SOLAR HYDROGEN GENERATION TECHNOLOGY

INTRODUCTION

Hydrogen is energetically dense by weight, storable and transportable. These properties make hydrogen attractive as a fuel for the storage and transport of solar energy. Solar Hydrogen Generation technology has a promising potential to resolve energy shortage and environmental concerns. It will allow us on the one hand to store renewable energy on a large scale, and on the other to use it as fuel in different sectors such as mobility, in the residential and industrial fields and also as a raw material in industry. Photocatalytic water splitting using particulate semiconductor materials has been studied as a simple means of hydrogen production. The photocatalytic systems made up of inexpensive materials for solar hydrogen generation with improved efficiency and stability have been developed.

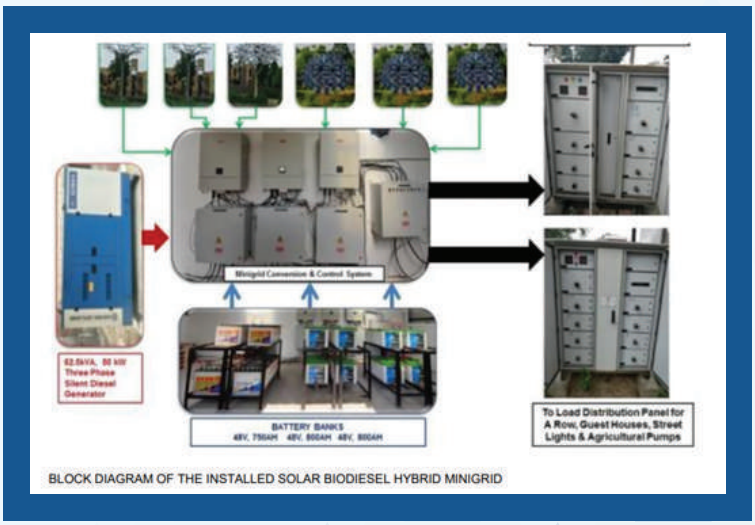
SALIENT FEATURES

A hetero-structured photocatalyst based system has been developed which show the the photocurrent density 7 mA cm-2 (many folds higher than that of reported in literature for any niobate photocatalyst) and 12,000 µmol g-1 h -1 H2 generation rate (TRL LEVEL-4/5).

An inexpensive carbon based photocatalyst system has been developed which show the H2 generation rate of the order of 21,000 µmol g-1h-1. (TRL LEVEL-4).

MAJOR RAW MATERIALS:

Solar Panels, Diesel Generator, Biodiesel, Cables, Power conversion system, communication systems.



BLOCK DIAGRAM OF THE INSTALLED SOLAR BIODIESEL HYBRID MINIGRID