# Boletín VT

# COCHE ELÉCTRICO

4º trimestre 2010

4

Vigilancia Tecnológica

## Noticias

El pasado 2 de diciembre de 2010 se celebró en la sede de IBM en Madrid la jornada "El vehículo eléctrico: un nuevo modelo de eficiencia energética", a la que asistieron más de 200 empresarios y expertos de la industria del automóvil, del sector de la energía y del sector público.

La apertura de la jornada corrió a cargo del alcalde de Madrid, Alberto Ruiz – Gallardón, siendo clausurada por el Ministro de Industria, Turismo y Comercio, Miguel Sebastián.

Durante el desarrollo de la jornada, fabricantes, reguladores y compañías energéticas analizaron las oportunidades y retos que plantea la implantación del vehículo eléctrico en los entornos urbanos.

Miguel Sebastián anunció que el Gobierno destinará 255 millones para apoyar el vehículo eléctrico en 2011. Se destinarán 80 millones de euros para incentivar la adquisición de vehículos eléctricos y el resto del presupuesto irá destinado a planes de apoyo a la industrialización del vehículo eléctrico, al desarrollo de las tecnologías de comunicación vinculadas al mismo y a las líneas prioritarias de I+D+i en la que se impliquen componentes o infraestructuras de recarga.

Por otra parte, la Oficina Española de Patentes y Marcas estará presente en la Feria de las energías EGETICA - EXPOENERGETICA que se celebrará entre el 16 y el 18 de febrero de 2011 en la Feria de Valencia. La Feria ofrecerá la plataforma idónea para todas las empresas relacionadas con la generación de energía tanto si son a través de fuentes renovables como de fuentes convencionales. Paralelamente se celebrará Ecoconstrucción, dedicada a la sostenibilidad en Edificaciones y Urbanismo y Eco-Motion, para la Eficiencia Energética en Transporte y Movimiento.

La OEPM acudirá con un stand y aprovechará esta ocasión para presentar el Boletín del Coche Eléctrico, así como otros Boletines que pueden ser de interés para los asistentes de esta Feria, como el Boletín de Energías Renovables y el Boletín del Coche Inteligente

## CONTENIDO:

# Solicitudes de Patente Publicadas

Los datos que aparecen en la tabla corresponden a una selección de las solicitudes de patentes publicadas durante el trimestre. Se puede acceder al documento completo haciendo doble clic sobre el mismo.

## BATERÍAS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010137154 A1 | TOSHIBA KK | Active material used for nonaqueous electrolyte battery for battery pack, contains titanium composite oxide including monoclinic (beta)-type titanium composite oxide as main phase and having above given value of crystalline diameter |
| WO2010137571 A1 | GS YUASA INT LTD | Nonaqueous electrolyte secondary battery used as power supply of e.g. mobile telephone, consists of positive electrode containing active material, negative electrode containing active material and nonaqueous electrolyte |
| WO2010144320 A2 | 3M INNOVATIVE PROPERTIES CO | Thin film electrode used for lithium-ion electrochemical cell, has thin foil comprising polycrystalline aluminum and component which separates and forms precipitates and/or grain boundaries within polycrystalline aluminum |
| WO2010140235 A1 | KYUSHU ELECTRIC POWER CO LTD; MITSUBISHI HEAVY IND CO LTD | Apparatus for calculating state of charge (SOC) of grouped-cells, has representation SOC table that is used for calculating representative SOC based on maximum SOC and minimum SOC calculated by calculation unit |
| WO2010139133 A1 | WANG G | Multipolar type metal ion battery group for electric vehicle, has outer casing fixing battery in integrity so that group is detachably connected with vehicle, and internal electrodes arranged in parallel relative to chassis of vehicle |
| WO2010140260 A1 | TOYOTA JIDOSHA KK | Lithium secondary battery used for vehicles e.g. electric vehicles, has electrode material provided with positive electrode having total pore volume of specified range, and negative electrode, and nonaqueous electrolyte |
| WO2010137101 A1 | TOYOTA JIDOSHA KK | Lithium ion secondary battery of battery pack for, e.g. hybrid vehicle, has thin wall section deformed to interrupt connection between top and current collecting plates, when pressure exerted at battery case is increased |
| WO2010137119 A1 | TOYOTA JIDOSHA KK | Hybrid vehicle has setting unit that sets hybrid driving priority mode as driving mode, irrespective of electrical storage ratio of secondary battery when system start up is performed, not after system breakdown |
| WO2010137156 A1 | TOSHIBA KK | Active material used for nonaqueous electrolyte battery used for battery pack, comprises monocyclic beta-type titanium complex oxide containing element chosen from vanadium, niobium, tantalum, aluminum, gallium and indium |
| WO2010136968 A1 | CARAGLIO A; CARLETTI P | Method for managing and conditioning e.g. photovoltaic (PV) power generation system, involves controlling direct current (DC) to DC converter/power supply unit based on voltage and current of PV module and converter/power supply unit |
| WO2010137353 A1 | NEOMAX MATERIALS CO LTD | Clad plate for lithium ion battery pack, has end of nickel layer extended beyond rear-end of side end surface of aluminum plate, and joined in exposed state to surface of aluminum plate |
| WO2010136863 A1 | NISSAN MOTOR CO LTD | Vehicle battery cooling structure for cooling a battery unit comprises vehicle body, battery unit, and cooling jacket |
| WO2010137307 A1 | HITACHI AUTOMOTIVE SYSTEMS LTD | System for assisting driving of vehicle e.g. electric vehicle, has processing unit which search routes passing through charging spots in response to route search requests while maintaining remaining battery power higher than zero |
| WO2010137462 A1 | NISSAN MOTOR CO LTD | Battery charging control device for e.g. series type hybrid electric vehicle, has charging control unit controlling power generation device such that value of battery energy is less than upper limit value and greater than lower limit value |
| WO2010138176 A1 | CARLSON S A | Lithium battery used in vehicle, has cathode assembly with cathode current collector layer that is interposed between cathode layers and porous separator layer on side of one cathode layer opposite to cathode current collector layer |
| WO2010138177 A1 | CARLSON S A | Lithium ion battery used in e.g. hybrid vehicle, has separator/electrode assembly and electrode having current collector layers arranged between electrode layers of different polarities, respectively |
| WO2010138178 A1 | CARLSON S A | Separator/cathode assembly of electric current generation cell e.g. lithium ion battery, has separator layer formed on cathode layer side opposite to cathode current collector layer so that cathode layer is coated on separator layer |
| WO2010135283 A2 | TRANS IONICS CORP | Sodium-sulfur battery, used e.g. in electric vehicles and power storage, comprises compartment comprising sodium containing salt, compartment comprising metallic sodium, solid electrolyte layer, storage tanks, pumps and electrical contacts |

| | | |
|---|---|---|
| WO2010135331 A1 | POWERGENIX SYSTEMS INC | Rechargeable nickel zinc cell for high power applications such as power tools and hybrid electric vehicles, comprises a negative zinc electrode having zinc powder particles and nickel hydroxide particles, and a nickel positive electrode |
| WO2010133934 A1 | NISSAN MOTOR CO LTD | Component mounting structure for electric vehicle, has charger and high power electric components that are arranged on longitudinally opposite sides of battery with respect to longitudinal direction of vehicle main portion |
| WO2010131364 A1 | TOSHIBA KK | Negative electrode active material used for nonaqueous electrolyte battery for battery pack, contains compound having crystal structure of monoclinic titania, and exhibiting specified half-value width of highest intensity peak |
| WO2010131520 A1 | TOYOTA JIDOSHA KK | Sealed secondary battery for electric vehicle, has casing whose internal pressure is raised so that contact section swells outside to disconnect connection between contact section and current collection board at negative electrode end |
| WO2010129866 A1 | BOSCH GMBH ROBERT | Electrochemical cell for portable electronics and electric and hybrid-electric vehicles comprises first electrode, second electrode, separator, active material, and variable volume reservoir |
| WO2010134161 A1 | TOYOTA JIDOSHA KK | Air cell e.g. lithium air secondary battery used in e.g. electric vehicle, has oxygen solvent having hydrophobicity and oxygen dissolvability that is arranged between oxygen supplying unit and electrolyte layer |
| WO2010131473 A1 | NIPPON STEEL CHEM CO LTD | Active material used for negative electrode for lithium secondary battery, is obtained by mixing specified amount of raw coke and calcined coke obtained from coal and/or petroleum, and baking resulting coke material |
| WO2010135371 A2 | BSST LLC | Thermal management system of battery mounted in electric vehicle, has circuit that is selectively switchable to place thermoelectric assemblies either in series or parallel electrical communication with one another |
| WO2010131700 A1 | GS YUASA INT LTD | Battery assembly for electric vehicles, has insulating board that is adhered integrally on inside portion of metal board of end plates |
| WO2010129875 A1 | BOSCH GMBH ROBERT | Electrochemical cell for portable electronics and electric and hybrid-electric vehicles comprises negative electrode, positive electrode, separator, first active material, and second active material |
| WO2010131476 A1 | NIPPON STEEL CHEM CO LTD | Negative electrode active material for lithium secondary battery used for e.g. vehicles, is obtained by mixing specified amount of calcined coke, and adding specified amount of phosphorus compound and boron compound |
| WO2010131709 A1 | NAT INST MATERIALS SCI | Negative-electrode material for lithium secondary battery, is mixed material of electroconductive material and electrode active material which reductionally generates elemental substance exhibiting alloying reaction with lithium |
| WO2010131401 A1 | MATSUSHITA DENKI SANGYO KK; PANASONIC CORP | Electrode used for e.g. lithium-ion secondary battery, contains electrode active material layer arranged on surface of collector, and contains electrode active material which is capable of absorbing and desorbing lithium ions |
| WO2010132753 A1 | SINOELECTRIC POWERTRAIN CORP; SINOELECTRIC POWERTRAIN INC | Battery module for powering electric vehicle e.g. electric car used in battery pack, has coolant that dissipates localized heat produced by battery cells throughout heat exchanger |
| WO2010129834 A1 | BOSCH GMBH ROBERT | Electrochemical cell for portable electronics and electric and hybrid-electric vehicles comprises first electrode |
| WO2010129625 A2 | AXION POWER INT INC | Energy storage device useful in a hybrid electric vehicle, comprises an electrode comprising lead and lead dioxide, a separator between the lead and lead dioxide electrodes, and an aqueous solution electrolyte containing sulfuric acid |
| WO2010130760 A1 | MAGNA STEYR FAHRZEUGTECHNIK AG&CO KG | Battery unit for electric vehicle, comprising stack of lithium ion cells interleaved with cooling sheets, has sheet edges bent over to form directed nozzles |
| WO2010128370 A1 | TORAY TONEN SPECIALTY SEPARATOR CO | Multi-layer microporous membrane useful in a secondary battery, comprises first and third layers, and a second layer located between the first and third layers |
| WO2010123269 A2 | LG CHEM LTD | Additive for electrochemical device i.e. lithium secondary battery, has outer covering layer covering surface of inner core, and volume extensibility material fused at prescribed temperature in inner core |
| WO2010131262 A3 | REVA ELECTRIC CAR CO PVT LTD | Method for identifying condition associated with energy system e.g. electric vehicles at remote location, involves sending determined deviation to remote location if determination of deviation is performed by Energy management system (EMS) |
| WO2010125649 A1 | TOYOTA JIDOSHA KK | Charging maintenance method of lithium ion secondary battery, involves maintaining state of charge (SOC) of battery to target SOC |
| WO2010124892 A1 | EVONIK LITARION GMBH | Ceramic composite material for isolating anode in relation to cathode in secondary battery of e.g. hybrid car, has planar carrier substrate with perforation that is covered by porous coating on one of sides of carrier substrate |

| | | |
|---|---|---|
| WO2010123536 A1 | CHANG C; CHANG T; KUO H C | Cover assembly for lithium-ion battery container used in e.g. home energy storage applications comprises cover for sealing top opening of container, current collecting post having gaps, top/bottom flanges, and first continuous polymer body |
| WO2010124560 A1 | BYD CO LTD | Method of preparing electrode plate of lithium-ion battery for electric vehicle, involves filling slurry within current collector which is dried at specific temperature and pressure |
| WO2010123091 A1 | NISSAN MOTOR CO LTD | Assembled battery for e.g. electric vehicle, has auxiliary equipment that is mounted to battery module side surface in which extending portion of stack element is provided |
| WO2010124172 A2 | CALIFORNIA INST OF TECHNOLOGY; CNRS CENT NAT RECH SCI | Electrode useful for electrochemical generator comprises a solvent having metal ions and oxygen dissolved in it; a fluorinated or metalloprotein oxygen dissolution enhancer; a metal oxide dissolution enhancer; and a current collector container |
| WO2010125395 A1 | GYENES INNOVATIONS LTD | Rechargeable battery for powering an electric vehicle comprises at least one removable and replaceable electrically rechargeable cell, where the cell is encapsulated within a capsule compatible with transport along a pipeline |
| WO2010126252 A2 | SK ENERGY CO LTD | Apparatus for stacking inner cell stack of secondary battery e.g. nickel-cadmium battery for e.g. digital camera, inserts anode and cathode plates simultaneously into electrode insertion space formed by folding separator in zigzag shape |
| WO2010125467 A1 | TOYOTA JIDOSHA KK | Solid electrolyte material that can react with an electrode active material to form a high-resistance portion, used for all-solid battery e.g. lithium battery for electric vehicles comprises fluorine |
| WO2010126589 A1 | LIGHTENING ENERGY | Modular battery for, e.g. car, has interconnector between lower and upper electrode surfaces, which electrically connect electrode surface with side periphery of interconnector |
| WO2010122922 A1 | DAINIPPON PRINTING CO LTD | Negative electrode plate for nonaqueous electrolyte secondary battery e.g. lithium ion secondary battery, comprises electrode active material layer containing elemental metal or its oxide, arranged on collector |
| WO2010122819 A1 | SHARP KK; UNIV KYOTO | Positive electrode active material used for non-aqueous secondary battery, comprises lithium- and manganese-containing transition metal oxide, suboxide having same oxygen arrangement as transition metal oxide and tin (IV) oxide |
| WO2010121540 A1 | BYD CO LTD | Controllable rectification device for use in electric motor of electric vehicle, makes upper bridge-arm switch and lower bridge-arm switch in respective switch element group to conduct or break synchronously |
| WO2010117134 A3 | AMOGREENTECH CO LTD | Composition for producing positive electrode for electricity storage device, has binder provided with anodic active material, conductive agent and carbon fiber precursor, where material is made of lithium manganese or activated charcoal |
| WO2010122874 A1 | COMMONWEALTH SCI&IND RES ORG; FURUKAWA BATTERY CO LTD | Lead acid battery used in hybrid electric vehicle, has carbon-mix coating layer that contains activated carbon having specific center point angle, when examined by X-ray diffractometry |
| WO2010123023 A1 | NISSAN MOTOR CO LTD | Assembled battery mounted on electric vehicle, has battery controller that is attached to battery module in state where battery controller faces predetermined gap |
| WO2010125268 A3 | PEUGEOT CITROEN AUTOMOBILES SA | Power supplying method for hybrid power unit of rechargeable hybrid vehicle, involves executing function, which controls power supply from energy source, until exhaustion of quantity of finite energy so as to assure intrinsic gain |
| WO2010118910 A1 | BOSCH GMBH ROBERT | Internal resistance determination method for battery cell of e.g. traction battery in wind-turbine, involves calculating internal resistance of battery cell as quotient of difference between voltages with difference between currents |
| WO2010116633 A1 | MATSUSHITA DENKI SANGYO KK; PANASONIC CORP | Protective circuit for battery pack, has external protection unit that performs protection processing when power consumption exceeds power threshold-value set to be more than maximum value in power consumption of external circuit |
| WO2010118909 A1 | BOSCH GMBH ROBERT | Internal resistance determination method for battery cell of battery, involves calculating internal resistance of battery cell as quotients of difference of two applied voltages and difference of two flowing currents |
| WO2010119577 A1 | NIPPON JIDOSHA BUHIN SOGO; NIPPON SOKEN INC; TOYOTA JIDOSHA KK | Non-contact power supply equipment for vehicles e.g. hybrid vehicle, has control apparatus that controls electric power feeding based on parameter that change according to distance between power transmission and receiving resonator |
| WO2010116732 A1 | IDEMITSU KOSAN CO LTD | Glass used for glass ceramics for lithium cell for apparatus e.g. electric vehicles, is aggregate of solid electrolyte particles containing lithium, phosphorus and sulfur |
| WO2010118310 A2 | UNIV MICHIGAN | Reconfigurable battery system useful for electric vehicles comprises a set of battery circuits, an input switch, a parallel switch, a bypass switch, a series switch, and a control unit |

| | | |
|---|---|---|
| WO2010114015 A1 | MITSUI MINING&SMELTING CO LTD | Positive electrode active material for lithium battery, contains boron compound and spinel-type lithium transition metal oxide, and whose content of magnetically attracted substance is below specified value |
| WO2010113271 A1 | MITSUBISHI HEAVY IND CO LTD | Secondary battery e.g. lithium ion battery of electrical storage system for electric vehicle, has several holders positioned from short sides on face on which electrode terminals are positioned, so as to hold group of electrodes |
| WO2010113272 A1 | MITSUBISHI HEAVY IND CO LTD | Secondary battery e.g. lithium ion secondary battery of electrical storage system for electric vehicle, has insulating auxiliary sheets arranged in specified portion and mutually connected by fixing tape |
| WO2010113455 A1 | SANYO ELECTRIC CO LTD | Battery module used in electric vehicle, has voltage detecting line to connect positive or negative electrode terminal of battery cell with voltage detecting circuit, which is formed with substrate having flexible material |
| WO2010113273 A1 | MITSUBISHI HEAVY IND CO LTD | Secondary battery e.g. laminated type lithium ion secondary battery used in electric vehicle, has insulation assistance sheets that are positioned at positions which oppose both sides of electrode group from lengthwise direction side |
| WO2010113403 A1 | PANASONIC CORP | Manufacture of anode used for lithium ion battery, involves cleaning anode active material layer using cleaning liquid containing aprotic solvent, hydrohalide(s) and/or solute containing fluorine-containing lithium salt |
| WO2010114281 A3 | LG CHEM LTD | Voltage detecting member for use in battery module of battery system in e.g. electromobile, has connector set on front support unit, and conductive sensing units surface-connected by electrode terminal connection parts of battery cells |
| WO2010114676 A1 | TONEN CHEM CORP | Microporous membrane useful as a battery separator film in battery e.g. lithium ion secondary battery, comprises an ethylene-based polyolefin produced with single site catalyst, a second polyethylene, and a third polyethylene |
| WO2010114673 A1 | TONEN CHEM CORP | Microporous membrane for use as battery separator film, comprises layers, with at least one layer comprising polymer having melting point and molecular weight of preset range, and has shutdown temperature less than preset value |
| WO2010114675 A1 | TONEN CHEM CORP | Microporous membrane used as battery separator film e.g. for lithium ion secondary battery, lithium-polymer secondary battery, nickel-hydrogen secondary battery or nickel-cadmium secondary battery, comprises polyolefin copolymer |
| WO2010113268 A1 | MITSUBISHI HEAVY IND CO LTD | Lithium ion secondary battery used for electric vehicle and electrical storage system, has positive electrode containing lithium-containing complex oxide, and lithium manganese silicon oxide, and negative electrode |
| WO2010114299 A2 | LG CHEM LTD | Medium-to-large-sized battery module for use as power source for electromobile e.g. hybrid electric vehicle, has wire-type connection element for sending and receiving measured voltage of unit modules |
| WO2010114671 A1 | TONEN CHEM CORP | Multilayer microporous membrane used in battery separator for battery e.g. primary or secondary lithium ion battery, comprises polymer and has specific shutdown temperature and storage stability |
| WO2010113254 A1 | MITSUBISHI HEAVY IND CO LTD | Secondary battery for use in electrical storage system, has insulating auxiliary sheets that are arranged in position which faces both sides of electrode group, and is connected to insulating tape |
| WO2010113270 A1 | MITSUBISHI HEAVY IND CO LTD | Secondary battery e.g. laminated lithium ion secondary battery used in electric vehicle, has holding unit with plane in contact with insulating auxiliary sheet that is arranged in vicinity of four end portions of can |
| WO2010114317 A3 | LG CHEM LTD | Battery module for use in medium- to large-sized battery pack of e.g. electromobile, has radiation members arranged between cell interfaces, where heat generated from battery cells is removed by heat conduction through radiation members |
| WO2010114672 A1 | TONEN CHEM CORP | Microporous membrane used in battery separator for battery e.g. lithium ion secondary battery, comprises first polyolefin in specific amount and having well-balance permeability, shutdown temperature and pin puncture strength |
| WO2010113502 A1 | NIPPON STEEL CORP | Raw material for metallic-sheath case of secondary battery, has plating layer comprising nickel layer and copper-nickel layer arranged between nickel layer and steel plate |
| WO2010114287 A2 | LG CHEM LTD | Composite used for electrode active material for secondary battery, contains material chosen from metals and metalloids, and material chosen from metals, compound containing metals and compound containing metals and metalloids |
| WO2010110035 A1 | TOSHIBA KK | Negative electrode active material for nonaqueous electrolyte battery, contains titanium oxide compound having monoclinic crystal structure and face distance of specific plane above preset value |
| WO2010106793 A1 | TOMOEGAWA CO LTD; TOMOEGAWA SEISHISHO KK | Separator used for electrical storage devices e.g. lithium-ion secondary battery, is obtained by laminating two or more fiber layers which are synthetic fiber layer containing synthetic fiber and synthetic resin-based binder |
| WO2010118072 A2 | BATTELLE MEMORIAL INST; HAMMERSTROM D J | Method for managing charging and discharging of batteries used in vehicle, involves defining actual charge rate falling within generated sets of charging constraints and providing current flow between battery and battery charger |

| | | |
|---|---|---|
| WO2010110443 A1 | MITSUBISHI CHEM CORP | Material used for negative electrode, comprises carbon material containing amorphous carbon and graphite particles, and another carbon material, having specified value of face distance, crystallite size, tap density and Raman value |
| WO2010113710 A1 | HOKURIKU TORYO KK; NAMICS CORP | Electrode material for use in active-material paste of lithium ion secondary batteries, consists of metal produced by thermal decomposition and/or reduction from metal source compound, precipitated on active material |
| WO2010110441 A1 | MITSUBISHI CHEM CORP | Material used for negative electrode, comprises carbon material containing amorphous carbon and graphite particles, and another carbon material, having specified value of face distance, crystallite size, tap density and Raman value |
| WO2010111412 A2 | INFINIREL CORP | Prediction method for failure in power electronics for energy generation and energy storage units for commercial power plants involves analyzing input data and output data to identify trends predictive of failure of photovoltaic inverter |
| WO2010108888 A1 | BEHR GMBH&CO | Energy storage unit i.e. battery cell, temperature regulation method for e.g. hybrid passenger car, involves controlling control element by regulation unit to regulate flow of cooling unit for regulation of temperature of storage unit |
| WO2010107039 A1 | NIPPON CHEM IND CO LTD | Lithium-phosphorus complex oxide-carbon composite for positive electrode active material, contains aggregate of lithium-phosphorus complex oxide particles which is aggregated through electroconductive carbon material |
| WO2010111375 A2 | UNIV FLORIDA RES FOUND INC | New lithium nickel oxide compound, useful as material for a cathode of a battery, which is a lithium-ion battery |
| WO2010108885 A1 | BEHR GMBH&CO | Device i.e. cooling plate, for tempering lithium ion battery for electric vehicle, has fluid channel arranged in laminated plate, and isolating mechanism i.e. vacuum isolating mechanism, arranged in plate and designed as hollow chamber |
| WO2010106618 A1 | TOYOTA JIDOSHA KK | Processing of battery component of e.g. lithium cell, involves dissolving lithium in process liquid, while generating hydrogen sulfide by contacting component and process liquid, and recovering positive-electrode active material |
| WO2010101830 A1 | BOSCH GMBH ROBERT | Battery system for use in e.g. portable electronic, has open circuit potential curve exhibited by predetermined cell with slope greater than slope of other open circuit potential curve exhibited by other curve |
| WO2010109293 A1 | TOYOTA JIDOSHA KK | Temperature adjustment structure for adjusting temperature of electricity storage apparatus e.g. battery of vehicle, has passageway that causes gas to pass through space between electricity storage elements in predetermined direction |
| WO2010101395 A3 | LG CHEM LTD | Secondary battery used as power supply for wireless communication apparatus, contains negative electrode, separator membrane, electrolyte and positive electrode including material which contains lithium-nickel-manganese cobaltate |
| WO2010106877 A1 | DENKI KAGAKU KOGYO KK; SEI CORP; SEI KK | Lithium ion secondary battery for electric vehicles, consists of positive electrode comprising lithium iron phosphate and electroconductive material laminated on collector |
| WO2010105869 A1 | BOSCH GMBH ROBERT | Electric vehicle, has battery charger providing AC voltage required by generator to start internal combustion engine, where battery charger converts DC voltage diverted from traction battery into AC voltage required by generator |
| WO2010104202 A1 | SUMITOMO CHEM CO LTD | Composite metal oxide for active materials of electrodes, especially positive electrodes, comprises sodium, and magnesium, calcium, strontium and/or barium, and manganese, iron, cobalt and/or nickel, in molar ratio of preset range |
| WO2010101179 A1 | NTT FACILITIES INC; SHIN KOBE ELECTRIC MACHINERY CO LTD | Lithium ion battery for e.g. electric vehicles, has battery container containing non-aqueous electrolyte comprising organic solvent mixture and liquid flame retardant having boiling point close to boiling point of organic solvent |
| WO2010104077 A1 | ASAHI KASEI E-MATERIALS CORP | Laminated separator used for electrical storage device, consists of different polyolefin microporous layers laminated sequentially, with at least one layer containing inorganic filler having primary particle diameter of preset range |
| WO2010103816 A1 | MATSUSHITA DENKI SANGYO KK; PANASONIC CORP | Charging/discharging control circuit for power supply device used in vehicle, has control cancellation unit that turns on switching unit, if difference between terminal voltages is less than preset decision voltage |
| WO2010105083 A1 | MEDIAN WIND LLC | Battery exchange system for electric/hybrid vehicles, has battery exchange station with robotic arm that engages removing batteries which is inserted into battery tray of car |
| WO2010101177 A1 | NTT FACILITIES INC; SHIN KOBE ELECTRIC MACHINERY CO LTD | Nonaqueous electrolytic battery e.g. lithium secondary battery used for e.g. portable device, has battery container containing electrode composite, nonaqueous electrolyte and flame retardant |
| WO2010107340 A1 | EHLIONT CO LTD; ELIONT CO LTD; ELIONT LLC | Anode material, useful e.g. for electrochemical cells based on lithium-titanium spinel, comprises doping components of chromium and vanadium to achieve a composition of lithium-titanium-chromium complex |

| | | |
|---|---|---|
| WO2010127644 A2 | SULA M | Circuit arrangement for vehicle power-supply system, has control module whose input is connected to exhaust gas oxygen sensor, and bidirectional bus of alternator connected to engine control unit |
| WO2010121405 A1 | CHANG T; CHEN T | Driving device for car, has controlling circuit receiving signal so that battery supplies power to drive power generator, where power driving generator is cut off and generator is driven by engine so as to charge battery through circuit |
| WO2010124861 A2 | DAIMLER AG | Electrically drivable motor vehicle, has electronic switching arrangement comprising electronic circuit breakers, where vehicle batteries are individually or combinely interconnected to electric consumer by circuit breakers |
| WO2010142211 A1 | CHERY AUTOMOBILE CO LTD; WUHU POWER TECHNOLOGY RES CO LTD | Electric automobile driving system, has motor driving electric automobile to run, battery supplying power to motor, and generating set supplying power to motor and/or battery, where generating set comprises engine and generator |
| WO2010127911 A1 | AUTO KABEL MANAGEMENT GMBH; AUTO KABEL MANAGEMENTGE SELLSCHAFT MBH | Electric vehicle safeguarding device, has detection mechanism for determining humidity and activating separators with detected humidity so as to electrically separate electrical lines of automotive battery |
| WO2010127153 A1 | POWERGENIX SYSTEMS INC | Making nickel hydroxide positive electrode for battery, involves mixing hydroxide solution and strong oxidizing agent with nickel hydroxide at specific temperature to produce modified nickel hydroxide; and preparing electrode mixture comprises engine and generator |

...volver a CONTENIDO

## SUPERCONDENSADORES

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010140031 A2 | TOYOTA JIDOSHA KK | Power supply device for motor vehicle, has relay for discharging electric power stored in smoothing capacitor when battery and electric power bus line are disconnected from motor by main relay |
| WO2010138744 A2 | ISE CORP | Vehicle energy storage system for hybrid electric vehicle, includes controller reconfiguring vehicle to operate vehicle energy storage according to secondary configuration taking into account electrically bypassed faulty energy pack |
| WO2010133330 A1 | LIBERTY ELECTRIC CARS LTD | Hybrid propulsion system for use in vehicle operations, includes battery system, capacitor system, and kinetic energy system controlled by controller to supply energy to motor drive and or mechanical drive |
| WO2010131340 A1 | TOYOTA JIDOSHA KK | Power converter device of vehicle, has control device which is supplied by source voltage, when impact is acted on vehicle |

...volver a CONTENIDO

## SISTEMAS DE RECUPERACIÓN DE ENERGÍA; FRENOS REGENERATIVOS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010133344 A2 | VOLKSWAGEN AG | Dynamic braking system for vehicle with twin control loops with regenerative braking and crossed control |
| WO2010128652 A1 | HONDA MOTOR CO LTD | Brake device for, e.g. hybrid vehicle, increases hydraulic braking force based on vehicle speed during changeover from regenerative braking state to hydraulic braking state |
| WO2010129473 A1 | BOSCH GMBH ROBERT | Energy storage system for use in hybrid vehicle, has reversible pump/motor transferring torque to rotor when operating as motor, and receiving torque from rotor when operating as pump |
| WO2010130908 A1 | RENAULT SAS | Torque e.g. resisting torque, controlling method for e.g. hybrid vehicle, involves imposing brake and acceleration regulation strokes on pedal movement, where brake regulation stroke is continuous decreasing function relative to charge |
| WO2010124659 A1 | CONG Y | Wind-electricity motor vehicle has wind resistance engine with impeller that is driven by wind resistance air flowing into housing, to rotate so as to generate auxiliary power |
| WO2010123469 A1 | ILAOEIK S; STOLLMANN V; SUCHOMEL J | Flywheel propulsion mechanism of skyline yarder used at agricultural industry, has winding device equipped with brake system connected by clutch to variator that is connected to flywheel by reversing gearbox and other clutch |
| WO2010116873 A1 | HONDA MOTOR CO LTD | Brake device for, e.g. hybrid vehicle, has slave cylinder that eliminates invalid stroke in hydraulic pressure braking before switching from regenerative braking to hydraulic pressure braking |
| WO2010117853 A1 | UNIV VANDERBILT | Elastic accumulator for hydraulic regenerative braking system linked to hydraulic drive system of passenger vehicle, has housing which surrounds bladder to limit the radial expansion of the bladder to a predetermined point of expansion |
| WO2010109210 A1 | RICARDO UK LTD | Apparatus for coupling the coupling elements of flywheel and driveshaft for use in vehicle, has magnetic flux element which is arranged between coupling elements to provide density region of relatively high magnetic flux density |
| WO2010109208 A1 | RICARDO UK LTD | Flywheel for providing coupling force between first and second movable section used for energy storage in vehicles has coupling unit which is incorporated in membrane and is impermeable to fluids while separating first and second sections |
| WO2010111881 A1 | CHERY AUTOMOBILE CO LTD | Power system for hybrid vehicle i.e. car, has integrated starter generator driving system functioning as cabin power assembly, where system works in starter generator driving mode, regenerative braking mode or four-wheel driving mode |

...volver a CONTENIDO

## MÁQUINAS ELÉCTRICAS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010140509 A1 | NIPPON STEEL CORP | Non-oriented electromagnetic steel sheet for iron core of motor of electric vehicles, contains specified amount of silicon, aluminum, manganese, titanium, bismuth, carbon, phosphorus, sulfur, nitrogen and iron |
| WO2010140305 A1 | AISIN AW CO LTD; DENSO CORP; NIPPONDENSO CO LTD; TOYOTA JIDOSHA KK | Power generation source control apparatus for hybrid vehicle, has hybrid driving (HV) control unit that switches between electric driving (EV)-driving mode and HV-driving mode based on comparison result |
| WO2010140243 A1 | TOYOTA JIDOSHA KK; TOYOTA JIDOSHA KK | Divided stator of e.g. motor used in e.g. electric vehicle, has nonskid mechanism e.g. bottom hole formed in end coil surface that prevents slip of insulator in coil end surface of divided stator core |
| WO2010141822 A1 | WALDEN M K; WARDENCLYFFE TECHNOLOGIES LLC | Permanent magnet piston motor for use in e.g. electric vehicle, reciprocates piston positioned within piston assembly cylinder by field interactions between magnetic poles of piston and cam magnets, to rotate crankshaft |
| WO2010139582 A1 | VALEO SYSTEMES THERMIQUES | Heat management device for vehicle i.e. electric motor vehicle, has condenser and heat exchanger that are arranged with respect to each other such that coolant passing through heater core is heated |
| WO2010137653 A1 | TOYOTA JIDOSHA KK | Control apparatus of hybrid vehicle, sets first torque of motor generator to be larger than torque calculated from operating condition of vehicle, if drag torque is generated in brake mechanism during positive rotation of generator |
| WO2010137123 A1 | TOYOTA JIDOSHA KK | Speed change control apparatus of power transmission device used in vehicle, performs downshift of automatic transmission unit with specific coast down-shift vehicle speed when reviving with electric motor for running during coasting |
| WO2010136730 A1 | PEUGEOT CITROEN AUTOMOBILES SA | Power transfer device for electric/partially electric vehicle, comprises metal cooling sole capable of supporting electric circuits on two of opposite surfaces, openings provided in sole, and elastic conductive elements i.e. Springs |
| WO2010137100 A1 | TOYOTA JIDOSHA KK | Hybrid vehicle has control unit that controls internal combustion engine and electric motor, when electrical driving priority is set and predetermined conditions for setting driving power is less than threshold value |
| WO2010137087 A1 | NISSAN DIESEL KOGYO KK; NISSAN DIESEL MOTOR CO LTD | Power transmission device of hybrid vehicle e.g. hybrid heavy duty truck, transmits motor/generator driving force to transmission, by releasing main clutch and motor brake, and fixing drive shaft brake |
| WO2010134163 A1 | TOYOTA JIDOSHA KK | Hybrid vehicle has internal combustion engine and electric motor which are driven at electrical driving priority mode which is set during startup process at preset electrical storage ratio, for heating purification catalyst |
| WO2010134402 A1 | NISSAN MOTOR CO LTD | Control apparatus of electric vehicle, controls power supply source to supply power obtained by reduced frequency component equivalent to torsional vibration of driving system from power supply to driving motor |
| WO2010131334 A1 | TOYOTA JIDOSHA KK | Control apparatus of hybrid vehicle, has motor that drives engine so that predetermined amount of oil quantity is supplied, when count of motor drive counter is more than predetermined driving counter |
| WO2010131093 A1 | TOYOTA JIDOSHA KK | Sprung mass damping control system of vehicle, has sprung mass damping control amount adjusting apparatus that adjusts phase or amplitude of sprung mass damping control signal related to control amount according to situation |
| WO2010128542 A1 | NISSAN DIESEL KOGYO KK; NISSAN DIESEL MOTOR CO LTD | Power transmission device of hybrid vehicle e.g. truck, has planetary gear mechanism which has sun gear that is provided between other end side of motor output shaft and engine drive shaft system |
| WO2010121696 A4 | LI-TEC BATTERY GMBH | Electro-chemical cell for supplying electric current to electric motor in hybrid drive system of vehicle, has separator for separating negative electrode from positive electrode, where negative electrode consists of lithium titanate |

| | | |
|---|---|---|
| WO2010122634 A1 | TOYOTA JIDOSHA KK | Electric motor mounted in wheel of vehicle, has continuously-variable transmission mechanism that varies ratio of rotation speed of input disc connected to rotor and rotation speed of output disc |
| WO2010122735 A1 | VALEO THERMAL SYSTEMS JAPAN CORP; ZEXEL VALEO CLIMATE CONTROL KK | Drive motor for air blower of hybrid vehicle air conditioner, has stator assembly that is attached to motor interior space of housing, such that outer surface of housing is exposed to ventilation path of case |
| WO2010125279 A1 | PEUGEOT CITROEN AUTOMOBILES SA | Method for optimizing energy consumption of plug-in hybrid vehicle, involves determining parameter according to distance covered by vehicle between two successive recharges of vehicle on sector and electric power available in storage |
| WO2010119551 A1 | TOYOTA JIDOSHA KK | Control apparatus of hybrid vehicle, controls rotational speed of supplying power element according to residual amount of backlash, such that clutch element being fixed to lock element is relieved |
| WO2010116818 A1 | HONDA MOTOR CO LTD | Power transmission device for hybrid vehicle, has carrier that decelerates motive power transmitted from sun and ring gears and transmits it to output shaft through specific sub-input shaft |
| WO2010116689 A1 | TOYOTA JIDOSHA KK | Cooling structure of e.g. electric motor of e.g. transaxle mounted in hybrid vehicle, has oil circulation path comprising passages which circulate oil to heat-emitting units when oil surface is risen to specific heights respectively |
| WO2010113733 A3 | TOYOTA JIDOSHA KK; VISTEON GLOBAL TECHNOLOGIES INC | Noise reduction arrangement for three-phase brushless motor for hybrid electric vehicle, has switching elements that are turned ON or OFF in reversed phase with respect to each other, so that respective current loops are generated |
| WO2010113465 A1 | HITACHI METALS LTD | Alloy for sintered magnet used for motor, contains specified amount of rare earth element having light rare earth element and heavy rare earth element, boron, additional element and transition metal |
| WO2010113707 A1 | HONDA MOTOR CO LTD | Drive device of hybrid vehicle, has unidirectional and bidirectional power transmitting unit that transmits respective unidirectional and bidirectional rotational power to drive shaft when path is from electric motor to drive shaft |
| WO2010113559 A1 | AISIN AW CO LTD | Hybrid drive device i.e. parallel hybrid drive device, for hybrid vehicle, has engine startup control unit starting up engine by controlling rotational speed of rotary electric machine to determined target rotational speed |
| WO2010108577 A2 | ROLLS ROYCE PLC | Magnetic harmonic gearbox for use with e.g. wind turbine, has ferromagnetic element that includes modulation unit to modulate current supplied to electromagnet to produce rotating magnetic field |
| WO2010109949 A1 | AISIN AW CO LTD | Control apparatus for vehicle drive system, has control unit is provided to control transmission to realize one-way transmission during idling |
| WO2010111164 A3 | BORG WARNER INC | Electro-mechanical energy conversion device for use as motor generator in drivetrain of hybrid electric vehicle, has torsion bar including end for transmission of torsional force between device and mechanical energy source |
| WO2010110343 A1 | HONDA MOTOR CO LTD | Power transmission device for hybrid vehicle, has carrier that decelerates motive power transmitted from sun gear with reaction force of ring gear maintained in fixed state and transmits motive power to output shaft through gear |
| WO2010109760 A1 | HITACHI LTD | Sintered magnet for rotary electric machines, has fluorine, heavy-rare-earth element, oxygen, and carbon unevenly distributed in grain boundary of sintered magnetic powder, with high carbon concentration in boundary triple point |
| WO2010109573 A1 | TOYOTA JIDOSHA KK | Drive device for hybrid vehicle, has clutches that engage engine shafts with each other, in which one clutch is adapted in engaged state when operating force for operating engagement and disengagement of one clutch |
| WO2010103642 A1 | TOYOTA JIDOSHA KK | Apparatus for preventing false lock of rotary element used in hybrid vehicle, judges false lock state of rotary element, if absolute value of angular acceleration of motor generator is larger than judgment reference value |

| | | |
|---|---|---|
| WO2010104008 A1 | MEIDENSHA CORP | Current source inverter device for driving permanent magnet motor of e.g. electric vehicle, calculates adjustment angle which is error in phase difference between motor current and internal induced voltage of motor |
| WO2010124518 A1 | UNIV WUHAN TECHNOLOGY | Automatic variable speed driving system for motor used in electric vehicle, has system controller whose signal output ends are connected to electromagnetic valves of electromagnetic valve bank |

...volver a CONTENIDO

## CONVERTIDORES, INVERSORES

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010137128 A1 | TOYOTA JIDOSHA KK | Apparatus for controlling converter mounted in electric vehicle, performs control calculation for adjusting electric current flowing into reactor, into target electric current by changing control output of voltage control unit |
| WO2010137328 A1 | SANDEN CORP | Motor control apparatus has abnormality diagnosis unit that judges whether abnormality of overcurrent detection unit is raised, when inspection voltage from inspection unit has no overcurrent |
| WO2010134160 A1 | TOYOTA JIDOSHA KK | Heat exchanger for inverter apparatus mounted in hybrid vehicle, has fin mounted inside frame, in which front ends of the front surface-side fins or rear surface-side fins are welded to frame |
| WO2010134191 A1 | TOYOTA JIDOSHA KK | Heat exchanger used for cooling device of power converter device mounted in e.g. electric vehicle, has pins that are fixed between fin portions of cooling fin unit when fin portions are separated from base portion |
| WO2010134179 A1 | TOYOTA JIDOSHA KK | Over-current protection control apparatus for motor drive unit mounted in e.g. hybrid vehicle, changes duty ratio of switching element so that peak value of electric current flowing into reactor is reduced below maximum value |
| WO2010131317 A1 | TOYOTA JIDOSHA KK | Heat exchanger for cooling semiconductor element of inverter device, has frame portion that includes elastic deformable portions along insulating plate arrangement surface at frame outer surface |
| WO2010122861 A1 | NISSAN MOTOR CO LTD | Inverter protection apparatus for drive device of electric vehicle, has control section that supplies current to switching element of pre-determined switching module, when short-circuit failure in switching module is detected |
| WO2010126677 A1 | 3M INNOVATIVE PROPERTIES CO | Lithium-ion electrochemical cell useful in power electronic devices e.g. wind turbines, train engines comprises a positive electrode containing a mixed metal oxide, and negative electrode having lithium titanate nanoparticles |
| WO2010119662 A9 | PANASONIC CORP | Synchronous electric motor driving system for electric power generation system in vehicle, makes three-phase inverters to generate alternating current electric power using mutually different carrier frequency among three-phase inverters |
| WO2010114088 A1 | KOMATSU KK | Control device for transformer coupling type booster mounted in hybrid construction machine, changes phase of signals applied to switching elements of inverters so that voltage between terminals of transformer windings is zero |
| WO2010110445 A1 | HONDA MOTOR CO LTD | Semiconductor device used as power converter device of electric motor used in vehicle, has resin layer that exposes only surface of metal plate on opposite side of insulating substrate and portion of lead electrodes |
| WO2010122651 A1 | MITSUBISHI ELECTRIC CORP | Power converter device for electric vehicle, has controller that controls operation of inverter by fixing pulse width modulation rate of inverter to preset level |
| WO2010104080 A1 | TOYOTA JIDOSHA KK | Ebullient cooling device used in inverter cooling system of hybrid vehicle, has partition/ guide plates that are arranged between cooling channels, so that generated bubbles are guided to vapor discharge path |

...volver a CONTENIDO

## RECARGA DE BATERÍAS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010139367 A1 | SINCONO AG | Transfer and charging system of electric/hybrid vehicle e.g. passenger vehicle, has upper electric connector that engages with lower electric connector when vehicle is transferred to charging position from driving position |
| WO2010140664 A1 | J PHONE KK; SOFTBANK MOBILE CORP | Power supply adapter for electric vehicle e.g. car used in electric power supply system, has control unit which controls to open/close power supply lines on basis of received control request from portable communication terminal |
| WO2010140253 A1 | TOYOTA JIDOSHA KK; SOFTBANK MOBILE CORP | Electric vehicle e.g. hybrid vehicle has whole permissible discharge electric energy setting unit which sets sum of allowable discharge electric energies as permissible discharge electric energy |
| WO2010140044 A1 | TOYOTA CHUO KENKYUSHO KK; TOYOTA JIDOSHA KK | Control apparatus for hybrid vehicle, changes status of battery charge temporarily if predetermined condition occurs to fall within first region, and estimates status of battery charge by first estimation method |
| WO2010140213 A1 | TOYOTA JIDOSHA KK | Power source system of e.g. electric vehicle, selects sub-power storage device whose state of charge (SOC) is less than predetermined value as object to be charged and connects selected device to connector |
| WO2010143039 A1 | MATSUSHITA ELECTRIC WORKS LTD; PANASONIC ELECTRIC WORKS CO LTD | Charging stand for electric vehicle installed in e.g. parking lot of apartment house, has outlet sockets to which power source plug of charging cable for charging the vehicle is attached, which is positioned in accommodation empty space |
| WO2010136871 A1 | MATSUSHITA ELECTRIC WORKS LTD; PANASONIC ELECTRIC WORKS CO LTD | Charging stand installed in e.g. service area of driveway, has several outlet socket units that are accommodated in cylindrical portion and comprised with outlet sockets for charging of vehicle |
| WO2010137334 A1 | PANASONIC CORP | Electric charging control circuit of lead acid battery, sets refresh charging electric charge with respect to lead acid battery based on temperature of lead acid battery during insufficient charging period |
| WO2010133329 A2 | LIBERTY ELECTRIC CARS LTD | Electric/hybrid electric vehicle i.e. car, charging system for use in public charging station, has plug including power supply pins, high voltage ground pins, data transmitting pins, billing code pin and short mechanical connection pin |
| WO2010133959 A3 | EATON CORP; BROOKS A G; SAAD S C; SEFF P D; SHARP B J; STORCK G M | Power pedestal used in power output system for providing power to vehicle and structure separate from vehicle has meter electrically connected to meter socket assembly, and to measure electric energy consumed by vehicle and structure |
| WO2010134625 A1 | NISSAN MOTOR CO LTD; SHARP B J | Battery voltage monitoring device useful for monitoring an output voltage of a unit cell in battery modules that are connected in series, comprises integrated circuits, a cascade communication circuit, and a programmable controller |
| WO2010134853 A1 | VOLVO LASTVAGNAR AB | Battery module for battery pack used in energy storage system for driving electric motor of e.g. land vehicle, has module monitoring unit monitoring performance related parameter of cell in module, and storing parameter in memory of unit |
| WO2010128263 A1 | RASTAS H; SHARP B J | System for electrically connecting electric road vehicle to stationary charging station, has side walls and transverse walls authorizing translation movement of male connectors along recess and guiding male connectors in deployed position |
| WO2010132490 A2 | BATTELLE MEMORIAL INST; KINTNER-MEYER M; STORCK G M | Charging control method for rechargeable battery used for electrical vehicles involves controlling adjustment of amount of electrical energy which is used to charge rechargeable battery at different moments in time using price information |
| WO2010131349 A1 | TOYOTA JIDOSHA KK | Charging device for vehicles, has charging electronic control unit (ECU) that compares conductively received power with non-contact received power, and also controls charger based on comparison result |
| WO2010136700 A2 | PEUGEOT CITROEN AUTOMOBILES SA | System for recharging high and low voltage batteries of hybrid vehicle, has direct current/direct current step-down converter comprising high voltage and low voltage terminals respectively connected to high and low voltage batteries |
| WO2010132495 A3 | BATTELLE MEMORIAL INST; STORCK G M | Rechargeable battery charging controlling method for plug-in electric hybrid vehicle, involves controlling amount of electrical energy provided from electrical power distribution system to rechargeable battery |

| | | |
|---|---|---|
| WO2010130607 A2 | AVL SOFTWARE&FUNCTIONS GMBH | Charging system for charging battery for supplying electrical energy of electrical motor vehicle, has switching units provided for separation of connection between converter and motor, before converter is utilized as charging device |
| WO2010128596 A1 | MATSUSHITA DENKI SANGYO KK; PANASONIC CORP | Power supply device for electronic device and vehicle, has switching element that is turned off, when current detected by current sensor is changed by current change pattern corresponding to the on-off sequence |
| WO2010124831 A2 | VOLVO LASTVAGNAR AB | Battery charging system for hybrid electric vehicle, has control unit to register parameter e.g. state of charge of high voltage battery so as to control low voltage in dependence of registered parameter |
| WO2010127783 A1 | SEW EURODRIVE GMBH&CO KG | Charging device for vehicle, has absorbing unit designed as plug-in connector part, mating plug-in connector part connected to plug-in connector part, and another absorbing unit allowing energy store to be charged using galvanic isolation |
| WO2010126894 A1 | ALEVO INC | Battery charger for use in hybrid/battery electric vehicle i.e. car, has charger management unit coupled with charger modules and monitoring battery packs coupled with charger modules, and power connection unit coupled with power sources |
| WO2010128066 A3 | CONTINENTAL AUTOMOTIVE GMBH; STORCK G M | Electrical energy accumulating system for e.g. hybrid vehicle, has overall control unit controlling monitoring and operation of state of energy accumulators arranged in parallel and/or in series with each other |
| WO2010125625 A1 | TOYOTA JIDOSHA KK | Charging connector of charging cable unit, has LED whose one end is coupled to signal of signal line, while coupling other end with node whose electric potential is higher than low level |
| WO2010122393 A3 | TOYOTA JIDOSHA KK | Plug-in hybrid vehicle charging system, has charging control device setting charge amount of accumulation device when determination device determines that waste heat utilization device is to be operated |
| WO2010121721 A2 | SEW EURODRIVE GMBH&CO KG | System for supplying power to vehicle load, has primary conducting system and vehicle, where vehicle has arrangement of secondary windings by which loads of vehicle are supplied from primary conducting system |
| WO2010119460 A1 | ACTUA SRL | Actuating device for interposing between e.g. single-phase electric motor and electric battery in electric powertrain of plug-in type electric/hybrid vehicle, has connection unit configured to recharge electric battery |
| WO2010119320 A1 | NISSAN MOTOR CO LTD | Vehicle component mounting arrangement for electric vehicle, has battery electrically connected to converter with electrical harness, where converter is arranged between inverter and battery with respect to longitudinal direction of vehicle |
| WO2010119327 A1 | NISSAN MOTOR CO LTD | Electric vehicle structure, has intermediate connector releasably connecting wiring portions of electric charging harness with repeatable connecting and disconnecting connection, and charging port to be provided on portion of vehicle |
| WO2010118912 A1 | BOSCH GMBH ROBERT | Method for determining properties e.g. capacity, of traction battery in battery system of e.g. wind turbine, involves starting determination of battery properties when consumer is in standby-operation mode operational state |
| WO2010119097 A3 | RENAULT SAS; STORCK G M | Electric propulsion motor vehicle, has storage battery charging unit with connection terminal connected to negative terminal, and another connection terminal connected to neutral cable of three-phase electric motor |
| WO2010119508 A1 | PIONEER CORP | Electric power supply apparatus for charging device used for electrically driven vehicle, has transmission unit that transmits information on parking area acquired by acquisition unit to user of electric vehicle |
| WO2010115867 A1 | SIEMENS AG | Operating arrangement for use in electric vehicle, has coil arrangement for inductive transmission of electrical energy, where resonance capacitors are connected in series to coil arrangement for resonance adjustment |
| WO2010116566 A1 | TANAKA S | Inductive power supply apparatus for parking vehicle, has control circuit that controls oscillation frequency of oscillation current based on detected capacitor and imaginary currents |
| WO2010115573 A1 | LI-TEC BATTERY GMBH | Method for operating vehicle, involves determining charge condition of electric energy unit, and determining current position of vehicle |

| | | |
|---|---|---|
| WO2010115927 A1 | RWE AG | Charging cable locking device for electric vehicle i.e. car, has charging cable locked with receptacle when closure device is activated, where charging cable is releasable from receptacle when closure device is deactivated |
| WO2010116521 A1 | TOYOTA JIDOSHA KK | Hybrid drive type motor vehicle e.g. hybrid vehicle drives vehicle-mounted device with power discharged from battery and power supplied by utility power supply unit, when voltage between terminals of battery exceeds specific voltage |
| WO2010120622 A3 | WINKELMAN R; STORCK G M | Battery management system for charging and/or supplying DC power from batteries or individual cells to e.g. motor of electric vehicle, has interconnector connected to wiring harness and configured to modify positions occupied by batteries |
| WO2010113902 A1 | TOKYO ELECTRIC POWER CO INC | Electric vehicle e.g. car has ignition control unit that repeals reception of ignition operation when opening detection unit detects open condition of open/close-type cap |
| WO2010113927 A1 | TOKYO ELECTRIC POWER CO INC | Charger for electric vehicle, has controller which detects occurrence of ground fault in charging lines and leakage in vehicle by comparing measured value output by current detector with threshold value |
| WO2010113904 A1 | TOKYO ELECTRIC POWER CO INC | Charging system of electric vehicle, has detection unit that detects close adhering of relays based on output voltage measured value after charging end operation of battery received from charger through vehicle side communication unit |
| WO2010113936 A1 | TOKYO ELECTRIC POWER CO INC | Charging system of charger for electric vehicle, has earth leakage breaker that interrupts electric supply to battery when generation of ground-fault or earth-leakage is detected and abnormality generation of battery is notified |
| WO2010116672 A1 | JAPAN RES INST LTD; NIPPON SOGO KENKYUSHO KK; STORCK G M | Charging control apparatus for battery unit mounted in vehicle e.g. car, has electric charging control unit which charges divided battery groups in parallel with electric power received from external power supply |
| WO2010113917 A1 | TOKYO ELECTRIC POWER CO INC | Ground fault detector of electric vehicle charger, has electric current detector to detect electric current flowing into grounding conductor connected to resistors provided between positive and negative electrode side charging lines |
| WO2010117594 A2 | ILLINOIS TOOL WORKS INC | Charging connection device for use in bumper opening for charging storage battery in e.g. hybrid vehicle, has plug device pulled from connection body for connection with electrical supply and rolled against pre-stress of roller |
| WO2010115926 A2 | RWE AG; DIEFENBACH I | Charging station for electric vehicle, has charging post placed over metallic impact-protecting element such that impact-protecting element is arranged within charging post at mounted state of charging post |
| WO2010112694 A3 | DOW KOKAM FRANCE SAS; SOC VEHICULES ELECTRIQUES SAS | Electric battery e.g. lithium-ion battery, operation securing method for electric or hybrid motor vehicle, involves shunting malfunctioning element such that current does not passes through element in event of malfunction detection |
| WO2010114837 A1 | MEDIAN WIND LLC | Charging system for smart batteries of hybrid vehicle, includes second alternator which is interconnected with a first battery, and step tracer voltage regulator which is interconnected with other batteries |
| WO2010109872 A1 | ITO TADASHI SHOJI KK; ITOCHU CORP; JAPAN RES INST LTD; NIPPON SOGO KENKYUSHO KK | Battery control apparatus mounted in vehicle, has switch control unit to controls switches so as to use less deteriorated battery among batteries by disconnecting more deteriorated batteries from battery circuit |
| WO2010109881 A1 | ITO TADASHI SHOJI KK; ITOCHU CORP; JAPAN RES INST LTD; NIPPON SOGO KENKYUSHO KK | Battery control apparatus mounted in vehicle, has switch control section that controls switches so as to exclude more deteriorated battery from battery circuit and to connect less deteriorated battery in series |
| WO2010109885 A1 | ITO TADASHI SHOJI KK; ITOCHU CORP; JAPAN RES INST LTD; NIPPON SOGO KENKYUSHO KK | Electric power supply apparatus installed in building e.g. house, controls to-be-controlled apparatus e.g. air conditioner equipped in vehicle by transmitting control signal through cable |
| WO2010106648 A1 | TOYOTA JIDOSHA KK | Non-contact receiving device for non-contact electric power feeding system mounted in e.g. electric vehicle, has electric equipment having power receiving antenna that receives electric power from electromagnetic field |
| WO2010107381 A1 | ELECTROENGINE IN SWEDEN AB | Storage pack i.e. battery pack, controlling method for e.g. electric vehicle, involves supplying common feeding voltage to feeding devices, and feeding voltage and current in separate voltage/current branch to sub-group of storage cells |

| | | |
|---|---|---|
| WO2010107905 A2 | GREEN IT INC; GREENITI INC | Electricity distributing system for electric vehicle has coordinator element that is configured to receive vehicle information and information about station from vehicles |
| WO2010108623 A8 | SEW EURODRIVE GMBH&CO KG | Drive system for battery powered vehicle, has electric motor supplied by inverter, rectifier fed by secondary winding, which is supplied from primary winding, where primary winding is inductively coupled with secondary winding |
| WO2010105759 A1 | VAHLE GMBH&CO KG PAUL | Primary-side device for energy transfer system for contactless transferring electric energy to electric vehicle, has phase-opposed currents flowing in respective wires that delimit regions and are arranged in parallel to one another |
| WO2010107382 A1 | ELECTROENGINE IN SWEDEN AB | Control system for energy storage pack used in electric vehicle, has multiple feeding devices, each of at least majority of feeding devices adapted to handle exchange of energy between its subgroup of storage cells and supply module |
| WO2010103639 A1 | TOYOTA JIDOSHA KK | Electric vehicle has power receiving resonator and power cable that are arranged under metallic under frame |
| WO2010135974 A1 | BYD CO LTD | Vehicle charger, has traction battery charge circuit and control communication loop that are connected with rectification voltage-stabilizing circuit, and start battery charge circuit charging start battery pack |
| WO2010142230 A1 | CHERY AUTOMOBILE CO LTD; WUHU POWER TECHNOLOGY RES CO LTD | High-voltage battery controlling system for automobile, has entire automobile controller for judging connection or disconnection of battery, and battery management system for controlling closing or opening of battery relay |
| WO2010109688 A1 | TOKYO ELECTRIC POWER CO INC | Charge system for electric vehicles, has diode connected between charger and connector to permit electric current supply from charger to battery and prevent back flow of electric supply from battery |
| WO2010116540 A1 | KOSAKA K; UESAKA K | Portable multifunctional electrical storage power supply unit for various applications, has different types of converters that are arranged for supplying power to different types of electronic devices |
| WO2010134763 A2 | JEONG Y L; JUNG Y L; LEOMOTORS INC | Battery-charging apparatus for electric vehicle i.e. electric drive bus, has docking block having anode to be docked in anode terminal and cathode to be docked in cathode terminal such that docking block enters space of charging block |
| WO2010132443 A1 | ADVANCED POWER TECHNOLOGIES INC | Electric vehicle charging station of vehicle charging network, has grid connectivity component that transfers some of stored energy in energy storage component to grid as electrical energy |

...volver a CONTENIDO

## CAMBIO DE BATERÍAS

| Nº PUBLICACIÓN | SOLICITANTE | CONTENIDO TÉCNICO |
|---|---|---|
| WO2010132769 A1 | SINOELECTRIC POWERTRAIN CORP; SINOELECTRIC POWERTRAIN INC | Connection backplane for power delivery system of electric vehicle e.g. bus, has mounting positions comprising coupling unit routing communication signal between battery and power train controller, and backplane removing/adding battery |
| WO2010132775 A1 | SINOELECTRIC POWERTRAIN CORP; SINOELECTRIC POWERTRAIN INC | Movable battery pack for electric vehicle, has batteries enclosed in case with ground transporting structure rollable, slidable, or both along a surface |

...volver a CONTENIDO