

# June 2016, MM424 Graduation Project

## Supervisor Dr. H. Turkoglu

MM424 MECHANICAL ENGINEERING APPLICATIONS II PROJECT

"DESIGN OF GORLOV HELICAL TURBINE, CFD ANALYSIS AND PROTOTYPE MANUFACTURING"

Osman Kaykusuz, Supervisor Prof. Dr. Hasmet TURKOGLU, June 2016

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"Renewable energy sources such as wind, solar and hydraulic energy, are sources of energy with high potential in our country. In this study, design, analysis and prototype manufacturing for Gorlov helical turbine have been fulfilled, to generate electricity with the use of wind, solar and hydraulic energy. The maximum power to be produced by the turbine is determined according to the average daily electricity needs of a standard house, and the turbine has been designed accordingly. The turbine is 3D modelled with Solidworks. After creating the solid model, CFD analysis is conducted with ANSYS CFX program. Due to financial constraints, a scaled prototype of the turbine has been manufactured. The produced parts have been assembled and tested at the selected values of wind power at the wind tunnel."

