

**Rancang Desain dan Simulasi Beban Rangka Sepeda Listrik
menggunakan Solidwork** (*Design and Load Simulation of Electric
Bike Frame using a Solidwork*)

Andik Irawan, S.T, M.T (*as chief counselor*) and
Ir. Dwi Djoko Suranto, M.T (*asa member counselor*)

ABSTRACT

The production of Plywood in the period 2001 – 2005 ranged from 11 to 21 million m³/year, with the make use of waste wood plywood that currently has the potential for the public, especially Indonesia, the Purpose of this study is to determine the results of the design, simulation, strength analysis and the ability of the wooden frame electric bike. The design used is by doing approach to the frame of mountain bike polygon xtrada 6.0 2019 to modify the angle and shape on a frame, then the design is simulated with the variation of load 54 kg, 58 kg and 62 kg to determine the strength and ability on the order. And further analysis of whether the order is eligible for use. Simulation made into 4 different options. The optimal value of the results simulation analysis are on option 2 with the value of von mises stress that is of 90.20 Mpa, the value of displacement that 0,548, and the value of the safety factor that is 1,11

Keywords: *Bike Frame, Plywood, Von Mises Stress, Displacement, Safety Factor*