

Abstract

The thermodynamics of battery safety

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Accelerating rate calorimetry is well suited to studying both the thermokinetics and thermodynamics of chemically reactive exothermic systems. Originally developed as a tool to aid the chemical and allied industries, the technique has gained considerable popularity within the battery manufacturing community.

The THT accelerating rate calorimeter has a number of options available, designed to study batteries during cycling (KSU) and abuse (BSU). The Gibbs free energy (ΔG) of a system may be determined and used as an indicator of hazard potential. Furthermore, changes in ΔG based on calorimetric and electrometric data may be used to study the effects of cycling on battery efficiency. © 2001 Published by Elsevier Science B.V.

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