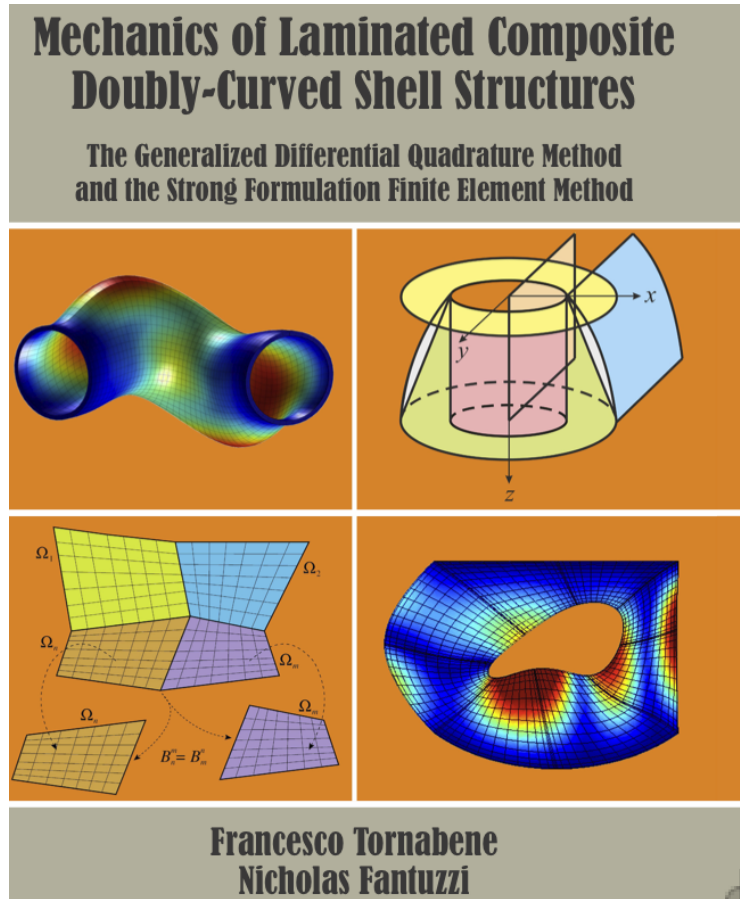




Professor Francesco Tornabene



Francesco Tornabene & Nicholas Fantuzzi, Mechanics of Laminated Composite Doubly-Curved Shell Structures, Publisher: Esculapio, ISBN: 978-88-7488-647-6

See:

<http://www.unibo.it/Faculty/default.htm?mat=039410&TabControl1=TabContatti>

<http://software.dicam.unibo.it/diquemasfab-project>

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Biography:

Francesco Tornabene was born in Bologna, January 13, 1978. School-leaving examination in a classical liceo achieved at Liceo Classico San Luigi in Bologna in 1997. Patent for Industrial Invention: Friction Clutch for High Performance Vehicles Question BO2001A00442 filed on 13/07/2001 in National Patent Bologna (Italy). Assignees: Alma Mater Studiorum - University of Bologna. Degree in Mechanical Engineering (Course of Studies in Structural Mechanics) obtained at the Alma Mater Studiorum - University of Bologna on 23/07/2003. Thesis Title (in Italian): Dynamic Behavior of Cylindrical Shells: Formulation and Solution. First position obtained in the competition for admission to the PhD in Structural Mechanics at the Alma Mater Studiorum - University of Bologna in December 2003. Winner of the scholarship, Carlo Felice Jodi for a degree in

Structural Mechanics in 2004. Adjunct Professor (Tutor Contract) for activities of supporting the teaching of *Scienza delle Costruzioni (Structural Mechanics) L*, for the course in Civil Engineering, at Alma Mater Studiorum - University of Bologna, a.a. 2005/2006. Adjunct Professor (Tutor Contract) for activities to support the teaching of *Scienza delle Costruzioni (Structural Mechanics) L*, for the course in Civil Engineering, at Alma Mater Studiorum - University of Bologna, a.a. 2007/2008. PhD in Structural Mechanics at the Alma Mater Studiorum - University of Bologna on 31/05/2007. PhD Thesis Title the (in Italian): Modeling and Solution of Shell Structures Made of Anisotropic Materials. Owner of the research grant entitled: Unified Formulation of Shell Structures Made of Anisotropic Materials. Numerical Analysis Using the Generalized Differential Quadrature Method and the Finite Element Method from January 2007 to January 2009 at the Alma Mater Studiorum - University of Bologna. Adjunct Professor (Tutor Contract) for activities to support the teaching of Mechanical Design and Laboratory T C.I., for the Degree in Mechanical Engineering, at Alma Mater Studiorum - University of Bologna, a.a. 2010/2011. Winner of the Senior research grant entitled: Design for Recycling Methodologies Applied to the Nautical Field from February 2011 to October 2011 at the Alma Mater Studiorum - University of Bologna. Junior researcher for the research program entitled: Advanced Numerical Schemes for Anisotropic Materials from December 2011 to January 2012 at the Alma Mater Studiorum - University of Bologna. Research Activities in collaboration with Foreign University Professors. Author of the book (in Italian) entitled: Mechanics of Shell Structures Made of Composite Materials. The Generalized Differential Quadrature Method, Esculapio, Bologna, 2012. Member of the Editorial Board of Journal of Computational Engineering and ISRN Mechanical Engineering since 2013. Member of Scientific Committee, Promoter and Secretary of CIMEST Center, Center for Studies and Research on the Identification of Materials and Structures - "Michele Capurso" - at the Department DICAM of the Alma Mater Studiorum - University of Bologna, since 2005. Professor of Dynamics of Structures since 2012 and of Computational Mechanics since 2013. Assistant Professor at the Alma Mater Studiorum - University of Bologna since 2012. Author of more than seventy research papers since 2005.

- Developer of the DiQuMASPAB Software (Simple and Free tool for studying laminated composite shell structures)
- Editor-in-Chief of Curved and Layered Structures

Research Topics:

Research in the "Mechanics of Structures": Theory of Plates & Shells.

Research in the "Computational Mechanics" Generalized Method of Differential Quadrature Method & Finite Element.

Research in the "Fracture Mechanics": Piezoelectric Materials.

Research in the "Stability of Equilibrium": Non-Conservative Forces.

Selected Publications:

Books:

Meccanica delle Strutture a Guscio in Materiale Composito

Francesco Tornabene and Nicholas Fantuzzi, "Mechanics of Laminated Composite Doubly-Curved Shell Structures, The Generalized Differential Quadrature Method and the Strong Formulation Finite Element Method", 02/2014, Edited by Esculapio, Published by Esculapio, ISBN: 978-88-7488-687-6

Journal Articles:

Francesco Tornabene, "Free vibrations of laminated composite doubly-curved shells and panels of revolution via the GDQ method", Computer Methods in Applied Mechanics and Engineering, Vol. 200, Nos. 9-12,

February 2011, pp. 931-952,

Francesco Tornabene, “2-D GDQ solution for free vibrations of anisotropic doubly-curved shells and panels of revolution”, *Composite Structures*, Vol. 93, No. 7, June 2011, pp. 1854-1876,

Francesco Tornabene and Alessandro Ceruti, “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 (WJM)*, Vol. 3, No. 1, February 2013

Viola, E.; Tornabene, F.; and Fantuzzi, N.: General Higher-Order Shear Deformation Theories for the Free Vibration Analysis of Completely Doubly-Curved Laminated Shells and Panels. *Composite Structures*, vol. 95, 2013, pp. 639-666.

Francesco Tornabene, Nicholas Fantuzzi, Erasmo Viola and A.J.M. Ferreira, “Radial basis function method applied to doubly-curved laminated composite shells and panels with a General Higher-order Equivalent Single Layer formulation”, *Composites Part B: Engineering*, Vol. 55, pp 642-659, December 2013

F. Tornabene, N. Fantuzzi, E. Viola, A.J.M. Ferreira, Radial basis function method applied to doubly-curved laminated composite shells and panels with a general higher-order equivalent single layer formulation, *Compos. Part B Eng.* (2013), doi: <http://dx.doi.org/10.1016/j.compositesb.2013.07.026>.

F. Tornabene, N. Fantuzzi, E. Viola, J.N. Reddy, Winkler-Pasternak foundation effect on the static and dynamic analyses of laminated doubly-curved and degenerate shells and panels, *Compos. Part B Eng.* (2013), doi: <http://dx.doi.org/10.1016/j.compositesb.2013.06.020>.

E. Viola, F. Tornabene, N. Fantuzzi, Static analysis of completely doubly-curved laminated shells and panels using general higher-order shear deformation theories, *Compos. Struct.* 101 (2013), 59–93.

Francesco Tornabene, Erasmo Viola and Nicholas Fantuzzi, “General higher-order equivalent single layer theory for free vibrations of doubly-curved laminated composite shells and panels”, *Composite Structures*, Vol. 104, pp 94-117, October 2013

E. Viola, F. Tornabene, N. Fantuzzi, Generalized differential quadrature finite element method for cracked composite structures of arbitrary shape, *Compos. Struct.* (2013), doi: <http://dx.doi.org/10.1016/j.compstruct.2013.07.034>.

E. Viola, F. Tornabene, N. Fantuzzi, DiQuMASPAB Software, DICAM Department, Alma Mater Studiorum—University of Bologna (<http://software.dicam.unibo.it/diqumaspab-project>).

Erasmo Viola, Luigi Rossetti, Nicholas Fantuzzi and Francesco Tornabene, “Static analysis of functionally graded conical shells and panels using the generalized unconstrained third order theory coupled with the stress recovery”, *Composite Structures*, Vol. 112, pp 44-65, June 2014

Tornabene, F., Fantuzzi, N., Baccocchi, M. (2014). Free vibrations of free-form doubly-curved shells made of functionally graded materials using higher-order equivalent single layer theories, *Composite Part B Engineering*, 67:490-509

Nicholas Fantuzzi, Francesco Tornabene and Erasmo Viola, “Generalized Differential Quadrature finite element method for vibration analysis of arbitrarily shaped membranes”, *International Journal of Mechanical Sciences*, Vol. 79, pp 216-251, February 2014

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Francesco Tornabene, Nicholas Fantuzzi, Michele Baccocchi, 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 (2014), 637-660.

Francesco Tornabene, Nicholas Fantuzzi, Erasmo Viola and Erasmo Carrera, "Static analysis of doubly-curved anisotropic shells and panels using CUF approach, differential geometry and differential quadrature method", *Composite Structures*, Vol. 107, pp 675-697, January 2014

N. Fantuzzi, F. Tornabene, E. Viola, A.J.M. Ferreira, 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 (2014), 2503-2542.

Francesco Tornabene, Nicholas Fantuzzi, Erasmo Viola and Romesh C. Batra, "Stress and strain recovery for functionally graded free-form and doubly-curved sandwich shells using higher-order equivalent single layer theory", *Composite Structures*, Vol. 119, pp 67-89, January 2015

Francesco Tornabene, Nicholas Fantuzzi, Francesco Ubertini and Erasmo Viola "Strong formulation finite element method based on differential quadrature: A survey", *Appl. Mech. Rev.* March 2015

Francesco Tornabene, Nicholas Fantuzzi, Michele Bacciocchi and Erasmo Viola, "Accurate inter-laminar recovery for plates and doubly-curved shells with variable radii of curvature using layer-wise theories", *Composite Structures*, Vol. 124, pp 368-393, June 2015

Nicholas Fantuzzi, Michele Bacciocchi, Francesco Tornabene, Erasmo Viola and Antonio J.M. Ferreira, "Radial basis functions based on differential quadrature method for the free vibration analysis of laminated composite arbitrarily shaped plates", *Composites Part B: Engineering*, Vol. 78, pp 65-78, September 2015

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Erasmus Viola, Luigi Rossetti, Nicholas Fantuzzi and Francesco Tornabene, "Generalized stress-strain recovery formulation applied to functionally graded spherical shells and panels under static loading", *Composite Structures*, Vol. 156, pp 145-164, November 2016

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