



DESIGN PROJECT PROPOSAL FORM

Academic Year	2022 -2023	Semester	Fall • Spring <input checked="" type="checkbox"/>
Project Type	Research <ul style="list-style-type: none">• ME 411 Thermal & Fluid Design• ME 413 Mechanical Design• ME 415 Robotics & Control Design	Application <ul style="list-style-type: none">• ME 412 Thermal & Fluid Design<input checked="" type="checkbox"/> ME 414 Mechanical Design• ME 416 Robotics & Control Design	
Advisor	Lecturer Mustafa Öncül		

Project Title	Investigation of the usage of alternate lignocellulosic fibers as filling material in biocomposites
Purpose and Scope	<p>Lignocellulosic fiber-filled biocomposites based on polypropylene have gained increasing interest over the past two decades in academia and industry. Lignocellulosic fibers are environmentally friendly, biodegradable, abundantly available, renewable with low density, and cheap. The biodegradability of lignocellulosic fibers can contribute to a healthy ecosystem while their low cost and high performance fulfill the economic benefits of industries. Applications of biocomposites are found in such products as construction materials, and automotive parts. Therefore, these biocomposites have replaced the most widely used synthetic fiber reinforced composites in many applications. In this study, the mechanical properties of alternate lignocellulosic fiber-filled polypropylene composites will be studied. The weight percentage of the fibers varied from 5%, 10%, 15%, and 20%. The biocomposites will be characterized by tensile testing, flexural testing, and dynamic mechanical analysis.</p> <p>This research is supported by the TÜBİTAK 2209-B project.</p>
Work Packages	<ul style="list-style-type: none">• Preparation of fillers• Manufacturing of biocomposites• Characterization of biocomposites
# of Team Members	2
This section to be filled by the Commission	<p>The Project Proposal</p> <p><input type="checkbox"/> is approved.</p> <p><input type="checkbox"/> should be revised considering the following suggestions:</p>