

A tutorial on reliability of Non-Destructive Testing and Structural Health Monitoring with case studies

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About the Author:

Michele Carboni got a Master of Science in Mechanical Engineering at Politecnico di Milano in 1998 and a Ph.D. in Mechanical Behaviour of Materials at the Università degli Studi di Pisa in 2002. During the Ph.D. programme, he has visited, for a six months period, the AGH University in Krakow (Poland) working together with Prof M. Skorupa on a research about crack propagation under variable amplitude loading conditions. In 2002, he became Research Assistant on the topic “study about problems related to the strength of materials adopted in railway transportation” at the Department of Mechanical Engineering of Politecnico di Milano. On January 16th 2005, he was taken on as Assistant Professor at the Department of Mechanical Engineering of Politecnico di Milano. On October 16th 2014, he was taken on as Associate Professor at the Department of Mechanical Engineering of Politecnico di Milano.

Author of about 150 scientific papers and either involved or person in charge of numerous research projects/contracts, his recent research activity deals with different topics: stress analysis of machine elements, studies on the mechanical and the fatigue behaviour of materials and components, development of techniques for structural reliability under service loads, research, application and reliability of non-destructive testing (he is certified at level III for liquid penetrants, magnetic particles, ultrasonics and visual testing) and of structural health monitoring.

The obtained research results allowed him to win the following prizes and awards: “Young Researcher 2004” by the Italian Group on Fracture, “Capocaccia 2006” by the Italian Association on Stress Analysis, “Best Paper Award” at the 12th International Conference on Fracture (Ottawa, Canada, 2009) and “Merit Certificate for Outstanding Contribution” at the 18th World Congress on Non-Destructive Testing (Durban, South Africa, 2012).

At present, he is Elected Member of the Board of Directors of the European Federation for Non-Destructive Testing (EFNDT), Elected Member of the Board of Directors of the Italian Society for Non-Destructive Testing Monitoring Diagnostics (AIPnD) and President of the Scientific Council of the Italian Society for Non-Destructive Testing Monitoring Diagnostics (AIPnD).

His recent lecturing activities include “Mechanical Design and Structural Analysis”, “Structural Analysis and Design Laboratory (Machine Elements and FEM)” and “Experimental Methodologies for Structural Diagnostics”.