

## Vibration Busters – an interdisciplinary approach to education of dynamical systems

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*Abstract:* There is an implementation project "Silesian University of Technology as a Center for Modern Education based on research and innovation" (POWR.03.05.00-IP.08-00-PZ1/17), financed by the European Funds of the Operational Program Knowledge Education Development. Within other activities there is a project called "Individual Study Programs implemented in the form of Project Based Learning". A group of 6 pre-graduated students of Civil Engineering, Mathematics and Mechatronics studied problems dynamics of structures within a sub-project called Vibrations Busters. They worked under supervision of professors from among mentioned departments. Students, according to their competencies, implemented a procedure of numerical analysis of the problem within Mathematica system, built a physical model of a frame and loaded it with vibrating electrical engines and measured behavior of the structure. The aim of the project was to develop methods of passive and active controlling of vibrations of building structures. To built a structure a technology of 3D printing was implemented. Thanks to the project students of different departments had an opportunity to share their skills and knowledge and receive several new hard and soft competencies. This was also a unique experience for supervisors and great opportunity to extend fields of interdisciplinary cooperation. The aim of the presentation is to share results of this extraordinary and successful educational project with other scientists.

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