



**Professor Maria Cinefra**

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**Biography:**

Since July 2015, Maria Cinefra is Associate Professor at the Department of Mechanics and Aerospace Engineering of Politecnico di Torino. After earning two degrees (Bachelor, March 2007, and Master, December 2008) at the Politecnico di Torino, she was enrolled in a Ph.D. (from January 2009 to April 2012) under the supervision of Prof. Carrera at Politecnico di Torino and a foreign co-advisor, Prof. Olivier Polit at the University of Paris Ouest Nanterre. Her research project, related to the 'Thermo-mechanical design of multi-layered plates and shell embedding FGM layers', was funded by the Fonds National de la Recherche of Luxembourg and it was performed in collaboration with the CRP Henri Tudor of Esch (Lux). She was awarded for the best Ph.D paper (Ian Marshall's Award) at the 16th International Conference on Composite Structures (28-30 June 2011, Porto, Portugal).

She was involved in a collaboration with the Department of Mathematics of Università di Pavia in order to develop an advanced shell finite element based on the Unified Formulation by Carrera for the analysis of structures made of composite, functionally graded and piezo materials. Contemporaneously, she collaborated with Professor Ferreira, editor of the Journal "Composite Structures", about the meshless method 'Radial Basis Functions' combined with the Unified Formulation for the analysis of advanced structures.

Since 2010, she holds teaching activity at the Politecnico di Torino in different courses at Bachelor and Master levels: 'Fundamentals of Structural Mechanics', 'Aeronautic Legislation, human factors and safety', 'Non-linear analysis of structures', 'Structures for spatial vehicles' and 'Aeroelasticity'. She held also a Ph.D. course at Università del Salento with the title '1D and 2D models for the analysis of advanced material structures with multi-field properties through analytical and numerical methods'.

Her research topics cover: composite materials, shell finite elements, FE analysis, meshless methods, smart structures, functionally graded materials, thermal stress analysis, multifield interaction, panel flutter, advanced kinematic theories for plates and shells, mixed variational methods, local-global methods, failure analysis of laminated structures, non-linear problems.

M. Cinefra is author and coauthor of about 60 papers on the above topics, most of which have been published in first rate international journals, as well as a recent book published by J Wiley & Sons with the title 'Finite

Element Analysis of Structures through Unified Formulation'. Cinefra's papers have had about 1000 citations with h-index=17 (data taken from Scopus).

She was invited to hold a plenary talk in the international conference ICCS18 (Lisbon, June 2015) about 'FE Shell Formulations for Layered Composite Structures'. She made a contribution as reviewer to about ten international peer-reviewed journals and was on the Editorial Board of some international conferences. M. Cinefra was co-organizer of the ICMNMMCS (Torino, June 2012, chaired by Prof. Carrera and Prof. Ferreira) and of the ECCOMAS SMART 13 conference (Torino, June 2013, chaired by Prof. Carrera).

#### Selected Publications:

Cinefra M., Carrera E., Valvano S. (2015), Variable kinematic shell elements for the analysis of electro-mechanical problems. In: MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol. 22 n. 1-2, pp. 77-106. - ISSN 1537-6532

Erasmus Carrera, Maria Cinefra, Enrico Zappino, Lorenzo Succi (2014), Effects of Thermo-Mechanical Loads on the Aeroelastic Instabilities of Metallic and Composite Panels. In: TRANSACTION OF NANJING UNIVERSITY OF AERONAUTICS AND ASTRONAUTICS, vol. 31 n. 2, pp. 118-122. - ISSN 1005-1120 [Item availability restricted.]

Keshava Kumar S., Cinefra M., Carrera E., Ranjan Ganguli, Dineshkumar Harursampath (2014), Finite Element Analysis of Free Vibration of the Delaminated Composite Plate with Variable Kinematic Multilayered Plate Elements. In: COMPOSITES. PART B, ENGINEERING, vol. 66, pp. 453-465. - ISSN 1359-8368

Cinefra M., Valvano S., Carrera E. (2014), A Finite Elements Model embedding Piezoelectric Patches. In: 5th International Symposium on Aircraft Materials, Marrakech, Morocco, 23-26 April 2014.

Cinefra M., Valvano S., Carrera E. (2014), A Finite Elements with Continue Transverse Electric Displacement for the Electro-Mechanical Analysis of Shell Structures. In: DeMEASS VI, Ede, Netherlands, 25-28 May 2014

Carrera E., Cinefra M., Keshava Kumar S. (2014), MITC9 shell elements based on RMVT and CUF for the analysis of composite plates and shells. In: First International Conference on Mechanics of Composites, Stony Brook University, Long Island, New York, 9-12 Giugno 2014.

Cinefra M., Valvano S., Carrera E. (2014), Refined Shell Elements for the Analysis of Multifield Problems in Multilayered Structures. In: 11th World Congress on Computational Mechanics WCCM XI, 5th European Conference on Computational Mechanics ECCM V, 6th European Conference on Computational Fluid Dynamics ECFD VI, Barcelona, Spain, 20-25 July 2014.

Cinefra M., Carrera E., Valvano S. (2014), Refined shell elements for the thermo-mechanical analysis of multilayered structures. In: First International Conference on Mechanics of Composites (MechComp2014), Stony Brook, Long Island (NY), USA, 8-12 June 2014

Cinefra M., Chinosi C., Della Croce L., Carrera E. (2014), Refined shell finite elements based on RMVT and MITC for the analysis of laminated structures. In: COMPOSITE STRUCTURES, vol. 113, pp. 492-497. - ISSN 0263-8223

Cinefra M., Carrera E., Valvano S. (2013), Doubly-curved shell finite elements based on MITC-type technique and Unified Formulation for the analysis of multilayered structures. In: International Conference on Science and Technology of Heterogeneous Materials and Structures, Wuhan University, China, 11-13 October 2013. pp. 81-82

Erasmus Carrera, Maria Cinefra, Enrico Zappino, Lorenzo Succi (2013), Effects of Thermo-Mechanical Loads on the Aeroelastic Instabilities of Metallic and Composite Panels. In: 10th International Congress on Thermal Stresses, Nanjing, China, May 31- June 4. [Item availability restricted.]

Carrera E., Cinefra M., Petrolo M., Zappino E. (2013), Free vibration analysis of thin-walled structures through 1D and 2D refined models. In: XXI Congresso Associazione Italiana di Meccanica Teorica e Applicata, Torino, Italy, 17-20 Settembre 2013. [Item availability restricted.]

Cinefra M., Carrera E., Chinosi C., Della Croce L. (2013), MITC9 finite elements based on RMVT for the analysis of laminated shells. In: XXI Congresso Associazione Italiana di Meccanica Teorica e Applicata, Torino, Italy, 17-20 Settembre 2013. [Item availability restricted.]

Cinefra M., Chinosi C., Della Croce L. (2013), MITC9 shell elements based on refined theories for the analysis of isotropic cylindrical structures. In: MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol. 20, pp. 91-100. - ISSN 1537-6532

M. Cinefra, E. Carrera, S. Valvano (2013), Refined shell elements for the analysis of multilayered structures with piezoelectric layers. In: 6th ECCOMAS Thematic Conference on Smart Structures and Material (SMART2013), Torino (Italy), 24-26 June 2013.

M. Cinefra, E. Carrera (2013), Shell finite elements with different through-the-thickness kinematics for the linear analysis of cylindrical multilayered structures. In: INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING, vol. 93, pp. 160-182. - ISSN 0029-5981

M. Cinefra, E. Carrera, C. Chinosi, L. Della Croce (2013), Unified Formulation for MITC9 shell elements based in RMVT. In: 17th International Conference on Composite Structures (ICCS17), Porto (Portugal), 17-20 June 2013.

M. Cinefra, G. Augello, E. Carrera (2012), Benchmarking of commercial codes by refined shell finite element models in the analysis of composite structures. In: International Conference on Mechanics of Nano, Micro and Macro Composite Structures (ICMNMCS), Torino (Italy), 18-20 June 2012.

Cinefra M., Carrera E., Bischoff M. (2012), Isoparametric shell finite elements based on Unified Formulation. In: 10th World Congress on Computational Mechanics, San Paolo (Brasile), 8-13 Luglio.

Cinefra M. (2012), Refined and advanced shell models for the analysis of advanced structures. PhD thesis [Item availability restricted.]

Cinefra M., Carrera E., Della Croce L., Chinosi C. (2012), Refined shell elements for the analysis of functionally graded structures. In: COMPOSITE STRUCTURES, vol. 94, pp. 415-422. - ISSN 0263-8223

M. Cinefra, E. Carrera (2012), Thermo-mechanical analysis of functionally graded structures via refined shell finite elements. In: International Conference on Mechanics of Nano, Micro and Macro Composite Structures (ICMNMCS), Torino (Italy), 18-20 June 2012.

Cinefra M.; Soave M (2011), Accurate vibration analysis of multilayered plates made of functionally graded materials. In: MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol. 18 n. 1, pp. 3-13. - ISSN 1537-6494

Cinefra M., Carrera E., Chinosi C., Della Croce L. (2011), Refined multilayered shell elements based on MITC type technique and Unified Formulation. In: Sixth MIT Conference on Computational Fluid and Solid Mechanics, Boston (MA) USA, 15-17/06/2011.

Maria Cinefra, Erasmo Carrera, Salvatore Brischetto (2011), Refined shell models for the vibration analysis of multiwalled carbon nanotubes. In: MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, vol. 18 n. 7, pp. 476-483. - ISSN 1537-6532

Cinefra M., Belouettar S., Soave M., Carrera E. (2010), Variable kinematic models applied to free vibration analysis of functionally graded materials shells. In: EUROPEAN JOURNAL OF MECHANICS. A, SOLIDS, vol. 29, pp. 1078-1087. - ISSN 0997-7538