

Classification of fuel cells.

1) Based on the type of electrolyte.

- i) Phosphoric Acid fuel cell (PAFC)
- ii) Alkaline fuel cell (AFC)
- iii) Polymer Electrolyte Membrane fuel cell (PEMFC)
or Solid Polymer fuel cell (SPFC)
- iv) Molten Carbonate fuel cell (MCFC)
- v) Solid Oxide fuel cell (SOFC)

2) Based on the types of the fuel and oxidant

- i) Hydrogen (Pure) - Oxygen (Pure) fuel cell
- ii) Hydrogen rich gas - air fuel cell
- iii) Hydrazine - Oxygen/hydrogen peroxide fuel cell.
- iv) Ammonia - air fuel cell
- v) Synthesis gas - air fuel cell.
- vi) Hydrocarbon (gas) - air fuel cell.
- vii) Hydrocarbon (liquid) - air fuel cell.

3) Based on operating temperature

- i) Low temperature fuel cell (below 150°C)
- ii) Medium temperature fuel cell ($150^{\circ}\text{C} - 250^{\circ}\text{C}$)
- iii) High temperature fuel cell ($250^{\circ}\text{C} - 800^{\circ}\text{C}$)
- iv) Very high temperature fuel cell ($800^{\circ}\text{C} - 1100^{\circ}\text{C}$)

4) Based on Application

- i) fuel cell for space applications
- ii) fuel cell for vehicle propulsion
- iii) fuel cell for submarines.
- iv) fuel cell for defense applications
- v) fuel cell for commercial applications.

5) Based on the chemical nature of Electrolyte.

- i) Acidic electrolyte type
- ii) Alkaline electrolyte type
- iii) Neutral electrolyte type