Hybrid Microbial-Enzymatic Fuel Cell

Technology #ua15-110

Invention:

This invention is a fuel cell that uses microbial reacts as an energy source. This process allows for continuous maintenance of the open circuit voltage of the fuel cell over the same time period without replacement of the active media. Even without media replacement the fuel cell designed runs stably making it more practical for industrial applications.

Background:

Enzymatic and microbial fuel cell offers a couple advantages over the standard metal based fuel cell. Enzymes are relatively easy to mass-produce. Enzymes are also specifically designed to process organic compounds such as sugars and alcohols, which are common in nature. Because sugars and other biofuels can be grown and harvested on a massive scale, the fuel for enzymatic biofuel cells is extremely cheap and can be found in nearly any part of the world, making this technology an extraordinarily attractive option from a logistics standpoint and for those concerned with the adoption of renewable energy sources.

Advantages

- Offers intriguing solution to generate power in remote areas
- Has high power densities
- Allows continuous maintenance of the open circuit voltage of the fuel cell without replacement media

Applications

Lead to many advances in the fields of:

- Mining
- Processing/refining
- Chemical synthesis
- Compounding
- Recycling