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Experimental and Comparative Study of Composite Thin Cylinder Subjected to Internal Pressure

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Abstract : An experimental procedure is developed to study the performance of composite thin wall cylinders subjected to internal pressure loading for investigations of stress distribution through the composite cylinders wall. Three types of fibers were used in this study are; woven roving glass fiber/epoxy, hybrid fiber/epoxy, and Kevlar fiber/epoxy composite specimens were fabricated and tested. All of these specimens subjected to uniformed pressure load using the hydraulic pump. Axial stress is identified, and values were found after collecting all the results. Comparison between the deferent types of specimens was done. Thus, the present investigation concludes the efficient and effective composite cylinder experimentally and provides a considerable advantage for using woven roving fibers in pressure vessels applications.

Keywords : stress distribution, composite material, internal pressure, glass fiber, hybrid fiber
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