Fuel Cells And Advanced Technologies
Chapter 91

ACROSS

1. The part of the PEM fuel cell that contains the membrane, catalyst coatings, and electrodes is known as the ____________.
2. Hybridization tends to increase efficiency in vehicles with conventional drive trains, as energy that was once lost during braking and otherwise normal operation is instead stored for later use in a high-voltage battery or ____________.
3. The chemical reaction in a fuel cell is the opposite of ____________.
4. A ____-____ _______ uses the fuel cell as its only source of power.
5. The Proton Exchange Membrane fuel cell is also known as a ____.
6. A ____-____ _______ would also have an electrical storage device that can be used to power the vehicle.
7. The fuel-cell design that is best suited for automotive applications is the ____________.
8. It is more common for hundreds of fuel cells to be built together in a ____-____ _____.
9. There are a number of different types of fuel cells, and these are differentiated by the type of ___________ that is used in their design.
10. Hydrogen is only an _______ ______, as energy must be expanded to generate the hydrogen and store it so it can be used as a fuel.

DOWN

1. Methanol has a higher _______ _______ than gaseous hydrogen because it exists in a liquid state at normal temperatures, and is easier to handle since no compressors or other high-pressure equipment is needed.
2. Hydrogen is an excellent fuel because it has a very high _______ _______ when compared to an equivalent amount of fossil fuel.
3. Ultracapciator cells are based on ____________, in which two activated-carbon electrodes are immersed in an organic electrolyte.
4. A ____ ____ is an electrochemical device in which the chemical energy of hydrogen and oxygen is converted into electrical energy.
5. One of the major challenges for engineers in this regard is the fact that the heat generated by the fuel cell is classified as ____________.