

Battery Safety

Use & Abuse



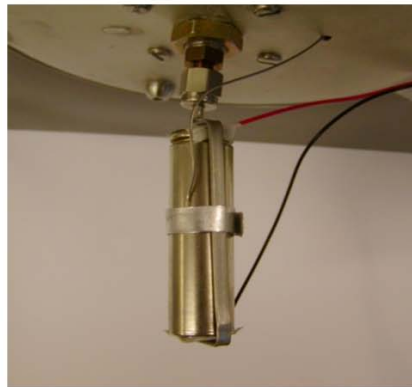
Amount of heat produced by batteries – implementing use and abuse conditions within the calorimeter... simulate the charge/discharge profiles to quantify heat effects, measure the thermal effect associated with over-charging, short-circuiting, nail penetration, crush

Additional Summary Information

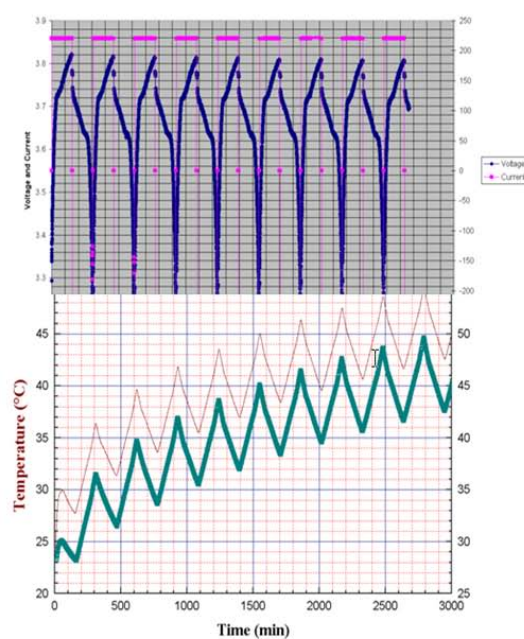
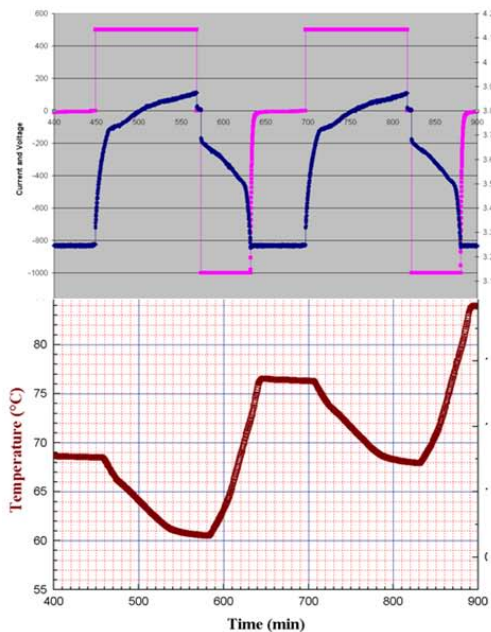
Using the THT ES EV Accelerating Rate Calorimeter systems or the BPC cells, batteries, modules, (smaller) packs may be tested using methods that will give use or abuse conditions within the calorimeter.

To test under conditions of 'use' simply requires the battery under test to be subjected to charge/discharge cycling that is appropriate for the application. This may be done using the THT KSU option (an internal cycler) or a customer provided external cycler.

Large and small batteries are shown ready to test – to implement simple 'use' charge/discharge conditions.



Classic raw data is shown below, key information is amount of heat in charge and discharge and variation with cycle number, age, rate and depth of discharge



thermal hazard technology

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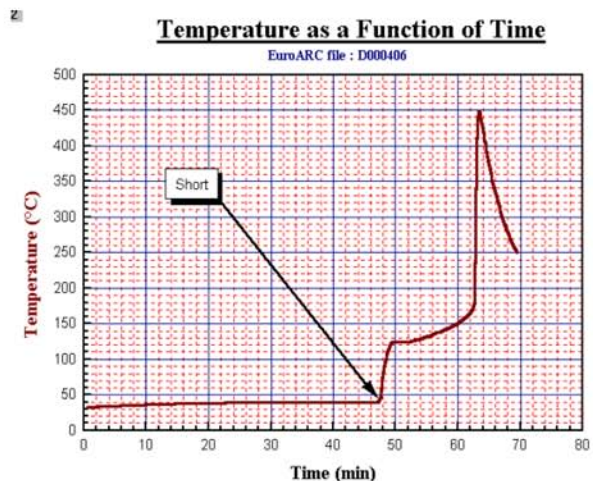
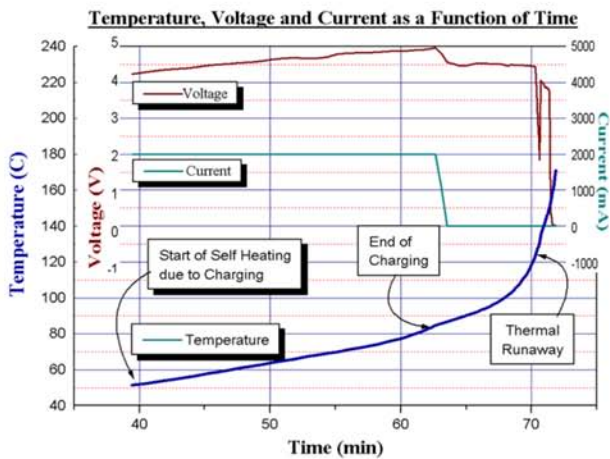
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The photos below show batteries before and after overvoltage (or for shorting) and nail penetration testing



Raw data from such abuse testing (overvoltage and short) is illustrated



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