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Résumé ou extrait : "The twenty-first century could be called the 'Multifunctional Materials Age'. The inspiration for multifunctional materials comes from nature, and therefore these are often referred to as bio-inspired materials. Bio-inspired materials encompass smart materials and structures, multifunctional materials and nano-structured materials. This is a dawn of revolutionary materials that may provide a 'quantum jump' in performance and multi-capability. This book focuses on smart materials, structures and systems, which are also referred to as intelligent, adaptive, active, sensory and metamorphic. The purpose of these materials from the perspective of smart systems is their ability to minimize life-cycle cost and/or expand the performance envelope. The ultimate goal is to develop biologically inspired multifunctional materials with the capability to adapt their structural characteristics (stiffness, damping, viscosity, etc.) as required, monitor their health condition, perform self-diagnosis and self-repair, morph their shape and undergo significant controlled motion over a wide range of operating conditions"

Sujet - Nom commun : Matériaux intelligents -- Applications industrielles
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