EDITORIAL

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The last decade has significant advances in the rechargeable battery technology for both the military and commercial applications. The fascination all over the world with rechargeable lithium batteries is driven by their superior performance, by environmental necessity, by potential consumer market and also by fundamental research.

Lithium is the lightest and the active metal among all other ones; one molar lithium can supply a specific energy about 3860 Ah/kg while they lose their electron. This value is much higher than all other classic electrode materials, such as Zn (820 Ah/kg) and Ni/Cd (40 Ah/kg). Therefore, lithium or lithium-ion batteries can be used as the lightest and most compact power sources for replacing petrol. In 1993 roughly \$600 millions worth of primary and rechargeable lithium batteries were sold at wholesale internationally; it represents 8–10% consumer market of portable electrochemical energy sources. The predicted growth rate for rechargeable batteries is 12–15% per year to the year 2000.

The publication of this special issue of *Active and Passive Electronic Components* meet this intense international interest in rechargeable lithium batteries. It focuses on the preparation of nanocrystalline electrode materials and nanocrystalline effect in electrochemical characterization. An article concerning to new high voltage cathode will be published. These papers show the research topics representative of some of the most active and original areas of electrode material study. It is hoped that the articles included here aid the reader in gaining a better understanding of some new research field.

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