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## An Overview of Electromechanical Impedance Method for Damage Detection in Mechanical Structures

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This paper presents an overview of research performed at the AGH University of Science and Technology in the field of the electromechanical impedance method for damage detection in mechanical structures. A theoretical background on the described method is made in the first part of the paper. Next, results of numerical analyses of the electromechanical impedance for simple mechanical structures are shown. Afterwards an outcome of laboratory measurements performed with developed structural health monitoring system based on the electromechanical impedance phenomenon is presented. Finally, results of tests of the monitoring system in environmental conditions are discussed.

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**Ключевые слова:**

### Содержание.

Abstract  
Introduction  
Definition of the electromechanical impedance  
Numerical simulations  
Laboratory measurements  
Experiments performed in environmental conditions  
Conclusions  
Acknowledgments