



Professor Salvatore Brischetto Erasmo Carrera, Salvatore Brischetto and Pietro Nali, Plates and shells for smart structures, John Wiley and Sons, 2011, 352 pages

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Department of Mechanical and Aerospace Engineering
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Biography:

After earning his degree in Aerospace Engineering at the Politecnico di Torino in 2005, Brischetto received his PhD in Aerospace Engineering (Politecnico di Torino) and in Mechanics (Université Paris Ouest–Nanterre La Défense) in 2009. He won the excellence prize for PhD students in 2008 and the prize for young researchers in 2011 at the Politecnico di Torino. He worked as a Research Assistant at the Politecnico di Torino from 2006 to 2010, and as Assistant Professor from 2010 to 2018; he is Associate Professor at the same university since february 2018. His main research topics are: smart composite structures, multifield problems, hygro-thermal stress analysis, CNTs, inflatable structures, shell 3D and 2D numerical and exact solutions, additive manufacturing and UAVs. He is the author of more than 130 articles, 74 of which have been published in international journals, and 1 patent. He serves as a reviewer for more than 70 international journals. He has been Guest Editor for Mechanics of Advanced Materials and Structures and for Technologies. He is a committee member for several international journals and 1 book series. He has been Teaching Assistant at the Politecnico di Torino for courses on computational aeroelasticity, structures for aerospace vehicles, nonlinear analysis of aerospace structures, principles of structural mechanics, aeronautic constructions, aeronautic structures, and numerical modelling and simulation techniques for aerospace structures. He is chair at the Politecnico di Torino for courses “Aeronautic Constructions”, "Design and Additive Manufacturing for Aerospace Applications" and "3D shell models for composite structures". He is co-founder and co-chair of the research group “ASTRA: Additive manufacturing for Systems and sTRuctures in Aerospace”. Brischetto is also founder and chair of the project “PoliDrone, A multipurpose modular drone produced via 3D printing”.

Research Interests:

Aerospace structures, in particular: smart structures, composite materials, multifield problems, FGMs, thermal and hygroscopic stress analysis, carbon nanotubes, inflatable structures, plate and shell finite elements, exact 2D and 3D solutions for plates and shells, additive manufacturing, UAVs.

Selected Publications:

Book:

Erasmus Carrera, Salvatore Brischetto and Pietro Nali, Plates and shells for smart structures (Google eBook), John Wiley and Sons, 2011, 352 pages

Journal Articles, etc.:

Erasmus Carrera, Salvatore Brischetto, Alessandro Robaldo, Variable kinematic model for the analysis of functionally graded material plates, *AIAA J*, 46 (1) (2008), pp. 194–203

Brischetto S, Carrera E. Advanced mixed theories for bending analysis of functionally graded plates. *Comput Struct* 2008;88(23–24):1474–83.

Carrera, E.; Brischetto, S.; and Giunta, G., “The Best on Plate/Shell Theories for Laminated Structures Analysis”, Proceedings of the AIAA/ASME/ASCE/AHS/ASC 49th Structures, Structural Dynamics and Materials Conference, 2008, AIAA Paper No. 2008-2187.

Carrera, E.; Nali, P.; Brischetto, S.; and Cinefra, M., “Hierarchic Plate and Shell Theories With Direct Evaluation of Transverse Electric Displacement”, Proceedings of the AIAA/ASME/ASCE/AHS/ASC 50th Structures, Structural Dynamics and Materials Conference, 2009, AIAA Paper 2009-2138.

E. Carrera and S. Brischetto, “A survey with numerical assessment of classical and refined theories for the analysis of sandwich plates”, *Appl. Mech. Rev.* 62 (010803) (2009), pp. 1–17.

Brischetto S, Carrera E, Demasi L. Improved response of unsymmetrically laminated sandwich plates by using zig-zag functions. *J Sandwich Struct Mater* 2009;11(2–3):257–67.

Carrera, E., Brischetto, S.. A comparison of various kinematic models for sandwich shell panels with soft core. *Journal of Composite Materials* 2009;43(20):2201–2221

Carrera E, Brischetto S, Cinefra M, Soave M. Refined and advanced models for multilayered plates and shells embedding functionally graded material layers. *Mech Adv Mater Struct* 2010;17(8):603–21.

Cinefra M, Carrera E, Brischetto S, Belouettar S. Thermo-mechanical analysis of functionally graded shells. *J Therm Stress* 2010;33(10):942–63.

E. Carrera, S. Brischetto, M. Cinefra, M. Soave, Effects of thickness stretching in functionally graded plates and shells, *Composites Part B: Engineering* 42 (2011) 123–133.

Brischetto, S.; Polit, O.; and Carrera, E.: Refined Shell Model for the Linear Analysis of Isotropic and Composite Elastic Structures. *European Journal of Mechanics A/Solids*, vol. 34, 2012, pp. 102-119.

Brischetto S, Leetsch R, Carrera E, Wallmersperger T, Kröplin B. Thermo-mechanical bending of functionally graded plates. *J Therm Stress* 2013;31:37–41.

S. Brischetto, F. Tornabene, N. Fantuzzi and M. Baccocchi, “Interpretation of boundary conditions in the analytical and numerical shell solutions for mode analysis of multilayered structures”, *International Journal of Mechanical Sciences*, Vol. 122, pp 18-28, March 2017

Salvatore Brischetto, “Exact three-dimensional static analysis of single- and multi-layered plates and shells”, *Composites Part B: Engineering*, Vol. 119, pp 230-252, June 2017

Salvatore Brischetto, “A general exact elastic shell solution for bending analysis of functionally graded structures”, *Composite Structures*, Vol. 175, pp 70-85, September 2017