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## Biography

Claudia Barile is a Lecturer of Department of Mechanics, Mathematics and Management at the Politecnico di Bari since April 2017. She achieved the Master's Degree in Mechanical Engineering, Magna cum laude in July 2008 at the Politecnico di Bari. She got the PhD title on February 2012 in Advanced Production Systems at the Politecnico di Bari. Her research activities are mainly focused on the mechanical characterization of materials (composites, metals, polymers, etc.) with both traditional and innovative experimental techniques. She has published 19 papers in scientific impact-ed journals, 1 book chapter, and 2 books. She has 23 indexed conference papers. The h-index of the author is 9 with a total of 195 citations. She has also published 6 papers in a no-indexed journal. She took part in many international and national conferences as relator.

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## MECHANICAL CHARACTERIZATION OF CARBON FIBER REINFORCED PLASTICS SPECIMENS FOR AEROSPACE APPLICATIONS

In the last years Composites Fibres Reinforced Plastics materials are increasing their use in structural applications for aerospace industry. The aim of ensuring high performances is based on a deep knowledge of the mechanical response of the composite components in different workloads. Components are exposed to severe environmental conditions characteristic of flight settings, as elevated temperatures close to engines and/or cold temperatures. The typical assembly of composites consists of multiple layers stacked together in a specified sequence. Layers could be arranged with different orientations, different sequences and different technological procedure for supplying precise mechanical properties that need to be studied. The introduction of new peculiarities, able to improve mechanical properties of composites, is also investigated. It refers to an unconventional fibres' disposition combined with the through-the-thickness stitching on the in-plane mechanical properties of composites. Conventional carbon fibres arrangement is commonly referred to a Cartesian coordinate system. Fibres are positioning in bundles along different angle orientations respect to the zero lamina. The use of a polar coordinate system of continue carbon tow is now introduced to create specimens as well as complex geometry components simply. This approach aims to introduce several benefits in the material's manufacturing strategy and if compared with the conventional process seems to be very promising by reducing delamination phenomena.



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