6 Kokkuvõte

Bakalaureusetöö eesmärgiks oli projekteerida elektriline palgiveo sõiduk. Sõiduk kasutab edasiliikumiseks elektrimootoreid ja akut. Töö alguses seati eesmärgiks välja töötada masin, mis oleks mõistliku hinnaga ja abistaks inimest metsas palgi veoga. Projekti alustati turu uuringust, kus selgus, et sarnast asja olemas ei ole. Seejärel koostati erinevaid kontseptsioone probleemi lahendamiseks ja valiti neist parim välja. Seejärel alustati komponentide valikuga. Tehti vajalikud arvutused aku ja mootorite valikuks ja leiti sobivad komponendid. Seejärel alustati korpuse, käepideme ja palgikinnitus mehhanismi projekteerimisega. Sellega paralleelselt sooritati tugevusarvutused ja analüüsid, et veenduda detailide piisavas tugevuses. Viimaks tehti ka omahinna arvutus.

Projekteeritud sõidukil on kaks 350 W mootorit ja 25 Ah 36 V aku. Sõidukit juhitakse gaasi hoovaga käepideme küljest, millega ka masinat juhitakse. Sõidukil on kaks mootori kontrollerit. Palgivedamis sõiduki korpus ja käepide on valmistatud S235 terasest ja peamiseks valmistamise meetodiks oli painutamine ning keevitamine. Tugevus arvutused ja analüüsid näitasid, et seade on piisava tugevusega. Täis akuga on võimalik metsast tuua 200 meetri kauguselt kokku 20 palki. Toote omahinnaks on 862 €.

Töö eesmärgid, mis lõputöö alguses seati, saavutati edukalt.

6.1 Summary

The aim of this bachelor's thesis was to design an electric log hauler. The vehicle uses electric motors and a battery for movement. At the start of the project, the goal was to develop a reasonably priced machine that would assist people in transporting logs in the forest. The project began with market research, which revealed that no similar product existed. Various concepts were then developed to address the problem, and the best one was selected. Next, the selection of components began. Necessary calculations were made to choose the appropriate battery and motors, and suitable components were found. Following this, the designing of the chassis, handle, and log attachment mechanism began. Simultaneously, strength calculations and analyses were performed to ensure the components were sufficiently strong. Finally, the cost price calculation was made.

The designed vehicle features two 350 W motors and a 25 Ah 36 V battery. It is controlled by a throttle on the handle, which also steers the machine. The vehicle has two controllers for motors. The chassis and handle of the log transport vehicle are made from S235 steel, with bending and welding being the primary manufacturing methods. Strength calculations and analyses indicated that the device is sufficiently robust. With a full battery, it is possible to transport 20 logs from 200 meters away in the forest. The product's cost price is €862.

The objectives set at the beginning of the thesis were successfully achieved.