

5646509**BATTERY CAPACITY TEST AND ELECTRONIC SYSTEM UTILIZING SAME**

Berglund Neil C; Rosedahl Todd J; Steele Steven W
Kasson, MN, UNITED STATES assigned to
International Business Machines Corporation

A battery capacity test and electronic system implementing the same tests both the high and low discharge capacities of a back-up battery to ensure that the battery is capable of handling both a short term, high discharge load and a long term, low discharge load. The battery capacity test is particularly suitable for use in an electronic system which, upon occurrence of a power outage, converts from an operational mode to a power saving mode during a conversion time. High discharge capacity testing is performed using a safety net where the primary power source of the electronic system is switched to a reduced testing voltage output, rather than shut off or disconnected, so that the primary power source can take over quickly in the event of a back-up power supply failure during the test.

5646534**BATTERY MONITOR FOR ELECTRIC VEHICLES**

Kopera John J C Rochester Hills, MI, UNITED STATES assigned to Chrysler Corporation

A battery monitor for monitoring the voltage and temperature of the batteries associated with a battery pack of an electric vehicle. The battery monitor includes an opto-isolator that electrically separates an isolated portion of the battery monitor connected to the batteries from a non-isolated portion of the battery monitor that transmits battery voltage and temperature signals to a vehicle controller of the electric vehicle. The battery monitor is positioned proximate to a battery tub holding the batteries of the electric vehicle so that high voltage wires connected to the batteries within the battery tub are limited in length for safety purposes. Further, a limited number of wires transmitting the battery voltage and battery temperature signals from the battery monitor to the vehicle controller are required. The battery

monitor can include a multiplexer that selectively transmits the battery voltage and temperatures signals to the opto-isolator in a controlled manner, or can include a series of other opto-isolators that transmit high power battery signals to a capacitor to be charged where the charge on the capacitor is representative of the voltage of a particular battery.

5646825**COOLING DEVICE FOR COOLING ELECTRIC AND ELECTRONIC COMPONENTS AND BATTERIES IN A SWITCH CABINET**

Huttenlocher Werner; Knoblauch Harald Calw Stammheim, GERMANY assigned to Otto Pfannenberger Electro-Spezialgeratebau GmbH

The cooling device serves for the cooling of electric and electronic components and of batteries in a switch cabinet, in which case in a housing of the cooling device, a first heat exchanger for the formation of a first cooling system for the chamber accommodating the electric and electronic components and a second heat exchanger for the formation of a second cooling system that is independent of the first cooling system for the chamber accommodating the batteries are disposed, wherein both heat exchangers are supplied from a common compressor.

5648714**METHOD AND DEVICE FOR CHARGING AND CONDITIONING BATTERIES**

Eryou Douglas F; Federman Vladimir Winnipeg, CANADA assigned to Manitoba Ltd

A battery charging and conditioning circuit is provided wherein application of a charging current to a battery is alternated with the application of short current spikes. The impedance characteristic and no load voltage characteristic of the battery are monitored and processed to select the charging current and spiked current applied to the battery. Processing of the impedance characteristic and no load voltage characteristic of the battery is made by a processing unit. The circuit used to generate the

short current spikes responds to a timing signal produced by an oscillator by opening and closing a switch to release charge stored in a charge storage device such as an inductor, the released charge comprising a current pulse for application to the battery.

5648715

**METHOD AND APPARATUS FOR
CURRENT COMPENSATION OF A
BATTERY IN A CHARGER**

Patino Joseph; Ford Robert B. Pembroke Pines, FL, UNITED STATES assigned to Motorola Inc

A battery charging system is capable of maintaining a fully charged battery without overcharging or undercharging the battery regardless of the operating mode of the radio. Charging system includes a charger which senses the capacity of the battery through a capacity resistor at a capacity sense terminal. The charger also senses the radio current through the same capacity sense terminal using a current sensing device. Charger continuously compensates for the current drain presented by the radio.

5648716

**POWER CONTROL CIRCUIT FOR A
BATTERY CHARGER**

Devilbiss Roger S; Quisenberry Tony. Dallas, TX, UNITED STATES

A power control circuit for improved charging of a battery. The circuit includes a rectifying device to provide rectified alternating current when receiving an input from an electrical power source; a comparator device; circuitry for providing a predetermined voltage to the inverting input of the comparator device; circuitry for providing a predetermined voltage to the non-inverting input of the comparator device; regulator circuitry whose output is connected to the battery; switching circuitry connected between the regulator circuitry and the rectifying device; and control circuitry which is coupled between the switching circuitry and the output of the comparator device. The control circuitry activates the switching circuitry for a predetermined

time, determined by the output from the comparator device, to allow the rectified alternating current to reach a desired voltage across the regulator circuitry, at which time the control circuitry deactivates the switching circuitry, wherein the value of the desired voltage is determined by the voltage inputs to the comparator device.

5648717

**BATTERY CHARGE GAUGE WITH
CURRENT INTEGRATOR AND METHOD
FOR GAUGING BATTERY CHARGE**

Uskali Bo. Schaumburg, IL, UNITED STATES assigned to Motorola Inc

A method for gauging battery charge in which current flowing from a battery is integrated and a charge counter counts charge. Voltage (V_b) across the battery is measured and compared with a voltage threshold. The counter is reset to a predetermined value when the measured voltage crosses the voltage threshold.

OTHER BATTERIES

5633097

ELECTROCHEMICAL CELLS

Miller William. Alloway, Ayr, UNITED KINGDOM

PCT No. PCT/GB94/00735 Sec. 371 Date Oct. 6, 1995 Sec. 102(e) Date Oct. 6, 1995 PCT Filed Apr. 6, 1994 PCT Pub. No. WO94/23465 PCT Pub. Date Oct. 13, 1994. A method of forming arrays of electrochemical cells, and improved arrays of cells formed thereby, in which layers of electrically conductive material, layers of cathode material and layers of anode material are applied to first and second flexible, electrically insulating surfaces in respective predetermined patterns such that the areas of applied anode and cathode material corresponding to anodes and cathodes of individual cells on each of said surfaces are formed in electrical connection with or isolation from one another by said