

ABSTRACT

A fuel cell which can directly extract electric power from a polysaccharide, such as starch. A fuel electrode 1 is formed by immobilizing with an immobilizer, on an electrode 11 comprised of, e.g., carbon, an enzyme responsible for decomposing a polysaccharide into monosaccharides, an enzyme responsible for decomposing the monosaccharide formed, a coenzyme (e.g., NAD^+ or NADP^+) which forms a reductant due to the oxidation reaction in the monosaccharide decomposition process, a coenzyme oxidase (e.g., diaphorase) for oxidizing the reductant of the coenzyme (e.g., NADH or NADPH), and an electron mediator (e.g., ACNQ or vitamin K3) for receiving electrons generated due to the oxidation of the coenzyme from the coenzyme oxidase and delivering the electrons to the electrode 11. The fuel cell comprises the fuel electrode 1 and the air electrode 5 that sandwich an electrolyte layer 3.