

*Special Issue Reprint*

## **Advances in Mechanical Testing of Engineering Materials**

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Modern technical facilities are constructions that are sophisticated in terms of functionality and in terms of the material technologies used. Therefore, it becomes necessary to obtain reliable information about the material and its current state. This is not easy task considering the variety of materials present and their applications. Therefore, this reprint brings together publications focused on two areas: new diagnostic methods adapted to new materials; and the procurement of new information about conventional materials used in innovative technical solutions. The solutions to the above are seen in the use of modern sensory systems, enabling and seeking information in new physical relationships, i.e., analyzing cross effects. In this collection, we can read about research on intelligent materials based, for example, on microgranules or rubber-ferritic conglomerate, which, in addition to fulfilling functional tasks, can provide valuable information about the operation of the object. Innovative ways of obtaining information about composites, steel, concrete and even printed plastic elements are discussed. Additionally, a review is provided, covering topics from miniature steel samples to the elements of a construction crane. This reprint is a necessary supplement and provides an exchange of experience and achievements in acquiring new information on both classic and modern materials used currently in mechanical engineering. By accessing new information on materials and their condition, it will be possible to maintain the safety and reliability of mechanical engineering facilities at an appropriate level.

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