ABSTRACT

Work accident is a sudden event, and unwanted, intrusive process can even cause harm. To minimize accidents that exists, then use Personal Protective Equipment (PPE) at work such as: Project Helmets, goggles, earmuffs, etc. However, in case of accident rate, for example worker falling debris while working, PPE is used only workers can protect themselves workers were unable to send information to others working condition so that the evacuation difficult. It takes a multifunctional PPE such as project helmets integrated with various sensors.

Final Project, an Arduino-based helmet project is integrated with the heart sensor (Sensor detak jantung), temperature sensor (DS18B20) , and carbon monoxide gas sensor (MQ-7). The gas sensor works to monitor workers from carbon monoxide gas dangers to workers who are integrated with *buzzer*s as a notification when carbon monoxide levels> 100 ppm (part per million), cardiac sensors function to monitor the worker's heartbeat while working in confined spaces, temperature sensors to monitor temperature building construction environment.

Based on the results of testing on the Final Project, the comparison of measurement gap with standard tool, temperature sensor of 0.07%, 4.4 heart sensor and 99.67% temperature sensor accuracy level and heart sensor of 95.45% with various test conditions .

Keywords: Arduino, website, sensor