



Fuel Cell Trainer is a modular experimental system designed to study the working of Solar-Hydrogen cycle. The Reversible Fuel Cell is unique, as it acts as both, an Electrolyzer and a Fuel Cell.

This trainer demonstrates Chemistry and Physics principles by experimenting with the splitting of water into its basic elements (hydrogen and oxygen) using renewable power generation from photovoltaic technology (solar panel), and then use this basic element (hydrogen) of water as a renewable "energy carrier" that can power many applications with fuel cell technology.

Provides an excellent opportunity to learn about the exciting prospects of renewable energy. Study how renewable energy can be harnessed, stored and re-used in all kinds of applications and how hydrogen can be a unique link between natural resources of power and power consuming devices-using fuel cell technology.

This system includes Solar Photovoltaic Panel, Hydrogen and Oxygen Storage Tanks, Reversible Fuel Cell and an Application Board encouraging users to learn the system step by step, configure the system and visualize the workings of clean energy principles from start to finish.

### Technical Specifications:

#### Solar Panel :

- Voltage (at optimum power point) : 2.2 V DC
- Current (at maximum power point) : 450mA
- Dimensions : 125 x 155 x 8 (mm)

**Note :** Solar Panel data is based on standard conditions (1,000W/m<sup>2</sup>, 250C)

#### Reversible Fuel Cell :

- Dimensions : 54 ´ 54 ´ 17 (mm)
- Total Weight : 69.7 grams

#### Electrolyzer Function :

- Input Voltage : 1.8 ~ 2.6 V DC
- Input Current : = 0.7 A
- Hydrogen Production Rate : 7 ml / min at 1A
- Oxygen Production Rate : 3.5 ml / min at 1A

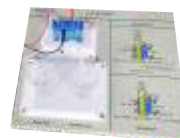
#### Fuel Cell Function :

- Output Voltage : 0.9 V DC Output Current : 360 mA Power : 210 mW
- Volume of Inner Containers for : 16ml Hydrogen/ Oxygen Gas Storage

- Complete Training System to study the Solar-Hydrogen cycle
- Reversible Fuel Cell-both as an Electrolyzer and as a Fuel Cell
- Measurement and Application Modes
- Weather proof Solar Panel
- Portable and light weight
- Extensive e-Manual and study material
- 2 Year Warranty

#### Scope of Learning

- Study of Current-Voltage Characteristic of Electrolyzer function of Reversible PEM Fuel Cell
- Study of Current-Voltage Characteristic and Power Curve of Fuel Cell function of the Reversible PEM Fuel Cell
- Study of the Application of Fuel Cell function of Reversible Fuel Cell of providing electrical energy to the loads such as buzzer, fan and bulb



Reversible Fuel Cell and Gas Storage Tanks



Application Board



Solar Panel

Note: Specifications are subject to change.

29.06.2022 **Tesca Technologies Pvt. Ltd.**

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