Abstract

Measuring the level of sound attenuation in a room will be very necessary because of the large number of sound-absorbing materials installed on the surface of the indoor wall layers made of light materials, so it can occur due to large frequencies. waves. Thus the idea is obtained to design a system or make a tool to check the level of sound attenuation in the room based on the acoustic vibrations produced if the frequency waves from sound sources in a room are on the wall layer. This design makes a tool that is integrated with the Internet of Things (IoT) and can then retrieve data from the detection results using the IMU then go to the analysis stage. By using this tool it can be seen the level of sound attenuation in a room and it can also be denied that a glass room that uses a cork damper has a "good enough" classification output with an average output of 39.801842 dBA and a glass room that does not use cork dampening material. has a "bad" output classification with an average output of 66.092836 dBA.

Keywords: ***sensor fusion*** **IMU,** ***acoustic absorption, acoustic vibration***