

**Abstract**

Muscle is a network inside a human body which functions to move the bone. Muscle is at the state of abnormal when the muscle is not working how it should be. Early check of upper body kinematic can be done by using a device equipped with sensor fusion which is IMU sensor and flex sensor. IMU signal results will be filtered using complementary filter to get a good result and minimum noise. The result of the test will be displayed as a graph from angle Axis X,Y,Z of the IMU and the angle indentation of the Flex Sensor. The angular values obtained are used for analysis.

**Keywords:** Kinematics, IMU, Sensor Fusion, Flex Sensor, Complementary Filter.