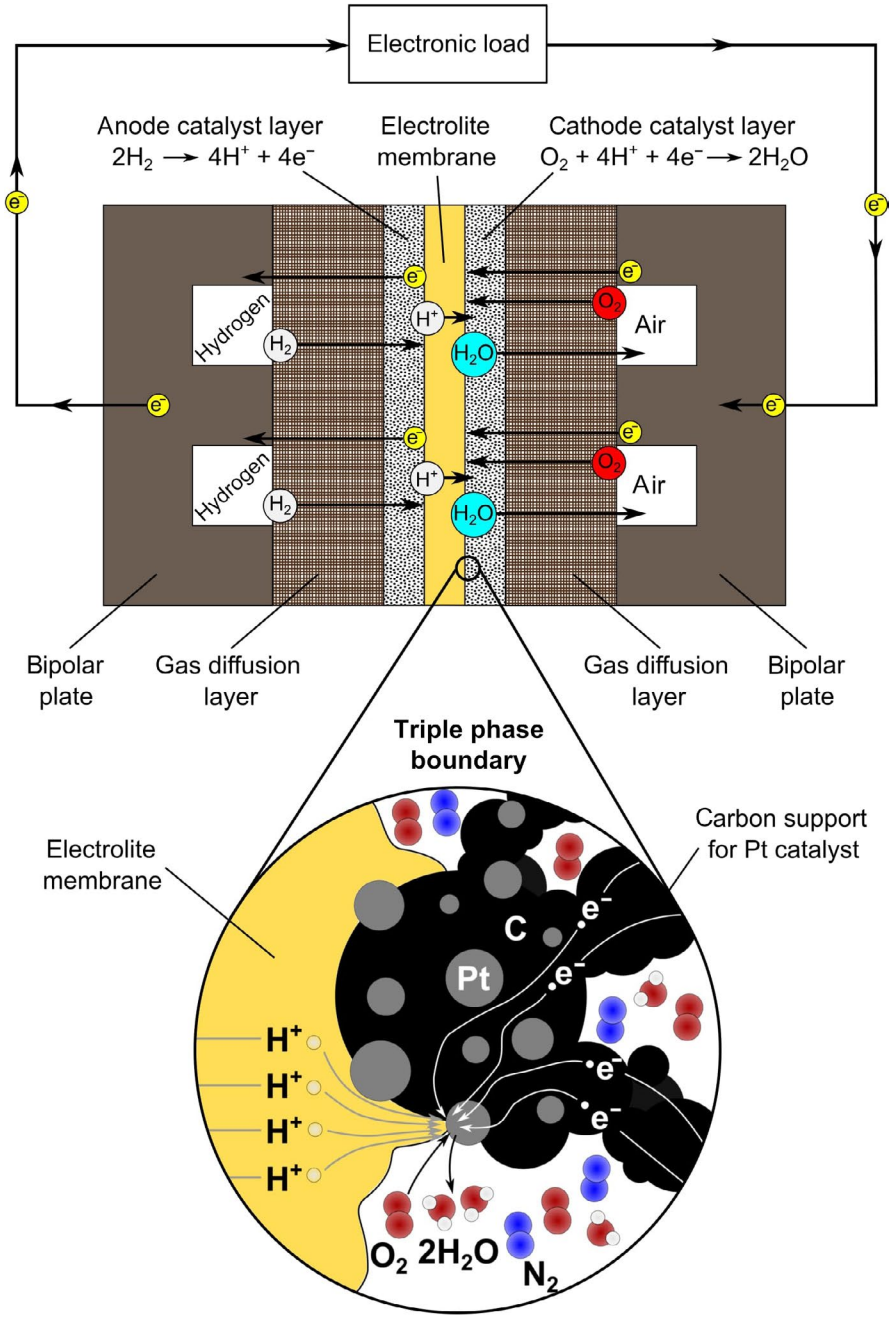


**FIGURE 1** Operating principle of a PEMFC

are described in detail in the publicly available deliverable D2.1[37] of the HyTechCycling project.

Hazardous materials are those which are dangerous or have a harmful effect on human health or the environment. Hazardousness in D2.1 of the HyTechCycling project was assessed according to the Priority List of Toxic Substances[38] and the Handbook on the Toxicology of Metals.[39] To determine the scarcity of the FCH materials, the EU criticality methodology was used with two assessment criteria[40]: economic importance (EI) and supply risk (SR). In Table 1, the critical materials are presented according to the EU commission and EU criticality methodology.

**TABLE 1** 2017 EU critical raw materials list40

| **2017 Critical Raw Materials (27)** | | | |
|---|---|---|---|
| Antimony | Fluorspar | LREEs | Phosphorus |
| Baryte | Gallium | Magnesium | Scandium |
| Beryllium | Germanium | Natural graphite | Silicon metal |
| Bismuth | Hafnium | Natural rubber | Tantalum |
| Borate | Helium | Niobium | Tungsten |
| Cobalt | HREEs | PGMs | Vanadium |
| Coking coal | Indium | Phosphate rock | |