Battery SOH(State of Health)

The SOH is an indication of the point which has been reached in the life cycle of the battery and a measure of its condition relative to a fresh battery.It is a subjective measure in that different people derive it from a variety of different measurable battery performance parameters which they interpret according to their own set of rules. It is an estimation rather than a measurement. This is fine so long as the estimate is based on a consistent set of rules but it makes comparisons between estimates made with different test equipment and methods unreliable.

Any parameter which changes significantly with age, such as cell impedance or conductance, can be used as a basis for providing an indication of the SOH of the cell. Changes to these parameters will normally signify that other changes have occurred which may be of more importance to the user. These could be changes to the external battery performance such as the loss of rated capacity or increased temperature rise during operation or internal changes such as corrosion.

An alternative method of specifying the SOH is to base the estimation on the usage history of the battery rather than on some measured parameter. The number of charge - discharge cycles completed by the battery is an obvious measure, but this does not necessarily take into account any extreme operating conditions experienced by the battery which may have affected its functionality. It is however possible to record the duration of any periods during which the battery has been subject to abuse from out of tolerance voltages, currents or temperatures as well as the magnitude of the deviations. From this data a figure of merit representing the SOH can be determined by using a weighted average of the measured parameters.

Battery usage (or abusage) data can be stored in memory in the BMS in a "History Chip" and downloaded when required. This alternative method does not use any external test equipment but it adds complexity and cost to the battery.