

THE FAILURE MECHANISM ON FIBER REINFORCED COMPOSITE MATERIALS

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Abstract

The present paper mainly describes the results of the author's recent investigation on the failure mechanism of composites, some comments on the recent development in this field are also made. The interior characterization of composite materials is very complicated, so effective methods of testing and analysis are of vital importance. In this paper, a variety of techniques (acoustic emission, infrared thermography, scanning electron microscope, etc.) were used to investigate the formation and the propagation of damage, failure behaviour and their effects on fatigue life. By experimental research above mentioned, the occurrence of transversal crack and fatigue failure can be predicted.

Keywords *Composites; reinforced fiber; failure mechanism; damage; fatigue*

核反应堆的流体弹性问题——科学研究的思想、发展和实践

提要 介绍了保加利亚引自苏联的水水动力反应堆 ВВЭР-440 型和 ВВЭР-1000 型中的流体弹性问题。计算了核反应堆结构的强度判据、疲劳判据、变形判据、稳定性判据、中子辐射判据等。表述了结构元件方程和流体方程，以及它们的各种解法。介绍了保加利亚在核反应堆方面的研究工作实践。

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