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Preface

The *Journal of Power Sources* was first published in 1976 under the editorship of D.H. Collins. Since that time, there has been extensive world-wide development of electrochemical power sources of diverse types. In the early years, research papers devoted to the advancement of lead-acid and high-temperature batteries featured strongly. Recent volumes, however, have seen a marked shift of emphasis towards lithium batteries and fuel cells. There have also been major changes in the markets for energy storage. For example, the annual market for rechargeable batteries for portable electronic equipment has grown from millions of US dollars for highly specialized applications in 1976, to a mass market today which amounts to over a billion US dollars and is growing rapidly. As we look towards the future we also see major changes about to take place in automotive batteries. The 12-V battery, which has been the sole electrochemical power source in automobiles for some 40 years, appears to be due for progressive displacement by a 36-V battery (and a 42-V power web) in some vehicles, and by various types of hybrid electric system in others. In both cases, the electrical functions of the vehicle powered by the new battery will be greater than before, and there is no guarantee that all the batteries involved will be lead-acid.

In keeping with the ever-growing interest in power source technology, the *Journal of Power Sources* has expanded significantly. For example, four volumes were published in 1976, seven in 2000, and six have already appeared in the first seven months of 2001. During this period, the *Journal* has played an important role in the early recognition of

important emerging technologies. Our series of Special Issues devoted to lithium batteries, starting with the Rome meeting in 1982, have followed the tremendous growth of this now key technology from its infancy. Our publication of the proceedings of the Grove Fuel Cell Symposia, which started in London in 1989, exposed the potential importance of these systems to a wider audience of both strategists and researchers. The growth of papers on fuel-cell technology now indicates that another important power source may be reaching commercialization.

As we celebrate 25 years of publication of the *Journal of Power Sources*, we consider it appropriate that the occasion be marked by the production of a Special Volume. Accordingly, Volume 100 is comprised of a collection of invited papers from authors who have provided state-of-the-art reviews of the major power sources. The volume leads off with a thought-provoking article devoted to the theme of 'global energy sustainability'. We do hope that you will find this Special Volume both interesting and informative.

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