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Progresses and Challenges of Composite Laminates in Thin-Walled Structures: A Systematic Review
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Abstract

Most engineering technologies, gadgets, and systems have been developed around the use of sophisticated materials. Composite laminates have found widespread application in various significant and innovative industries, such as aviation, maritime transportation, automobiles, and civil engineering. Recent studies have revealed that composite materials are extensively utilized in automotive, undersea, and structural applications. Extensive efforts have been dedicated to exploring the structural components constructed from composite materials due to their importance in engineering. While composite materials offer certain advantages over their metallic counterparts, they also present analysts and designers with intricate and challenging issues. Hence, this Review aims to highlight noteworthy studies on composite materials and their engineering applications, specifically focusing on structural components. Furthermore, this Review includes a comprehensive summary of the application of composite laminates, accompanied by a critical analysis of the existing literature in this field. By presenting this information, the Review intends to provide a valuable resource and guideline for researchers interested in leveraging composite materials for engineering structures. © 2023 The Authors. Published by American Chemical Society.

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