

# **The Effect of Spiral Spring Stiffness on Electrical energi with Energi Conventor Prototipe Based on Speed Bump at Laboratory Scale.**

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## **ABSTRACT**

The string has an elastic ability to deflection, workload an the string divide into three forces, strains forces, strees forces and twist force. This study use a prototipe design that installed the spiral spring. The spring is not only to reposition the speed bump after loaded but also to reduce the workload. Because of that, the string related to electrical power that generated. The objective of this experiment is to study the effect of string on the electrical power that can be generated with stiffness comparability.

The prototipe in the experiment use 6 variants of springs which hane difference of stiffness. The workload value for this study is 60 kg. Electric current and voltage measure by the spiral spring on the prototipe based on speed bump.

The general results show that the higher value of spiral spring stiffness can generate small electric current than the spring with low stiffness. In this study, the maximum value of spiral spring stiffness is 13,08 N/mm which generate electrical power 0,0495 Watt. Whereas contrast, minimum value of spiral spring stiffness is 3,68 N/mm which can generate electrical power 0,093 Watt.

Keywords: energy, electrical generator, spiral spring, workload, speed bump.