

R&D activities of fuel cell Research at KFUPM

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Abstract

Development of systems with reduced emission of pollutants is one of the major challenges of this century. Fuel cells promise to provide clean and renewable source of energy, which can operate on many fuels. They are promising candidates for transportation and portable power source applications. These applications include battery replacement for portable telephones and computers, power sources in remote areas, etc. Fuel cells can also work using other fuels such as hydrocarbons including methanol either directly or indirectly. Since there is plenty of hydrocarbons resources available in the Gulf region such as gasoline, naphtha, and methane/natural gas etc., they can be utilized in the fuel cell to produce clean power without combustion. There has been tremendous research effort in other parts of the world, especially the Western world for the development of fuel cells. Research at KFUPM is focused on two different aspects, fuel for fuel cells (reformat feed) and PEM fuel cell system. Our research group at KFUPM is actively involved in fuel cell research since 1980s. Current focus is to develop PEM fuel cell system emphasizing three different aspects: (A) developing novel low cost proton conducting membranes, (B) developing multifunctional catalyst system and (C) development of hydrocarbon based fuel processing systems. In this communication research activities and/ongoing projects undertaken at KFUPM for fuel cell development will be presented.

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