**GAZI UNIVERSITESI, TECHNOLOGY FACULTY,
DEPARTMENT OF ELECTRICAL AND ELECTRONIC
ENGINEERING
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REVIEW

Foreign scientific supervisor for the dissertation work of Issimova Aigerim on the topic "A device for converting mechanical vibtation into an electrical signal", submitted for the degree of Doctor of Philosophy (PhD) in the specialty "6D071900 - Radio Engineering, Electronics and Telecommunications"

The dissertation of Issimova Aigerim is devoted to the development of a device that can effectively extract vibration signals from the environment. A new design of an energy-saving system based on electromagnetic vibration signal systems was developed, which consists of two permanent magnets and a coil. The purpose of the dissertation work is to study the parameters of the electromagnetic system of vibration signals. The paper primarily considers the general theory of the electromagnetic system and a review of international literature. The device has been developed and experimental studies have been carried out. During the pilot study, it was shown that the harvester works on broadband signals. A completely new theory has been built that describes the operation of this device, and a mathematical model has been written based on this theory. And, accordingly, numerical calculations were made on the Python program.

In the work of Issimova A.T. In the course of numerical calculations, two parameters were identified that affect the efficiency of the electromagnetic device: self-induction and recovery factor. And a possible solution to improve the efficiency of this device is described. The thesis provides a scientific explanation why this device could not generate energy above 350 Hz frequency.

In my opinion, the dissertation work of Issimova Aigerim satisfies all the requirements for papers submitted for the degree of Doctor of Philosophy (PhD). I recommend that the Academic Council accept the dissertation work of Issimova A.T. to the defense for the degree of Doctor of Philosophy (PhD) in the specialty "6D071900 - Radio Engineering, Electronics and Telecommunications".

Yours sincerely,
Prof. Dr. Erol Kurt