DEPARTEMEN TEKNIK MESIN
FAKULTAS TEKNIK UNIVERSITAS HASANUDDIN

PROGRAM BOOK

SNTTM XX | ISAIME 2022

SEMINAR NASIONAL TAHUNAN TEKNIK MESIN ke - 20

In Conjunction With

INTERNATIONAL SYMPOSIUM
ON ADVANCES AND INNOVATION IN MECHANICAL ENGINEERING

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PROSES MANUFAKTUR | MATERIAL | ENERGI | PERANCANGAN DAN MEKANIKA TERAPAN

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PENYEDERHANAAN RANCANGAN DALAM PEMBUATAN SEPEDA LISTRIK SEBAGAI PRODUK LOKAL UNTUK MENDUKUNG PENINGKATAN PENGGUNAAN PRODUK DALAM NEGERI (P3DN)

(Simplification of Design in Assembling Electric Bicycles as Local Products to Support Increased Use ofDomestic Products)

ROLAN SIREGAR, HUSEN ASBANU, ASYARI DARYUS, YEFRI CHAN, DIDIK SUGIYANTO, ALVIAKHSAN MAULANA, HAFIZH GUNTUR JABBARULADLI

ABSTRACT

Based on the Instruction of the President of the Republic of Indonesia No. 2 of 2022 relating to the Acceleration of Increase in the Use of Domestic Products, all relevant parties are expected to take an essential role in carrying out these instructions. In thisstudy, a method in the design of electric bicycles is shown, which is expected to havean academic contribution that practitioners or entrepreneurs can use in manufacturingelectric bikes as domestic products. Problems that often arise in deciding to produce a local product are problems of quality, price, and the level of public trust. Thus, to reduce this problem, it is necessary to conduct more in-depth, sustainable, and synergized research between fields of science. The goal is to get an optimal local product in terms of quality, price, and marketing. Specifically, this research aims to determine the shape and geometry of the electric bicycle frame structure, determine the constituent specifications, and display the stages of manufacturing to finishing inthe manufacture of these products. The method used in this research is generally based on literature review, analysis, simulation, and testing, which is carried out gradually and systematically to obtain a real product. Products that have been manufactured aretested for performance to determine the interpretation of these products. One of the product performance tests is related to mileage, while the distance achieved is 44.86 km. The designed electric bicycle shows performance results that align with estimatesbased on the test results, both qualitatively and quantitatively. This research isestimated to have great potential to play a role in developing electric bicycles.

Keywords: *electric bicycle; bicycle frame; mileage; bicycle battery; P3DN*