

**DESIGNING AND DEVELOPING OF 2-STAGE 2-BLADED SAVONIUS
VERTICAL AXIS WIND TURBINE UNDER LOW SPEED WIND
CONDITION**

By

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STATEMENT BY AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Renewable energy in Indonesia has been growing recently, interest in the design of wind turbines has also been expanding. The vertical axis wind turbine is suitable to implement because of the low wind speed characteristic in Indonesia. The main objective of the project is to design 2-staged 2-bladed Savonius vertical axis wind turbine. Also, The support frame for a wind turbine is designed in this thesis project. The design of the turbine will be made in Solidworks. The results will be simulated using OpenFoam and be observed using Paraview. The optimal speed for this wind turbine is 130 rpm and the average power is 294.4 Watt based on CFD simulation.

Keywords: Vertical axis wind turbine, Savonius wind turbine, Solidworks, CFD analysis



DEDICATION

I dedicate this thesis to God, family, friends, and my country



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