

CYPRUS INTERNATIONAL UNIVERSITY

#### **GROUP MEMBERS**

- Marcel Ruhamya Yissa 22016714 (Mechatronics Eng.)
- Mohannad Alhuthifi 22106413 (Mechatronics Eng.)
- Jacob Pongo Seundja 22016220 (Electrical & Electroni Eng.)
- Gloria Nkashama Bilonda 22116727(Biomedical Eng.)
- Elysee Dhemba Balipa 22011952 (Mechanical Eng.)
- Abdallah Suleiman Haidar 22308643 (Ren. Energy Eng.)
- Rafa Alzuriki 22107774 (Biomedical Eng)

Some objectives: **Environmental Sustainability;** 

Innovation: Inspire creativity and innovation in the development of eco-friendly technologies.

Education: Educate our community about the potential of solar energy and its application in everyday life.

# SUSTAINABLE CAPSTONE PROJECTS (SCAP) FALL 2023-2024

## Solar Car Project - Empowering a mini car with Solar Energy 🜍

#### INTRODUCTION

🔅 Welcome to our Solar Car Project! In our quest for sustainable transportation solutions, we present a small solar-powered vehicle that harnesses the sun's energy to drive us towards a greener future. The motivation behind our project was to challenge ourself to construct something meaningful from waste materials and see if we could be able to work as a team.

#### **MATERIALS USED IN CONSTRUCTION**

**Re-Used/Recycled Materials:** Printer DC motor Printer gears system 2 LED (green color) 220 Ohm resistor Small connectors cables. Printer plastic part used as cover.

Printer circular parts used for wheels.

Other Materials: Mini solar panel 5V each X 8peces Power bank batteries 3.5V each X 2peces We putted batteries in series or parallel to see the efficiency and performance of the small car.

mini solar cars.







#### **FINAL PRODUCT**

Rigorous testing in varying light conditions ensured the reliability and functionality of the

Our project is just a small car project which use solar panel as voltage supplier to provide voltage to the motor and small electronic circuit of two LED.

We used three gears in order to transfer the shaft motion of the motor to the wheels axe in order to make them turn as required.

As we see the project is working, but not efficiently. The DC motor does not work within it full capacity, and some times it may be harder to see if the light are really on, that is because of batteries efficiency and the current going through. Since we could not find specific and required elements, we just needed to make the car move forward. But in the future our aim is to make this car more autonomous and capable to move in any directions also able to avoid obstacles, that will make it more intelligent using sensors and some others specific elements

Working in the workshop was really challenging, especially without appropriate materials. But that was the aim at the beginning, we should sow that we were able to create something meaningful from waste materials. Join us in embracing the power of the sun! Together, let's make our first step towards a cleaner, greener, and more sustainable future.

Figure 3. Panel for power supplier.



Figure 2. Gears part.



Figure 4. Final product.

| 1. | scienc  |
|----|---------|
|    | power   |
| 2. | instruc |
| 3. | scienc  |
| 4. | https:/ |



### **RESULTS AND DISCUSSION**



### CONCLUSIONS

#### REFERENCES

- cebuddies.org/science-fair-projects/project-ideas,energyr/how-to-build-solar-powered-car
- ctables.com/Mini-Solar-Car-1/
- ceprojects.org/solar-car/
- //www.bluesolaria.com/custom / solar panel voltage vs. battery