With this kit the students can perform more than 30 experiments

Who is it for?
- Technicians in RE systems.
- Electrical Technicians in Environmental and Emobilty Technologies.

DL EMOBILITY-L

EMOBILITY KIT

Electric mobility (Emobility) and battery technologies are closely intertwined, as the performance, range, and efficiency of electric vehicles (EVs) depend heavily on the type of battery used. Over the years, several battery technologies have emerged to support Emobility, each with its advantages and challenges.

This proposed kit **DL EMOBILITY-L** teaches the physical and technical foundations and applications of different battery technologies. Eight different types of batteries, such as lithium-polymer batteries, capacitors, or fuel cells, allow the final users to study their characteristics such as their lifespan and charging methods.

Qualitative and quantitative experiments are performed to explore the properties of various types of batteries, and the electric car can operate with all types of storage included. Thanks to the integrated ChargerModule, the batteries are always ready for use and battery charging methods can be studied during experiments.

It impresses with its flexibility and location-independent usability, which does not require any additional equipment.

The kit is composed of the following components:

- 1x Battery module NiMH 3xAAA,
- 1x Capacitor module,
- 1x Resistor module (triple),
- 1x Resistor plug element 1Ω,
- 2x Resistor plug element 10Ω,
- 1x Resistor plug element 100Ω,
- 1x Lithium-polymer (LiPo)/battery module,

- 1x Battery module holder 1xAAA,
- 1x Lead (Pb)/battery module,
- 1x Electric model car with battery adapter,
- 1x LiFePo/battery AAA,
- 1x NiZn/battery AAA,
- 1x NiMH/battery AAA,
- 1x Reversible Fuel cell,
- 1x Base unit,
- 1x Suitcase,
- 1x Potentiometer module 110Ω,
- 1x Distilled water (100 ml),
- 1x ChargerModule,
- 1x AV-Module,
- 1x Insert Emobility,
- 1x Info sheet initial startup,
- 1x Foam cover with knobs,
- 1x Storage plan,
- 2x Test lead, 25cm/black,
- 2x Test lead, 25cm/red.

With this kit, the students can perform the following experiments:

- Ohm's law,
- Series and parallel connection of resistances,
- Nominal voltage and capacity of voltage sources,
- Four-terminal sensing,
- Internal resistance of voltage sources,
- Series connection of voltage sources,
- The capacitance of a battery module,
- The energy density of battery modules,
- The Ri efficiency of a battery module,
- The total efficiency of a battery module,
- Temperature-dependent behaviour of the lithium-polymer cell,
- The charging and discharging processes of a capacitor,
- I-V characteristics of the single NiMH battery module,
- I-V characteristics of the NiZn battery module,
- I-V characteristics of the LiFePo battery module,
- I-V characteristics of the lead battery module,
- I-V characteristics of the lithium-polymer battery module,
- I-V characteristics of the triple NiMH battery module,
- The charging process of the NiMH, NiZn, LiFePo, lead, lithium-polymer batteries,
- The discharging process of a battery module,
- Hydrogen production in the reversible hydrogen fuel cell,
- Characteristic curve of the electrolyser,
- Hydrogen consumption of a fuel cell,

- Characteristic curve of the fuel cell,
- The efficiency of the hydrogen fuel cell,
- Operation of the electric car with several battery modules,
- Operation of the electric car with the reversible fuel cell.

Supplied complete with all the necessary accessories and a detailed manual.