

FINAL PROJECT

IOT DEVELOPMENT IDEA FOR CONDITION MONITORING SYSTEM OF MECHANICAL EQUIPMENT (CASE STUDY IN ROTARY CEMENT KILN)

**Submitted as One of the Requirements for Completing a Bachelor's Degree
Education**

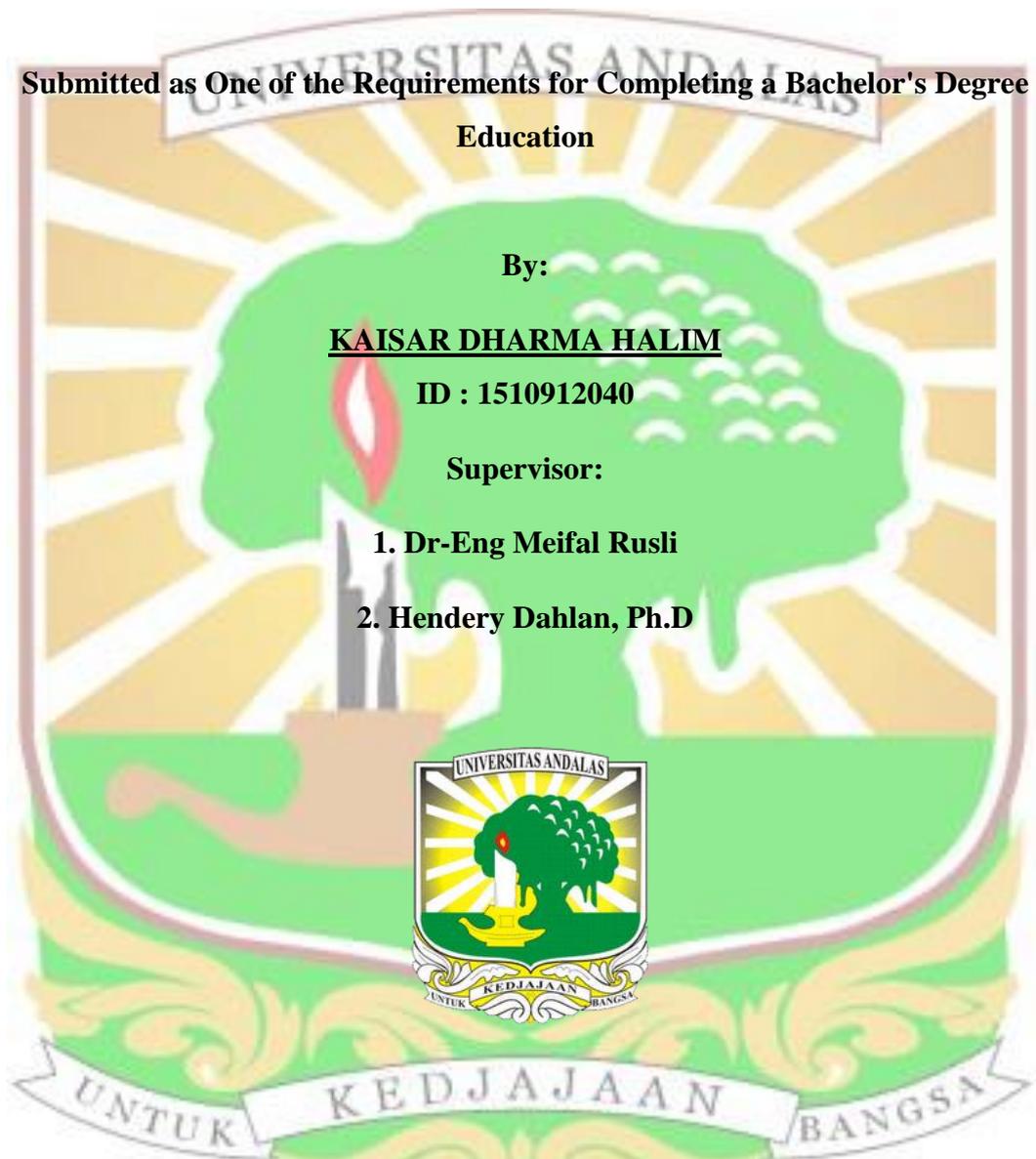
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ABSTRACT

Kiln is very important part of a cement plant, where the kiln greatly affects the production of all factory elements. Girth-gear or Ridding Kiln that supports rotary Kilns subjected dynamic stress. Fatigue that occurs on the surface of the kiln with a long-term effect on the stresses acting on the contact area of friction. In the other hand, Internet of Things (IoT) and Big Data are the main roles towards a revolutionary system that the manufacturing industry was transformed to digital ecosystem, so industrial companies have entered a new era of "Big Data", where the volume, speed, and various data they manage explode very quickly. through IoT interaction between object become possible in real life without any barrier to space and time. So in this research, the system to measure roundness and temperature of kiln have developed and combine between IoT with some sensor to get data on temperature and roundness of the kiln, thus the data got in real time and monitored wherever and whenever to predictive maintenance on Kiln or another machine tools in industrial companies. But, there is something problem when used wireless temperature and roundness sensor, because too high of temperature kiln, distance between tools and kiln too far, and the wind blowed while data retrieval, so the data does not accurate and precicion. As a result, performance of the tools are if the tools have closer space with kiln, the sensor shown better accuracy of reading distance and temperature sensor. If the tools read the higher temperature object, data have bettter precicion of temperature sensor, but displayed bad accuracy of reading temperature and distance sensor.

Keywords: Kiln, Internet of Things, Roundness, Skewing, Temperatu

