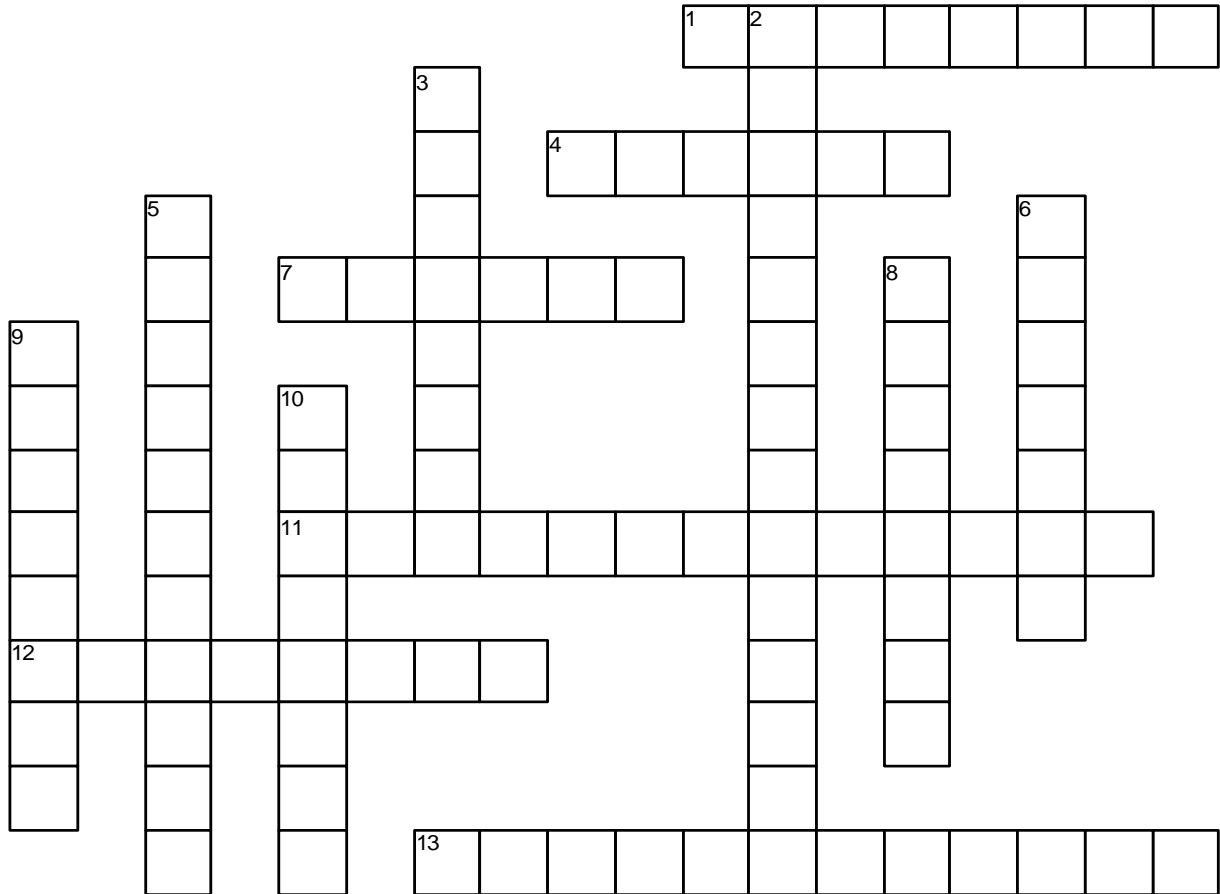


Fuel Cells and Advanced Technologies

Chapter 92



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ACROSS

- 1 A _____ is an electrochemical device in which the chemical energy of hydrogen and oxygen is converted into electrical energy.
- 4 The fuel-cell design that is best suited for automotive applications is the _____ exchange Membrane (PEM).
- 7 A fuel-cell vehicle (FCV) uses the fuel cell as its only source of power, whereas a fuel-cell _____ vehicle (FCHV) also has an electrical storage device that can be used to power the vehicle.
- 11 While hydrogen can be used as a fuel, it is not an energy source. Instead, hydrogen is only an _____, as energy must be expended to generate the hydrogen and store it so it can be used as a fuel.
- 12 A _____-_____ vehicle (FCV) uses the fuel cell as its only source of power, whereas a fuel-cell hybrid vehicle (FCHV) also has an electrical storage device that can be used to power the vehicle.
- 13 The chemical reaction in a fuel cell is the opposite of _____.

DOWN

- 2 _____ cells are based on double-layer technology, in which two activated carbon electrodes are immersed in an organic electrolyte.
- 3 The part of the PEM fuel cell that contains the membrane, catalyst coatings, and electrodes is known as the _____ Electrode Assembly (MEA).
- 5 _____ Charge Compression Ignition (HCCI) is a combustion process.
- 6 The Proton Exchange Membrane fuel cell is also known as a _____ electrolyte Fuel Cell (PEFC).
- 8 One of the major challenges for engineers in this regard is the fact that the heat generated by the fuel cell is classified as _____-_____ heat.
- 9 Hydrogen is an excellent fuel because it has a very high _____ energy when compared to an equivalent amount of fossil fuel.
- 10 A single fuel cell by itself is not particularly useful, as it generates less than 1 volt of electrical potential. It is more common for hundreds of fuel cells to be built together in a _____-_____ stack.