

#### Coche Eléctrico: Difusión

El Salón del Automóvil Ecológico y de la Movilidad Sostenible, inaugurado por el Ministro de Industria, Turismo y Comercio Miguel Sebastián, se celebró en Madrid entre el 20 y el 23 de mayo de 2010. El certamen, en el que participaron un total de 34 marcas, tenía como principal objetivo acercar al público las últimas novedades y desarrollos de la industria de la automoción a partir de vehículos cada vez más eficientes y respetuosos con el medio ambiente.

En el Salón, que recibió más de cien mil visitantes, se presentaron las propuestas de las principales marcas automovilísticas en el sector de los vehículos eléctricos e híbridos. Junto a las marcas de automóviles, estuvieron presentes empresas de distintos ámbitos implicadas en la consecución de un modelo de conducción más sostenible, entre otras, las relacionadas con la creación de una infraestructura de recarga adecuada para hacer viable el uso de coches como los eléctricos o híbridos enchufables.

La OEPM estuvo presente con un stand, donde se presentaron los dos primeros números del Boletín del Coche Eléctrico.

El pasado 8 de julio de 2010, el Observatorio Industrial del Sector de Fabricantes de Equipos y Componentes de Automoción presentó en jornada celebrada en el Ministerio de Industria Turismo y Comercio su labor durante el último año. La OEPM intervino en dicha jornada presentando el Boletín del Coche Eléctrico, así como diferentes aspectos relacionados con la Vigilancia Tecnológica como punto de partida para la innovación en el sector de automoción.

Entre el 14 y el 16 de octubre de 2010, la OEPM participará en el Salón "Vehículo y Combustible Alternativos" que se celebrará en Valladolid y que recogerá las tendencias previstas en el desarrollo del vehículo eléctrico.

En este número del boletín se han introducido algunos cambios en su estructura, para facilitar el acceso a la información de manera rápida y precisa.

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# 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
<a href="#">WO2010066620 A1</a>	CONTINENTAL AUTOMOTIVE GMBH	Energy storage unit for storing electrical energy in hybrid and electric vehicles comprises two cells each consisting of a flat prism-like cell body limited by base surfaces and side surfaces, a packaging and a diverter section
<a href="#">WO2010066637 A1</a>	CONTI TEMIC MICROELECTRONIC GMBH; CONTINENTAL AUTOMOTIVE GMBH	Electrical energy store, especially for use in motor vehicle, includes flat cell(s) and cooling element thermally coupled with cell side surface to optimize dissipation of heat
<a href="#">WO2010064755 A1</a>	KOKAM CO LTD	Core-shell type anode active material for anode of lithium secondary battery, has shell comprising positive temperature coefficient medium, formed around carbonaceous material core
<a href="#">WO2010063420 A2</a>	DAIMLER AG	Single cell, particularly lithium-ion single cell for battery of motor vehicle, is formed of electrode stack whose individual electrodes of different polarity, particularly electrode foils are separated from each other in isolated manner
<a href="#">WO2010063365 A1</a>	DAIMLER AG	Battery i.e. lithium ion battery, for use in e.g. hybrid vehicle, has electrically conductive lateral walls formed as common housing partition between directly adjacent cells, which are electrically interconnected by partition
<a href="#">WO2010063367 A1</a>	DAIMLER AG	Single cell, particularly lithium-ion single cell for battery of motor vehicle, is formed of electrode stack whose individual electrodes of different polarity, particularly electrode foils are separated from each other in isolated manner
<a href="#">WO2010059166 A1</a>	ALLIANCE SUSTAINABLE ENERGY LLC	Thermal management system useful for providing improved temperature distribution for batteries and other energy storage devices comprises a fan moving fluid at a flow rate, an energy storage device, and a heat transfer shell
<a href="#">WO2010058587 A1</a>	PANASONIC CORP	Battery pack e.g. cylindrical lithium ion secondary battery pack for e.g. video camera, has multilayer structure formed by layering heat-absorbing layer and heat-conductive layer, and arranged in a portion around battery assembly
<a href="#">WO2010058717 A1</a>	UBE IND LTD	Nonaqueous electrolyte solution for lithium secondary battery, comprises nonaqueous solvent, electrolyte salt dissolved in nonaqueous solvent and fluorine-containing phenol
<a href="#">WO2010059865 A2</a>	APPLIED MATERIALS INC	Apparatus for plating metal on large area substrate used in manufacture of e.g. electrochemical battery, has several jet sprays that dispense plating solution to form plating bath
<a href="#">WO2010058742 A1</a>	TOYOTA JIDOSHA KK; YAZAKI CORP	Charging connector for, e.g. lithium ion battery of electric vehicle, has element that are respectively moved to positions in which pressing of release button is prohibited and permitted when lock unit is locked and unlocked
<a href="#">WO2010057724 A1</a>	BOSCH GMBH ROBERT	Vehicle, particularly hybrid vehicle, has electrical unit, which has inadmissibly high voltage level for contact by person
<a href="#">WO2010057954 A1</a>	BOSCH GMBH ROBERT	Device for measuring voltages in electrical storage cells of electrical storage in e.g. wind power plant, has synchronization line for simultaneously reading measurement values of measurement devices
<a href="#">WO2010055834 A1</a>	TONEN CHEM CORP	Microporous membrane used for battery and battery system useful for moving electric vehicle or hybrid electric vehicle comprises polypropylene, where membrane determined heat shrinkage and normalized air permeability
<a href="#">WO2010041598 A1</a>	TOYOTA JIDOSHA KK	Manufacture of lithium phosphorus oxynitride compound used for e.g. solid electrolyte layer, involves baking raw material composition containing compound having lithium element and phosphate structure, and nitriding agent
<a href="#">WO2010054939 A1</a>	CONTINENTAL AUTOMOTIVE GMBH	Holder for energy storage cell(s), e.g. lithium ion cells, comprises housing with coolant channel in rear wall and tongue and groove connectors for forming stack of holders
<a href="#">WO2010055922 A1</a>	TOYOTA JIDOSHA KK	Positive electrode collector for lithium secondary battery, is obtained by laminating electro-conductive layer on base material, and has surface oxide film having below specified thickness between conductive layer and base material
<a href="#">WO2010055812 A1</a>	TONEN CHEM CORP	Monolayer microporous membrane used in battery for electric vehicle, comprises polyolefin having specific weight average molecular weight
<a href="#">WO2010055761 A1</a>	HONDA MOTOR CO LTD	Cooling structure for power supply unit of vehicle such as hybrid vehicle, has heat sinks having several radiation fins, which are attached to electrically-wired case on opposite side to battery module

<a href="#">WO2010053222 A1</a>	DAEJUNG EM CO LTD; KOKAM CO LTD	Cathode active material for a lithium secondary battery, comprises a lithium metal oxide secondary particle core formed by agglomerating lithium metal oxide primary particles, and a shell formed by coating the secondary particle core
<a href="#">WO2010053872 A1</a>	GREENSMITH ENERGY MANAGEMENT SYSTEMS LLC	Distributed energy storage unit for use in distributed energy storage system in e.g. home, has controller providing two control signals that cause storage unit to store energy in battery and to generate alternating current, respectively
<a href="#">WO2010053328 A2</a>	LG CHEM LTD	Anodic active material for use in lithium secondary battery, comprises lithium-transition metal oxide containing transition metal chosen from nickel, cobalt and manganese, and fluorine
<a href="#">WO2010052766 A1</a>	TOYOTA JIDOSHA KK	Hybrid vehicle (HV) has electronic control unit to calculate allowable charge/discharge power of electrical storage unit, and to judge target power value within range of allowable control charge/discharge power
<a href="#">WO2010052950 A1</a>	UNIV IWATE NAT	Nonstoichiometric titanium compound for manufacturing carbon composite used for negative electrode active material for lithium ion secondary battery used for e.g. notebook personal computer, comprises lithium-titanium oxide
<a href="#">WO2010053100 A1</a>	TOYOTA JIDOSHA KK	Closed type battery e.g. lithium ion battery for vehicle e.g. electric vehicle, has current cut-off valve connected conductively with connection element by linearly joining with periphery of engagement hole formed in connection element
<a href="#">WO2010053157 A1</a>	TOYOTA JIDOSHA KK	Lithium secondary battery mounted in e.g. motor vehicle, has electrode having positive and negative electrodes such that pressure to be applied to the electrode along lamination direction of electrodes is of predetermined value
<a href="#">WO2010053174 A1</a>	GS YUASA CORP	Positive electrode used for lithium secondary battery, comprises lithium-manganese-iron phosphate and lithium-nickel-manganese-cobalt complex oxide
<a href="#">WO2010052336 A1</a>	ACTA SPA	Rechargeable zinc-air battery useful for motor vehicles, watches, acoustical devices, and electric vehicles, comprises anode comprising essentially spherical copper particles covered by a layer of zinc
<a href="#">WO2010050697 A3</a>	LG CHEM LTD	Battery cartridge for use in battery module of e.g. plug-type hybrid electric vehicle, has frames formed with inner surfaces equipped with elastic press member that presses outer surfaces of battery cell
<a href="#">WO2010049148 A1</a>	COMMISSARIAT ENERGIE ATOMIQUE; INST POLYTECHNIQUE GRENOBLE	Battery charge state determining method for e.g. electric vehicle, involves determining charge state corresponding to indicator by using curve representing variations of indicator based on charge state during charging/discharging phase
<a href="#">WO2010050347 A1</a>	KAO CORP	Lithium complex oxide sintered compact used for battery positive electrode composition for lithium ion battery, is obtained by sintering microparticles of lithium complex oxide, and has specific surface area of specified range
<a href="#">WO2010050348 A1</a>	KAO CORP	Manufacture of positive electrode active material particles used for manufacturing positive electrode composition, involves forming composition by removing polar solvent from slurry containing resin particles, polar solvent
<a href="#">WO2010050402 A1</a>	HITACHI VEHICLE ENERGY LTD	Secondary battery for e.g. hybrid vehicle, has power generating element group that is positioned such that uncoated portions of positive and negative electrode boards oppose formation surface of through-hole of battery can
<a href="#">WO2010050858 A1</a>	VOLVO LASTVAGNAR AB	Method for automatically decreasing risk of electric shock from hybrid electric vehicle power train, involves controlling power train for limiting rotational speed of electric motor below human hazardous voltage limit
<a href="#">WO2010049779 A1</a>	AISIN AW CO LTD; DENSO CORP; NIPPONDENSO CO LTD; TOYOTA JIDOSHA KK	Point registration apparatus for registering chargeable point of battery in e.g. plug-in hybrid vehicle, has registration unit that registers charging point by linking with positional information on chargeable point of battery
<a href="#">WO2010051427 A2</a>	AMERICAN AXLE & MFG INC; GILMORE C D	Suspension module for hybrid electric vehicles has controller which operates in second mode in which output of auxiliary battery charger and output of auxiliary battery are employed to power electric motors of drive units
<a href="#">WO2010050028 A1</a>	TOYOTA JIDOSHA KK	Metal air cell e.g. zinc-based air cell for, e.g. motor vehicle, has positive electrode material layers whose arrangement sequence direction intersects lamination direction of electrolyte layer, positive and negative electrodes
<a href="#">WO2010047359 A1</a>	SUMITOMO CHEM CO LTD	Sodium rechargeable battery used for e.g. motor vehicle, has non-aqueous electrolyte and electrode containing transition metal-type compound which can be doped and dedoped with sodium ion
<a href="#">WO2010049190 A1</a>	BOSCH GMBH ROBERT	Energy consumption output apparatus for outputting remaining usage possibility of e.g. bulb of torch used in electric vehicle, has output unit to determine information about maximum usage possibility of electrical consumer
<a href="#">WO2010044553 A3</a>	LG CHEM LTD	Battery module assembly for use as power source of e.g. electro mobile, has cooling member equipped with refrigerant pipe, where cooling member is mounted on exterior of battery modules

<a href="#">WO2010044552 A3</a>	LG CHEM LTD	Medium-to large-sized secondary battery pack for use in hybrid electric vehicle, has power supply suspension cutter mounted on conductive conjunction member to shut off electricity of conductive conjunction member
<a href="#">WO2010042989 A1</a>	BOORNE J; WESTLAKE B	Electric motor vehicle, e.g., low-speed electric motor vehicle has control system with master controller and separate slave controller which are connected to battery pack
<a href="#">WO2010044588 A2</a>	LG CHEM LTD	Electrode terminal connection members for use in cell core of battery i.e. lithium secondary battery, pack, have plate body with size suitable for interconnecting electrode terminals of battery cells
<a href="#">WO2010041318 A1</a>	TOYOTA JIDOSHA KK	Non-contact electric power receiving device for electric vehicle, has secondary self-resonance coil that is magnetically or less magnetically coupled to primary resonance coil with respect to power receiving and non-receiving time
<a href="#">WO2010041320 A1</a>	TOYOTA JIDOSHA KK	Hybrid electric vehicle e.g. hybrid car, has shielding material that is provided to electromagnetically shield between inner and outer sides of engine compartment which accommodates power receiving unit
<a href="#">WO2010039606 A2</a>	UNIV CALIFORNIA	Polymer electrolyte for lithium battery cell, comprises linear block copolymer including lithium-ion conductive non-crosslinked linear polymer block having above given value of molecular weight, and structural linear polymer block
<a href="#">WO2010040363 A2</a>	FEV MOTORENTECHNI K GMBH	Vehicle battery for electric or hybrid vehicle, comprises multiple lithium ion cells, which are arranged together discretely in outer housing, which is placed in vehicle in exchangeable manner
<a href="#">WO2010043585 A1</a>	ROSENBERGER HOCHFREQUENZT ECHNIK GMBH	Electromechanical connection system for use in e.g. electric car, has short-circuit line sections holding magnet during normal function at distance to line, where connection between sections operates during non-return of magnet carrier
<a href="#">WO2010038312 A1</a>	TOYOTA JIDOSHA KK	Electrode structure for all-solid battery element, has collector exposure portion formed between positive electrode active material layer and negative electrode active material layer
<a href="#">WO2010042434 A3</a>	ENVIA SYSTEMS INC; KUMAR S ; LOPEZ H ; VENKATACHALAM S	Positive electrode active material for a lithium ion cell used in electric vehicles and plug in hybrid vehicles, has specific discharge capacity
<a href="#">WO2010036723 A1</a>	UNIV CALIFORNIA; LOPEZ H	Material for electrode for lithium ion battery used in plug-in hybrid electric vehicle, contains composition containing lithium-nickel-cobalt-aluminum-manganese oxide
<a href="#">WO2010035407 A1</a>	PANASONIC CORP ; VENKATACHALAM S	Manufacturing method of control-valve type lead acid battery for auxiliary machine of e.g. hybrid vehicle, involves connecting through-hole with openings in intermediate cover to form gas extraction path
<a href="#">WO2010035602 A1</a>	NAT INST ADVANCED IND SCI & TECHNOLOGY ; VENKATACHALAM S	Lithium sulfide carbon composite for positive electrode active material, is complex formed by combining lithium sulfide and carbon material, and has carbon content of preset range, and tap density of more than preset value
<a href="#">WO2010035827 A1</a>	ZEON CORP; VENKATACHALAM S	Manufacture of electrode for electrochemical element, involves forming electrode active material layer on base material surface, laminating electrode active material layer and collector, and separating base material
<a href="#">WO2010036202 A1</a>	STL ENERGY TECHNOLOGY S PTE LTD; VENKATACHALAM S	Battery pack for electronic device, has kickstart circuit which electrically connects a protection circuit to a rechargeable battery source to provide electrical protection when the battery pack is in any one of multiple operating states
<a href="#">WO2010036761 A3</a>	ALLIANCE SUSTAINABLE ENERGY LLC	Hydrogen-based electrochemical storage device for, e.g. automobile, comprises counter electrode, storage electrode loaded with material in which hydrogen is retained with relatively low chemical bonding, and ion-conducting membrane
<a href="#">WO2010032486 A1</a>	PANASONIC CORP	Portable electronic device e.g. mobile phone has coating layer including temperature suppression layer and content-flow block layer provided in battery fitting surface side of electronic device main portion
<a href="#">WO2010036607 A1</a>	HONDA MOTOR CO LTD; ISHIKAWA Y	Machine implemented method for estimating ion density of a surface of positive or negative electrode of lithium ion battery, comprises dividing each electrode into N layers of active electrode material, and determining a battery current
<a href="#">WO2010032785 A1</a>	ZEON CORP	Electrode for lead storage battery used for e.g. hybrid vehicles, has electrode active material layer containing lead-containing material and porous carbonaceous material in specified mass ratio, and collector
<a href="#">WO2010032782 A1</a>	GS YUASA CORP	Open-type lead storage battery for vehicle e.g. idle stop vehicle, has negative electrode lug portion provided with predetermined carbon content with respect to mass of negative electrode active material after full charging

<a href="#">WO2010034741 A1</a>	BAACK T	Adapter for connecting e.g. electrical vehicle, to load network, has connection devices connected with load stations and consumer, where adapter permits acquisition of electrical energy over load stations
<a href="#">WO2010034930 A1</a>	PEUGEOT CITROEN AUTOMOBILES SA	Energy storage controlling method for hybrid vehicle, involves authorizing discharge of electric storage based on detection of charge states of electric storage higher than thresholds, respectively
<a href="#">WO2010067944 A1</a>	LG CHEM LTD	Air-cooled structure medium-to large-sized battery pack for use in e.g. electromobile, has battery modules provided in internal space of pack case, and refrigerant removing heat from unit cells
<a href="#">WO2010042550 A3</a>	JOHNSON CONTROLS TECHNOLOGY CO	Residential electrical demand response system for e.g. vehicle, has vehicle battery controller comprising fleet control, and control system comprising electricity buying/selling feature based on real time pricing of electricity

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## SUPERCONDENSADORES

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010067771 A1</a>	DAIKIN IND LTD	Electrical double layer capacitor used as power supply for electric vehicles, has electrode containing activated carbon particles, binding material and (meth)acrylic-acid type-compound, and fluorine-type electrolyte solution
<a href="#">WO2010067772 A1</a>	DAIKIN IND LTD	Electrical double layer capacitor e.g. winding-type electrical double layer used as power supply for electric vehicles, has electrode having specified density and non-aqueous electrolyte solution having specified withstand voltage
<a href="#">WO2010059432 A1</a>	ELLEMAN D S; HELM G	Hybrid power system for hybrid electric vehicle, has power controller disconnecting electric battery and connecting another electric battery to electric drive motors as function of state charge of electric batteries
<a href="#">WO2010056583 A2</a>	AMERICAN AXLE & MFG INC; GILMORE C D	Rechargeable energy storage system i.e. on-board rechargeable energy storage system, for use in hybrid control module of plug-in hybrid electric vehicle, has adjustable power supply maintaining voltage across supercapacitors
<a href="#">WO2010044264 A1</a>	TOMOEGAWA CO LTD; TOMOEGAWA SEISHISHO KK	Separator for electrical storage devices e.g. lithium ion capacitor, contains heat-resistant synthetic fiber, natural fiber, and thermoplastic synthetic fiber including polyester fiber which has preset range of crystallinity degree
<a href="#">WO2010046576 A3</a>	VALEO EQUIP ELECTRIQUES MOTEUR	Supercapacitor pack's end of lifetime detecting method for e.g. regenerative braking micro-hybrid system of motor vehicle, involves detecting end of lifetime of pack from measures carried out during starting phase of heat engine
<a href="#">WO2010041461 A1</a>	MATSUSHITA DENKI SANGYO KK; PANASONIC CORP	Electrical storage apparatus e.g. capacitor for motor vehicle, has recess in inner surface of terminal board placed in opening formed in casing accommodating electrical storage element, into which an electrode portion is fitted
<a href="#">WO2010041321 A1</a>	TOYOTA JIDOSHA KK	Power transmission apparatus for electric power feeder used for e.g. electric vehicle, has storage case that accommodates capacitor and frequency converter respectively connected to primary self-resonance coil and primary coil

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## SISTEMAS DE RECUPERACIÓN DE ENERGÍA; FRENOS REGENERATIVOS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010064550 A1</a>	HONDA MOTOR CO LTD	Power transmission device for hybrid vehicle, has two connection/disconnection parts, and connection switch part i.e. shifter, performing connection/disconnection of power transmission with electric motor and driven-shaft
<a href="#">WO2010059041 A1</a>	DRIVETRAIN INNOVATIONS BV	Flywheel module for vehicle, has control unit that is arranged to operate drive line or driven wheels by controlling energizing unit of motor/generator
<a href="#">WO2010059567 A1</a>	CORRIHER T H; TC CORRIHER IMPLEMENT CO INC	Zero-turn mower has brake attached to one of the front caster wheels attached to frame, and engine that rotates rear wheels to impart movement to mower
<a href="#">WO2010056844 A1</a>	INT TRUCK INTELLECTUAL PROPERTY CO LLC	Braking system for motor vehicle e.g. hybrid vehicle, has brake controller to close pressure regulator up to torque limit of drive system at regenerative braking mode and to open pressure regulator to meet additional braking demand
<a href="#">WO2010049945 A1</a>	REVA ELECTRIC CAR CO PRIVATE LTD; REVA ELECTRIC CAR CO PVT LTD	Antilock braking enabling method for e.g. electric vehicle, involves modulating regenerative braking to prevent locking of wheels of vehicle by momentarily withdrawing regenerative braking to allow motor and wheel to rotate
<a href="#">WO2010050313 A1</a>	NISSAN MOTOR CO LTD	Vehicle-ground contact plane friction estimation apparatus for four-wheeled vehicle, determines output of grip characteristics, based on ratio between wheel force on contact ground surface and wheel slip degrees
<a href="#">WO2010046575 A3</a>	VALEO EQUIP ELECTRIQUES MOTEUR	Regenerative braking controlling method for micro-hybrid system of motor vehicle, involves controlling reduction of energy state towards another energy state corresponding to intermediate energy state in manner to obtain loading capacity

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## MÁQUINAS ELÉCTRICAS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010067413 A1</a>	TOYOTA JIDOSHA KK	Power transmission device of front and rear wheel drive vehicle, has automatic transmission that is operated to shift gear to speed increasing transmission gear ratio during high speed running
<a href="#">WO2010066545 A1</a>	ZF FRIEDRICHSHAFEN AG	Drive train for motor vehicle, has rotor part tiltably coupled with another rotor part in torque transmitting manner, where latter rotor part is rotatably supported by housing-fixed rotor bearing and is aligned opposite to stator
<a href="#">WO2010064578 A1</a>	SHINETSU CHEM CO LTD; SHINETSU CHEM IND CO LTD	Manufacture of neodymium group sintered magnet for permanent magnet, involves coating oxide, fluoride or alloy powder having dysprosium or terbium on neodymium group sintered magnetic block, processing at high temperature and cutting
<a href="#">WO2010064510 A1</a>	HONDA MOTOR CO LTD	Axial-gap-type motor mounted in e.g. hybrid vehicle, has rotor frame made of die-cast metal having inner and outer cylinder portions which are provided in internal-diameter side and outer-diameter side of ribs
<a href="#">WO2010065055 A1</a>	FRIERMAN E M	Kinetic energy vehicle i.e. car, has starter generator and main drive generator rotated by rotation of turbine/flywheel, where turbine/flywheel rotates in response to air entering housing, and drive motor powered from drive generator
<a href="#">WO2010063360 A1</a>	BAYERISCHE MOTOREN WERKE AG	Electrical energy storage charging condition controlling and/or regulating method for hybrid vehicle, involves selecting low and higher charge condition levels depending on parameter representing electrical system load
<a href="#">WO2010063567 A1</a>	BOSCH GMBH ROBERT	Bearing arrangement for use in hybrid drive device of motor vehicle, has steel ring arranged between bearing shield and bearing, where steel ring forms form-locked connection with bearing shield
<a href="#">WO2010058284 A2</a>	TOYOTA JIDOSHA KK	Rotating electrical machine e.g. motor-generator for hybrid vehicle, allows flow of cooling oil in direction same as extension direction of connecting wire which extends from radial outside of stator core to radial inside of core
<a href="#">WO2010058478 A1</a>	TOYOTA JIDOSHA KK	Breather apparatus for hybrid vehicle drive device, has valve that adjusts internal pressure of rotary electric machine mounted storage case via clearance gaps formed between steel plates laminated in stator core of rotary electric machine
<a href="#">WO2010058267 A1</a>	AISIN AW CO LTD; DENSO CORP INC; NIPPONDENSO CO LTD; TOYOTA JIDOSHA KK	Plug-in hybrid vehicle, has operation schedule setting portion to set operation schedule, and control portion to control operations of engine and motor based on information on actual road condition and set operation schedule
<a href="#">WO2010058278 A2</a>	TOYOTA JIDOSHA KK	Rotating electrical machine used as vehicle motor to efficiently cool stator, has cover body that is fixed by engaging with portion of component that forms part of rotating electrical machine
<a href="#">WO2010058470 A1</a>	TOYOTA JIDOSHA KK	Controller for power transmission device of vehicle, produces compensating torque by performing compensatory control of inertia torque for reducing inertia torque produced in electric motor during vehicle acceleration period
<a href="#">WO2010055534 A1</a>	THREE TILTING WHEELS SRL	Electric motor wheel assembly for motor vehicle e.g. car, has seat defined for interrupting sequence of stator magnets along circumferential path, where seat is suitable for housing caliper of braking system of motor vehicle
<a href="#">WO2010054488 A3</a>	MOORE B	Moving fluid energy recovery system for generating electricity through rotational motion produced by fluid flow, has outer vane slot orientated with open side of outer arcuate vane toward the central bore of each end plate
<a href="#">WO2010055637 A1</a>	FCC KK	Power transmission device e.g. single clutch type transmission device for hybrid vehicle, has clutches operated selectively based on vehicle drive conditions, to allow/interrupt power transmission from engine and motor to drive wheels
<a href="#">WO2010052862 A1</a>	INTERMETALLICS CO LTD	Manufacture of rare-earth sintered magnet used as permanent magnet for e.g. motor of hybrid vehicle, involves filling alloy powder in container, orienting powder in magnetic field, and sintering alloy powder by heating

<a href="#">WO2010052768 A1</a>	TOYOTA JIDOSHA KK	Control apparatus of hybrid vehicle, controls speed change mode switching operation if vehicle operating point is shifted to fixed speed change mode region in which reaction force torque is larger than motor generator maximum torque
<a href="#">WO2010052439 A2</a>	CNRS CENT NAT RECH SCI; PEUGEOT CITROEN AUTOMOBILES SA	Homopolar double excitation rotating type synchronous electric machine for e.g. electric vehicle, has set of permanent magnets separated by magnetic space to allow circulation of double excitation flux in rotor between magnets
<a href="#">WO2010050345 A1</a>	AISIN AW CO LTD	Drive device for vehicle e.g. hybrid vehicle, has seal structures that are arranged to form respective oil chambers in contact with side ends of the bearing
<a href="#">WO2010050620 A1</a>	AISIN AW KOGYO KK; AISIN AW IND CO LTD	Damper mounted in e.g. hybrid vehicle, has separation restriction element arranged in lubricating oil accommodation chamber, to restrict relative movement of covers caused by biasing force of spring in separation direction of covers
<a href="#">WO2010049244 A1</a>	BOSCH GMBH ROBERT	Hybrid drive device for motor vehicle i.e. passenger car, has conveying unit conveying cooling fluid through hollow axle or hollow shaft to cool stator or rotor and formed as turbomachine, where cooling fluid is formed as air
<a href="#">WO2010049058 A2</a>	BAYERISCHE MOTOREN WERKE AG	Electrical drive e.g. electric motor, adjusting method for e.g. electric vehicle, involves determining temperature of drive, and adjusting temperature of part e.g. rotor, of drive based on parameter of vehicle
<a href="#">WO2010049384 A1</a>	ZF FRIEDRICHSHAFEN AG	Rotor for electric machine of hybrid drive train of motor vehicle, has hub comprising bearing flange that is provided with radially arranged through-holes with threads, and cover lying opposite to flange
<a href="#">WO2010050340 A1</a>	TOYOTA JIDOSHA KK	Rotary electric machine e.g. motor generator mounted in e.g. hybrid vehicle, has oil channels provided with grooves which are formed extending along rotating shaft direction of rotor
<a href="#">WO2010046905 A1</a>	DEERE & CO	Multi-utility hybrid traction device for use as mobile electric power source to run electrical appliance for e.g. agricultural service, has articulated final drive system provided between vertical axle and traction wheel
<a href="#">WO2010046003 A1</a>	BAYERISCHE MOTOREN WERKE AG	Electric vehicle, has gear with gear input shaft at input side, and torque transmission device adjusting concentricity tolerance existing between motor shaft and gear input shaft during dynamic operation
<a href="#">WO2010044426 A1</a>	HITACHI AUTOMOTIVE SYSTEMS LTD	Rotary electric machine e.g. motor for electric vehicle, varies amount of offset from q axis of magnetoresistance variation unit in rotor based on salient pole position so that torque fluctuations cancel each other if power is applied
<a href="#">WO2010040785 A2</a>	FEAAM GMBH	Electrical machine e.g. linear motor, for driving motor vehicle, has stator with number of grooves that is twice number of pole pairs of rotor, where stator has two electrical coils with different sets of windings
<a href="#">WO2010035318 A1</a>	FUDA K; TAKAHASHI S	Rotating mechanism for e.g. single drive linear motor used in e.g. freight car of hybrid/electric type, has drive coil which receives electric current generated by one induction coil to generate magnetic field between drive coils

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## CONVERTIDORES, INVERSORES

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010055556 A1</a>	mitsubishi electric corp	Apparatus for estimating capacitance of capacitor used in power converter device mounted in electric vehicle, estimates capacitance of capacitor based on detection of electric current of converter and voltage of capacitor
<a href="#">WO2010050594 A1</a>	HITACHI AUTOMOTIVE SYSTEMS CO LTD; HITACHI AUTOMOTIVE SYSTEMS LTD	Power module power converter used in vehicle e.g. electric vehicle, has insulation unit that is arranged between base plates and semiconductor unit for providing electrical insulation
<a href="#">WO2010050428 A1</a>	HITACHI AUTOMOTIVE SYSTEMS CO LTD; HITACHI AUTOMOTIVE SYSTEMS LTD	Electric power converter for, e.g. electric vehicle, has capacitor connected to input terminals where distance between terminals and input terminals is shorter than distance between terminals and electrode side capacitor terminals
<a href="#">WO2010046984 A1</a>	mitsubishi electric corp	Propulsion control device for e.g. electric car, circuit switching unit that selects either electric power fed from external power source or electric power fed from electric power storage element and outputs to inverter
<a href="#">WO2010042479 A3</a>	MASSACHUSETTS INST TECHNOLOGY; LU B; PALACIOS T	Heterojunction for gallium nitride (GaN)-spacer MOSFET structure, has aluminum nitride (AlN) intermediate layer that is positioned between GaN barrier layer and GaN channel layer, comprising wider bandgap than GaN channel layer
<a href="#">WO2010038132 A2</a>	TOYOTA JIDOSHA KK	Vehicle motor driving system, has shield layer grounded at location near connecting portion at which motor case accommodating motor is connected to suspension arm and at location near mounting portion
<a href="#">WO2010037455 A1</a>	BOSCH GMBH ROBERT	Voltage supply for use in control device in e.g. fork truck, has coil connected to voltage input of voltage transformer designed as fly back converter so that voltage supply for voltage transformer is implemented via coil
<a href="#">WO2010038023 A1</a>	3DI POWER LTD	Inductor assembly for e.g. high frequency direct current-direct current switched mode power converter used in electric vehicle, has electrostatic screen which is positioned between successive turns of coil and insulated from coil
<a href="#">WO2010035338 A1</a>	MERSTECH INC	Power converter device for secondary battery charging/discharging apparatus in electric vehicle, adjusts input electric current of bridge circuit that produces rise pulse voltage by on/off control of reverse conducting switches
<a href="#">WO2010032473 A1</a>	MITSUBISHI HEAVY IND CO LTD; MITSUBISHI JUKOGYO KK	Inverter apparatus for controlling electric motor in e.g. electric vehicle, has power substrate that is arranged at bottom portion of box-shaped module case and control substrate that covers opening of box-shaped module case

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## RECARGA DE BATERÍAS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010067417 A1</a>	TOYOTA JIDOSHA KK	Charging system of vehicle e.g. electric vehicle, detects difference between charging power detected by charging power detection unit and target value, and judges presence/absence of abnormality occurrence in charger accordingly
<a href="#">WO2010061058 A1</a>	SANDVIK MINING & CONSTR OY	Method for using mining vehicle e.g. rock drilling rig, involves performing transfer drive after work cycle using energy storage as energy source charged by external electrical network during work cycle
<a href="#">WO2010059320 A9</a>	WALLACE D L	Self-sustaining electric engine enhancement (SSEEE) used in electric vehicle or electric car, adds access manager that grants access to batteries to controller for power consumption and to new charger for power replenishment
<a href="#">WO2010061449 A1</a>	TOYOTA JIDOSHA KK	Power source system for hybrid vehicle, has secondary batteries which are charged by controlling corresponding voltage conversion units when voltage value of specific battery reaches preset upper limit voltage value
<a href="#">WO2010061465 A1</a>	TOYOTA JIDOSHA KK	System for charging vehicle e.g. electric vehicle, stops charging of battery units, when additional charging time exceeds preset time, when charged state does not reach charge stopping threshold value
<a href="#">WO2010060370 A1</a>	BYD CO LTD	Charging device for electrically drivable vehicle, is chargeable to vehicle when charging terminal and chamber are connected to each other and charging gun and charging base are engaged with controlled area network (CAN) module
<a href="#">WO2010057799 A1</a>	HUEBNER B	Device for inductively transmitting electrical energy to or from e.g. train, has magnetically conductive tires rotating with motion of object and associated with disks for contacting roadway
<a href="#">WO2010057893 A1</a>	VALEO SYSTEMES CONTROLE MOTEUR	Combined method for powering motor and loading battery in automobile field, involves compensating magnetic fields generated during charging of storage unit in order to limit or prevent movements of rotor of motor
<a href="#">WO2010058479 A1</a>	TOYOTA JIDOSHA KK	Control apparatus of vehicle e.g. hybrid vehicle, calculates upper limit of discharge electric power from master power supply and slave power supply respectively, based on state of respective power supplies
<a href="#">WO2010058468 A1</a>	MITSUBISHI ELECTRIC CORP	Power converter for use in electric vehicle, computes correction value for correcting voltage value from voltage signal in which voltage value detected by voltage detector is converted into digital signal, and series total voltage value
<a href="#">WO2010058839 A1</a>	HONDA MOTOR CO LTD	Charging control apparatus of chargeable electric condenser in vehicle, has management electronic control unit (ECU) that controls charge of condenser based on estimated state of charge (SOC) and calculated charge/discharge amount
<a href="#">WO2010057892 A1</a>	VALEO SYSTEMES CONTROLE MOTEUR	Combined electric power supply and charging device for use in electric automobile, has switching unit integrated in converter, where switching unit includes three H-shaped bridge structures for each phase of motor
<a href="#">WO2010055411 A1</a>	TOYOTA JIDOSHA KK; YAZAKI CORP	Charging cable for electric vehicle, has electric wire section provided between charging connector and electronic control unit (ECU), and between ECU and plug for directing electric power and control signals
<a href="#">WO2010052533 A8</a>	TOYOTA JIDOSHA KK	Vehicle battery diagnosis system e.g. for lead-acid battery, used in maintenance-repair shop e.g. car dealer, has display portion that displays screen that corresponds to screen information created by information processing portion
<a href="#">WO2010052785 A1</a>	TOYOTA JIDOSHA KK	Electric power feeding system for, e.g. electric vehicle, has hybrid vehicle-electronic control unit (HV-ECU) that performs guidance control according to predetermined distance information from resonance ECU
<a href="#">WO2010056604 A2</a>	INT TRUCK INTELLECTUAL PROPERTY CO LLC	Hybrid electric motor vehicle, has high-voltage electrical system comprising high-voltage battery bank, and generator recharging low-voltage battery bank if recharge initiate timer times to recharge initiate limit
<a href="#">WO2010049773 A3</a>	MATSUSHITA ELECTRIC WORKS LTD; PANASONIC ELECTRIC WORKS CO LTD	Charging cable unit for use in charging system for charging battery of e.g. hybrid car, has switching unit that selects cable connector through which charging current is supplied

<a href="#">WO2010049775 A2</a>	MATSUSHITA ELECTRIC WORKS LTD ; PANASONIC ELECTRIC WORKS CO LTD	Charging cable for use in charging cable unit of charging system for plug-in type hybrid car, has control circuit for sending signal to switching circuit to cutoff current when temperature exceeds threshold value or leakage is detected through which charging current is supplied
<a href="#">WO2010047046 A1</a>	MATSUSHITA DENKI SANGYO KK ; PANASONIC CORP	Failure diagnosis circuit of power supply device, determines failure in voltage detecting unit when change in terminal voltage of battery pack is different from change predicted when state-of-charge of battery pack is at preset value
<a href="#">WO2010049215 A2</a>	BOSCH GMBH ROBERT	Energy production device for use in stationary energy charging station for supplying electrical energy to electric motor-propelled vehicle, has energy production unit for supplying electrical energy directly into energy supply network
<a href="#">WO2010041319 A1</a>	TOYOTA JIDOSHA KK	Connecting device for connecting external power supply and vehicle e.g. hybrid vehicle, has rotator and stator arranged with terminal portions which are connected with connection cord and power supply cord respectively
<a href="#">WO2010040646 A3</a>	BOSCH GMBH ROBERT	Power supply system for electric vehicle, has interface provided between on-board and fixed component to connect on-board charging unit to connection station during charging process and to transmit operating variables to charging unit
<a href="#">WO2010042517 A1</a>	BOSTON-POWER INC	Electric vehicle includes controller which receives module conditions from module management unit and controls operation of individual battery modules in an array
<a href="#">WO2010038347 A1</a>	MATSUSHITA DENKI SANGYO KK ; PANASONIC CORP	Cell equalization circuit for battery power supply, has fault detection unit that determines presence/absence of faults of respective discharge portions based on current detection signals
<a href="#">WO2010038682 A1</a>	NISSAN MOTOR CO LTD	Apparatus for performing charging control of battery used in e.g. electric vehicle, performs rapid charging of battery at battery warm-up start time so as to effectively warm-up the battery before initiating starting drive of vehicle
<a href="#">WO2010035605 A1</a>	ACTIVE CORP INC	System for distributing secondary battery for e.g. electric vehicle, determines distribution valve of used secondary battery based on state of used secondary battery determined by state confirming unit
<a href="#">WO2010035321 A1</a>	TOYOTA JIDOSHA KK	Electric power feeding system for electric vehicle e.g. car, has vehicle electronic control unit that controls voltage between rectifier and direct current (DC)/DC converter with respect to predetermined target voltage
<a href="#">WO2010033517 A2</a>	AGASSI S; BETTER PLACE GMBH; GILBOA Y; HERSHKOVITZ B; KABISHER B; KHASON T; KIESLESTEIN S	Computer-implemented energy usage managing method for electric vehicle i.e. car, involves displaying boundary indicating theoretical maximum range of electric vehicle on geographical map
<a href="#">WO2010032309 A1</a>	TOYOTA JIDOSHA KK ; KABISHER B	Non-contact type electric power receiving device installed in e.g. electric vehicle, has relay provided at electric power transmission path that interrupts supply of electric power from receiving coils towards rectifier
<a href="#">WO2010035676 A1</a>	TOYOTA JIDOSHA KK ; KIESLESTEIN S	Electric vehicle e.g. plug-in type hybrid vehicle has charger electronic control unit that is driven using voltage of high-voltage battery, when operation of high-voltage battery satisfies predetermined charging conditions
<a href="#">WO2010030005 A1</a>	YAZAKI CORP	Wireless charge system for e.g. electric vehicle, has resonance coil that transmits amplified alternating current (AC) electric power to another resonance coil
<a href="#">WO2010056684 A1</a>	REARDEN LLC	Electric vehicle i.e. electric train/trolley, powering method for hostile outdoor environment, involves positioning antenna array beneath or on road surface of roadway, and using power generated by rectenna array to power vehicle
<a href="#">WO2010064068 A2</a>	BARBIC M	Electrical e.g. alternate current, charging and driving system for e.g. electrical powered car, has cooling system including blower in front of vehicle for blowing air to brushless motor and generator

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## CAMBIO DE BATERÍAS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
<a href="#">WO2010061001 A2</a>	SIEMENS AG	Replaceable energy storage device i.e. rechargeable battery, for supplying electrical energy for operation of e.g. electric vehicle, has communication module for exchanging data with processing system of vehicle to charge device

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