 Advisor of Theses

Advisor for the following theses:

1. M. Baccocchi, *Teorie di Ordine Superiore per Strutture a Doppia Curvatura in Materiale Anisotropo*, Alma Mater Studiorum - University of Bologna, a.y. 2013/'14.
2. C. Delle Donne, *Elementi Finiti in Forma Forte: Applicazione a Problemi Piani*, Alma Mater Studiorum - University of Bologna, a.y. 2013/'14.
3. E. Galli, *Ottimizzazione del Processo Produttivo di Tacchi Mediante Modellazione Numerica*, Alma Mater Studiorum - University of Bologna, a.y. 2013/'14.
4. M.J. Bahrapour, *An Investigation on the Analysis of Laminated Composite Plates using the GDQ Method*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Nicholas Fantuzzi, a.y. 2014/'15.
5. R. Sapienza, *Indagine Parametrica di Strutture a Guscio a Doppia e Singola Curvatura Realizzate con Materiali Innovativi*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2014/'15.
6. E. Cevenini, *Elementi Finiti in Forma Forte: Applicazione a Problemi Piani con Discontinuità e Materiali Compositi*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Nicholas Fantuzzi, a.y. 2014/'15.
7. F. Casini (2016) - *Vibrazioni di Piastre in Materiale Composito con Elementi Finiti in Forma Forte*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Nicholas Fantuzzi, a.y. 2015/'16.
8. L. Bonfiglioli (2016) - *Strutture a Guscio in Materiale Composito: Eccitazione Periodica e Sismica Applicata alla Base*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2015/'16.
9. G. Castellini (2017) - *Strutture Curve in Materiale Composito Soggette a un'Eccitazione Periodica e Sismica alla Base: Spostamenti e Azioni Interne*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2016/'17.
10. C. Manna (2017) - *Vibrazioni di Piastre di Forma Arbitraria con Elementi Finiti in Forma Forte: Convergenza, Stabilità e Accuratezza*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2016/'17.

11. M. Magliocchetti (2017) - *Analisi Statica e Dinamica di Strutture a Doppia Curvatura in Materiale Composito: Formulazione Forte e Debole con Teorie di Ordine Superiore*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2016/'17.
12. M. Lupidi (2017) - *Analisi Dinamica di Gusci Rotanti a Doppia e Singola Curvatura in Materiale Composito*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2017/'18.
13. G. Pirini (2017) - *Elementi Finiti in Forma Forte per lo Studio Statico di Strutture con Materiali Micropolari*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2017/'18.
14. F. Palese (2017) - *Modellazione Statica e Dinamica di Gusci in Materiale Composito Rinforzati da Fibre Curvilinee: Vibrazioni Libere, Profili di Tensione e Deformazione, Velocità Critiche di Rotazione*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisors: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2017/'18.
15. S. Cacchi (2018) - *Teorie di Ordine Superiore per l'Analisi Dinamica e Statica di Archi e Travi in Materiale Composito*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2017/'18.
16. M. De Luca (2018) - *Elementi Finiti in Forma Debole per l'Analisi Dinamica di Strutture di Forma Arbitraria in Materiale Composito*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Michele Baccocchi, Nicholas Fantuzzi, a.y. 2017/'18.
17. R. Bovicelli (2018) - *Flusso del Vento e Carichi sulle Strutture nello Strato Limite Atmosferico*, Alma Mater Studiorum - University of Bologna, Advisor: Prof. Francesco Tornabene, Co-advisor: Nicholas Fantuzzi, a.y. 2017/'18.
18. A. Nicolardi (2019) - *Grid Shells: Studio Numerico del Comportamento Strutturale di Gusci a Semplice e Doppia Curvatura*, University of Salento, Advisors: Prof. Francesco Tornabene and Prof. Rossana Dimitri, a.y. 2018/'19.

### 3.6 Co-Advisor of Theses

Co-Advisor of the following Theses:

1. I. Ancona, *Formulazione ed Applicazione del Metodo di Quadratura Differenziale Generalizzato*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2002/'03.
2. S. Mercuri, *Sui Metodi di Identificazione Strutturale* Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2003/'04.
3. M. Campidelli, *Modellazione di Carichi da Esplosione e Risposta Strutturale*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2003/'04.

4. A. Benedetti, *Modellazione Analitica e Sperimentazione Numerica del Comportamento Dinamico di Elementi Strutturali*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2003/'04.
5. A. Fusaro, *Sulla Disposizione Ottimale degli Smorzatori nelle Strutture*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2003/'04.
6. M. Seraceni, *Storia e Teoria nelle Applicazioni ai Gusci Strutturali*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2005/'06.
7. S. Mercuri, *Modellazione ed Applicazioni in Dinamica Strutturale*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
8. F. Fanti, *Modellazione Analitica e Sperimentazione Numerica del Comportamento Statico e Dinamico di Gusci di Traslazione*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2005/'06.
9. L. Lazzarini Barnabei, *Modellazione del Comportamento Dinamico di Strutture*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
10. P. Pastore, *Modellazione Analitica e Sperimentazione Numerica di Gusci in Materiale Anisotropo*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
11. I. Ricci, *Problemi Numerici in Dinamica delle Strutture*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
12. N. Fantuzzi, *Sul Comportamento delle Volte Cilindriche*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
13. C. Belmonte, *Modellazione del Comportamento di Materiali Piezoelettrici Fessurati*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
14. F. Torrebruno, *Modellazione di telai piani su smorzatori viscoelastici*, Alma Mater Studiorum - University of Bologna, Supervisor: Erasmo Viola, a.y. 2005/'06.
15. M. Temprati, *Analisi Limite di Strutture in Muratura. Teoria e Applicazione all'Arco Trionfale*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2006/'07.
16. G. De Vittorio, *Stabilità ed accuratezza del Metodo di Quadratura Differenziale nella risoluzione di problemi dinamici*, Alma Mater Studiorum - University of Bologna, Supervisor: Prof. Erasmo Viola, a.y. 2006/'07.

### **3.7 Tutor for Internships**

Tutor of several Internships carried out by Civil Engineering Students at the School of Engineering of the Alma Mater Studiorum - University of Bologna.

### **3.8 Education**

**September 2018 – Today:** Full-time **Assistant Professor** at Università del Salento.

**April 2012 – September 2018:** Full-time **Assistant Professor** at the Alma Mater Studiorum - University of Bologna.


**May 2007:** Obtained the **PhD** in *Mechanics of Structures* at the Alma Mater Studiorum - University of Bologna.

**July 2003:** **Degree in Mechanical Engineering** at the Alma Mater Studiorum - University of Bologna.

**July 1997:** **High School degree (Maturità Classica)** at Liceo Classico “S. Luigi” in Bologna.

Lecce, 2 July 2019

Yours Sincerely,

A handwritten signature in black ink that reads "Francesco Tornabene". The signature is written in a cursive style with a large initial 'F'.

Ph.D. Ing. Francesco Tornabene