

BUGGY4FUN

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ABSTRACT

The project presents a small electric car, which can be used on various types of terrain, including in urban centers, to reduce pollution. The developed platform offers the possibility to test several types of electric motors, together with their controllers. The engines are powered both from dedicated batteries and from alternative sources resulting from regenerative braking, as well as from solar energy sources.

KEYWORDS

All terrain vehicle,
Small electric vehicle,
Electric power recovery

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INTRODUCTION

The project of a small and versatile electric car has a special significance in today's society. Not only does it help reduce pollution in urban areas, it also provides an innovative platform for testing different types of electric motors and controllers. This aspect supports the development of green technologies and the advancement of sustainable mobility. In addition, the ability to power the motors from dedicated batteries, regenerative sources and solar power demonstrates a strong commitment to efficiency and environmental protection. The project thus represents a promising solution for the current needs of clean and sustainable transport.

RESULTS

Technical product description:

The developed product is a small-sized electric vehicle with two seats and space for luggage, with energy recovery during braking and increased autonomy for outdoor spaces by using a solar panel. We currently have two working prototypes, called SmartBuggy S and SmartBuggy XL.

Smart Buggy S:

- Maximum speed: 40 km/h
- Autonomy: 60 km
- Size: L=2300mm, l=1500mm, h=1600mm
- Distance between the wheels: 1600mm
- Gauge: 1500mm
- Ground clearance: 180mm
- Weight: 200 kg
- Engine power: 3kW
- Battery capacity: 2.6 kW (64 V, 40 Ah)
- Solar panel: 410 W
- Safety system: simple safety belts
- Dashboard: buttons and 7-segment displays
- Transmission: chain with reducer
- Traction: rear
- Loading: custom
- Charging time: 20 hours

Smart Buggy XL:

- Maximum speed: 200 km/h
- Autonomy: 150 km – sport driving, 250 km – Eco driving
- Size: L=3000mm, l=1600mm, h=1560mm
- Distance between the wheels: 2400mm
- Gauge: 1660mm
- Ground clearance: 220mm
- Weight: 600 kg
- Engine power: 70 kW
- Battery capacity: 31.4 kW
- Solar panel: -
- Safety system: safety belts with 4 points on the seats
- Dashboard: buttons and LCD display
- Transmission: chain with reducer
- Traction: rear, front coupling with locking satellites
- Charging: Type2 (chargeable at public stations)
- Charging time: 8 hours (slow charge), 1.5 hours (fast charge)

