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Sommario/riassunto

This book is a collection of papers concerning the application of advanced materials in machine design. Depending on the scale at which they are analyzed and used, we can talk about composites, nano-composites, nano-materials and intelligent materials, e.g. such as piezoelectric materials, magneto-restrictive materials, functional (Shape Memory Alloys) materials. The efficient and effective use of materials in design applications is directly connected with the good knowledge of the static and fatigue strengths of the material. The detection and control of damages and the study of their effects