A Historical Perspective of Fuel-Cell Technology in the 20th Century

T. F. Fuller and M. L. Perry
UTC Fuel Cells
195 Governor's Highway
South Windsor, CT 06074

In honor of the 100th anniversary of The Electrochemical Society, a retrospective look at the development of fuel-cell technology over the past 100 years will be presented.

The development of fuel cells can be traced back over 160 years to Sir William Grove's invention in 1839. The history of these very early years have been described elsewhere (1,2). Additionally, comprehensive technical reviews of fuel-cell technology are also available (*e.g.*, 3, 4). Therefore, this paper will emphasize the progress on fuel cells that has been presented in the Journal of the Electrochemical Society and other ECS publications.

This historical review will include all the major types of fuel cells (*e.g.*, AFC, PEFC, PAFC, MCFC, and SOFC). The intended and potential applications of these various fuel cell types will also be discussed. We will review the significant advances that have occurred, and how these developments have been influenced by external factors. A look at future developments that could greatly aid the commercialization of fuel cells will also be included, as well as a brief overview of potential future market areas and new applications.

References

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2. A. J. Appelby,"From Sir William Grove to Today: Fuel Cells and the Future," *J. of Power Sources*, **29**, 3 (1990).
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4. S. Gottesfeld, "Polymer Electrolyte Fuel Cells," Advances in Electrochemical Science and Engineering, Vol. 5, (R. Alkire, H. Gerischer, D. Kolb, and C. Tobias, eds.), p. 145, Wiley VCH, Weinheim, Germany (1997).