

GETTING BEYOND LIB FOR AUTOMOTIVE – COMMERCIALIZATION REALITIES

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R&D scientists and engineers continue to develop new chemistries and materials claimed as potential replacements for today's LIB technology. However, many of these discoveries may have an uncertain future in automotive beyond the technical journal circuit due to practical barriers to commercialization that are not well understood early in the design process. Early identification of challenges and issues that must be overcome for manufacturing and commercialization success can prevent avoidable expenditure of research dollars, or redirect focus to more fertile avenues.

It is accepted that battery cost reduction is the key to enabling meaningful market penetration of electrified vehicles, and competitive battery costs cannot be achieved without state of the art mass production. The unique manufacturing and processing challenges associated with several commonly proposed replacements for today's LIB technology will be considered and contrasted with traditional LIB manufacturing processes. To support this comparison, an overview of incumbent high-volume battery manufacturing processes will be provided, and the 'new' steps required as next-gen technology enablers will be evaluated for promise and implementation potential. Some of the critical keys to successful battery technology transition from lab to pilot scale to market will be highlighted, with a focus on automotive applications for vehicle electrification.