Acta Scientific Applied Physics

Volume 2 Issue 2 February 2022

Short Communication

Securing Clean Modern Energy Services: Fuel Cells

Islam M. Al-Akraa*

Department of Chemical Engineering, Faculty of Engineering, The British University in Egypt, Egypt

***Corresponding Author:** Islam M. Al-Akraa, Department of Chemical Engineering, Faculty of Engineering, The British University in Egypt, Egypt.

Received: January 07, 2022

Published: January 21, 2022

The security of clean modern energy services is essential for socioeconomic development and poverty eradication. Right now, the capability to secure energy from green, affordable, and accessible resources stands among the important criteria measuring the potential strength of governments and the living standard they offer.

For long time, fossil fuels (coal, petroleum and natural gas) represented the major source in the world energy production and consumption. However, fossil fuels, which were principally formed by anaerobic decomposition of buried dead organisms typically for millions of years, are expected soon to be deficient or even vanished, particularly with the rapid growth of world's population, the increase in the living standard of whole societies, and the urgency to launch new industries in developing countries that ultimately exceed the production capacity of fossil fuels.

In parallel, climate legislations are continuously issued to reduce CO2 emissions that typically associate burning of fossil fuels, and policy actions are taken to encourage renewable energy-based industries. These all are stimulating a quick transition into a new era dealing with renewable clean energy systems.

In this regard, fuel cells (FCs) appeared promising not only as a complimentary asset in renewable plants to restore excess electricity that is typically saved in the form of hydrogen by passing through electrolyzers, but also as power sources for several stationary, portable and emergency backup power applications. In fact, the enhanced efficiency, reliability, robustness, safety and moving flexibility of FCs have made them recommended for these applications.