

Lithium Battery Patents -- July 12, 2024

[Shenzhen Taibo Xunrui Tech Secures Patent for Lithium Battery Mounting Structure](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Taibo Xunrui Tech has secured a patent on lithium battery mounting structure. Dong Ruijie developed the invention.

The patent application number is CN202223419163U 20221220. The patent publication number is CN219959240 (U). International Patent Classification codes are H01M50/242, H01M50/244, H01M50/249 and H01M50/289. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a lithium battery installation structure, relates to lithium battery installation technical field, including main body device, the main body device includes bearing unit, buffer unit and limit installation unit, the buffer unit is located in the bearing unit, the limit installation unit is located above the buffer unit, the limit installation unit is located in the bearing unit, and the buffer unit is located in the limit installation unit. The bearing unit comprises a bearing plate frame, and the buffering unit comprises a built-in loading frame, a lower damping spring and a side damping spring. According to the lithium battery mounting frame, the bearing plate frame, the upper sealing plate, the built-in loading frame, the guide mounting rods, the threaded positioning rods, the mounting grooves and the inserting grooves are matched for use, so that the lithium battery can be quickly mounted, and the firmness and the stability of the lithium battery are ensured through the matching of the upper sealing plate, the built-in loading frame and the threaded positioning rods; and a lower damping spring, a side damping spring and a convex pattern rubber laminating plate are matched for use, so that the lithium battery can be buffered in time when the vibration problem occurs in the use process."

[Suzhou Dingxi Jucai Nano Tech Gets Patent for Graphene-Based Lithium Air Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Suzhou Dingxi Jucai Nano Tech has received a patent for graphene-based lithium air battery. This invention was developed by Zhang Yani.

The patent application number is CN202320307083U 20230224. The patent publication number is CN219959242 (U). International Patent Classification codes are H01M50/242, H01M50/244, H01M50/249 and H01M50/289.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model relates to the technical field of batteries, in particular to a graphene-based lithium air battery which comprises a mounting bottom plate, a placement groove is formed in the surface of one side of the mounting bottom plate, a battery body is mounted in the placement groove, the battery body is made of graphene-based lithium materials, two fixing plates are arranged above the mounting bottom plate, and the two fixing plates are arranged on the mounting bottom plate. Connecting assemblies are arranged on the surfaces of the opposite sides of the two fixing plates correspondingly, and one ends of the connecting assemblies are fixedly connected with a first pull rod and a second pull rod

correspondingly. Through cooperative use of the mounting bottom plate, the placement groove, the battery body, the fixing plate, the connecting assembly, a first pull rod, a second pull rod, a mounting frame, an elastic assembly, a limiting plate and a rubber auxiliary plate, the effect of connecting and fixing the mounting frame, the limiting plate and the rubber auxiliary plate together can be achieved; therefore, the graphene-based lithium air battery can be stably mounted on the automobile, and the stability and firmness of the graphene-based lithium air battery are improved."

[Shenzhen Qianli New Energy Got Patent Approval for Lithium Battery Energy Storage Structure with Waterproof and Dustproof Functions](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Qianli New Energy today announced that it has been granted patent approval for lithium battery energy storage structure with waterproof and dustproof functions by State Intellectual Property Office of China. Jiang Changjun developed the invention.

The patent application number is CN202320715720U 20230404. The patent publication number is CN219959246 (U). International Patent Classification codes are H01M10/613, H01M10/6556, H01M50/24 and H01M50/244. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a lithium battery energy storage structure with waterproof and dustproof functions, which comprises a bottom plate, a top plate, a plurality of lithium batteries and support columns arranged at four corners of the top of the bottom plate, and the lithium batteries are positioned between the bottom plate and the top plate. According to the lithium battery pack, the protective glass is arranged and can protect the side surfaces of the lithium batteries and prevent water and dust from entering the lithium battery pack, so that an isolation effect is achieved, and the problem that the side surfaces of the lithium batteries are exposed to the outside during normal use due to the fact that the top and the bottom of the existing lithium battery pack are fixed by using a frame and nuts is solved. And the protection cover is arranged, so that the output end of the lithium battery can be protected through the protection cover when the lithium battery is not used, dust and other impurities are prevented from being adsorbed, and the effect of protecting the lithium battery pack is achieved."

[Guangdong Yuyang New Energy Gets New Chinese Patent Related to Wall-Mounted Lithium Battery Pack](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Guangdong Yuyang New Energy has secured patent for its wall-mounted lithium battery pack. This invention was developed by Wu Shulin, Zhong Chunyang, Wei Shimin and Fu Deyong.

The patent application number is CN202321102164U 20230510. The patent publication number is CN219959254 (U). International Patent Classification codes are H01M10/613, H01M10/6556, H01M10/6563, H01M50/244, H01M50/256 and H01M50/262.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a wall-mounted lithium battery pack. Comprising a mounting shell, a mounting cover, a lithium battery pack, a wall-mounted mounting structure and a heat dissipation structure, the lithium battery pack is located in the mounting shell, the mounting cover is detachably connected to the mounting shell, a plug module electrically connected with the

lithium battery pack is arranged on the mounting shell, the wall-mounted mounting structure is arranged on the rear wall of the mounting shell, and the heat dissipation structure is arranged on the mounting shell. And the heat dissipation structure is arranged on the mounting cover, and the heat dissipation end of the heat dissipation structure faces the lithium battery pack. According to the wall-mounted lithium battery pack mounting device, the wall-mounted lithium battery pack can be mounted under different mounting conditions, and the applicability of the device is improved."

[State Intellectual Property Office of China Awards Patent for Waterproof Lithium Ion Power Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- State Intellectual Property Office of China has awarded Datu Aerge Energy Tech Nantong a patent for waterproof lithium ion power battery. Zhao Yang developed the invention.

The patent application number is CN202321180445U 20230517. The patent publication number is CN219959261 (U). International Patent Classification codes are H01M50/202, H01M50/24, H01M50/244, H01M50/249, H01M50/256, H01M50/264, H01M50/296 and H01R13/52.

The abstract released by the State Intellectual Property Office of China states, "The utility model provides a waterproof lithium ion power battery. The waterproof lithium ion power battery comprises a battery main body and a multifunctional waterproof mechanism, according to the waterproof lithium ion power battery, the multifunctional waterproof mechanism comprises a fixed column, a telescopic spring, a telescopic column, a clamping plate, a non-slip mat, a lithium battery, a clamping groove block, a second fixed block and a separation blade, so that when the waterproof lithium ion power battery needs to be used, a handle rotates in the second fixed block to pull the lithium battery; a lithium battery is placed in a battery main body, a telescopic spring in a fixing column can deform along with advancing and retreating of a telescopic column, the telescopic spring can apply outward force to the telescopic column to fix the lithium battery, a non-slip mat prevents a clamping plate from scratching the lithium battery, when the lithium battery needs to be charged, a charger enters through a charging port, and a blocking piece rotates through a rotating hinge, so that the lithium battery is charged. When the charger is not used, the charging port is opened, the charger enters, and the blocking piece closes the charging port when the charger is not used, so that dust or rainwater is prevented from entering the charging port to influence the use of the lithium ion power battery."

[State Intellectual Property Office of China Issues Patent CN202320655880U 20230329 to Jiaxing Kaili Battery for Mercury-Free Zinc-Manganese Dry Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jiaxing Kaili Battery has been awarded patent in the Chinese for mercury-free zinc-manganese dry battery. Wen Qin'An developed the invention.

The patent application number is CN202320655880U 20230329. The patent publication number is CN219959048 (U). International Patent Classification codes are H01M6/06 and H01M6/10. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a mercury-free zinc-manganese dry battery which comprises a zinc cylinder, an anode cap is arranged at the upper end of the zinc cylinder, the lower end of the anode cap is connected with a graphite rod extending into the zinc cylinder, electrolyte is

filled in the zinc cylinder, a sealing element is further arranged in the zinc cylinder, the sealing element is positioned above the electrolyte, and the anode cap is connected with the graphite rod. The sealing element is provided with a through hole for the graphite rod to pass through, sealant is filled between the sealing element and the inner wall of the zinc cylinder, the electrolyte is aluminum silicate electrolyte, the periphery of the aluminum silicate electrolyte is coated with a layer of positive electrode film, the inner wall of the zinc cylinder is provided with a layer of negative electrode film, and the negative electrode film is coated with a layer of negative electrode film. The aluminum silicate electrolyte is used for replacing ammonium chloride or mercuric chloride in the prior art to generate the electrolyte, mercury or other harmful substances cannot be generated, and the lithium ion battery is green, degradable and good in using effect."

[Shenzhen Yuanyouyuan Electronic Tech Got Patent Approval for Outdoor Cold-Resistant Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Yuanyouyuan Electronic Tech today announced that it has been granted patent approval for outdoor cold-resistant lithium battery by State Intellectual Property Office of China. Jiang Lijun developed the invention.

The patent application number is CN202321226816U 20230520. The patent publication number is CN219959263 (U). International Patent Classification codes are H01M10/48, H01M10/613, H01M10/615, H01M10/6563, H01M50/244, H01M50/271 and H01M50/289.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses an outdoor cold-resistant lithium battery, which comprises a main body mechanism, a battery main body, a heating mechanism and a blowing mechanism, the battery main body is arranged in the main body mechanism, the heating mechanism is arranged at the top end of the battery main body, and the blowing mechanism is arranged at the top end of the heating mechanism. According to the main body mechanism, the battery main body can be fixedly erected and physically protected, the influence of the external environment can be reduced when the battery main body is used outdoors, meanwhile, the lithium battery can be flexibly adjusted according to the actual temperature when being used, and the operation temperature of the battery can be increased through the heating mechanism when the lithium battery is used outdoors in cold weather, so that the service life of the battery is prolonged. And the air blowing mechanism can blow air into the main body mechanism, so that internal air circulation is enhanced, and heat of the heating mechanism can be uniformly and quickly diffused when the external weather is cold, so that the battery can normally run more quickly."

[State Intellectual Property Office of China Awards Patent for Square Secondary Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- State Intellectual Property Office of China has awarded Jiangxi Ganfeng Lithium Battery Tech a patent for square secondary battery. Ge Zhimin, He Qingqing, Chen Jinlong, Yu Wenqiang, Zhang Lihua, Sun Wen, Tang Xiaowei, Huang Xiaowei, Tao Qiongcheng and Hu Yanlan developed the invention.

The patent application number is CN202321361097U 20230531. The patent publication number is CN219959272 (U). International Patent Classification codes are H01M50/24 and H01M50/244. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by the State Intellectual Property Office of China states, "The utility model provides a square secondary battery, which relates to the technical field of lithium batteries and comprises a naked battery cell, a top cover, a protective support, a shell and a shell, the naked battery cell is mounted on two sides of the naked battery cell, the protective support is arranged on the outer side of the naked battery cell, the shell is internally provided with an open cavity, the naked battery cell is positioned in the open cavity, the shell encircles to form a rectangular shell, and the head end and the tail end of the shell are welded; the top cover comprises a cover plate, a pole column, lower plastic and a connecting piece, the pole lug is welded with the connecting piece, the protection support is made of an insulating material, the section of the protection support is L-shaped or planar, the protection support is welded to the naked battery cell, an open cavity is formed in the shell, the naked battery cell can directly enter the open cavity of the shell, the outer wall is not prone to making contact with the edge of the shell, the abrasion risk is greatly reduced, and the service life of the naked battery cell is prolonged. And the yield of the battery is improved."

[Jiangxi Ganfeng Lithium Battery Tech Granted Chinese Patent for Energy Storage Battery Module](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jiangxi Ganfeng Lithium Battery Tech announced that the State Intellectual Property Office of China has granted another patent to energy storage battery module. This invention was developed by Ge Zhimin, Tao Qiongcheng, Tang Jiaojun, Li Shuibao, Hu Yanlan, Chen Jinlong, Zhong Yuhao, Hu Junfeng and Wu Junfang.

The patent application number is CN202321360473U 20230531. The patent publication number is CN219959271 (U). International Patent Classification codes are H01M50/244 and H01M50/289.

According to the abstract released by the State Intellectual Property Office of China: "The utility model relates to the technical field of energy storage batteries, in particular to an energy storage battery module which comprises a box body, a box door and an assembly structure, the box door is hinged to the rear portion of the box body, and the assembly structure is arranged outside the box body. The positioning structures are arranged at the top of the box body, the assembling structures correspond to the positioning structures in number and position, the assembling structures and the positioning structures are assembled, and each positioning structure comprises a connecting groove and a T-shaped opening. All the box bodies can be fixed, the box bodies can be quickly and uniformly assembled and fixed, after the box bodies are assembled, the T blocks in the upper and lower adjacent box bodies are blocked, and screws penetrate into the second hole sites, so that after the top plate is fixed with the box body at the topmost part, the T blocks are limited into the T openings, and the battery modules in the box bodies are fixed together."

[Anli Energy Storage Tech Wuxi Gets Patent for Protective Device for Lithium Battery Production](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Anli Energy Storage Tech Wuxi has received a patent for protective device for lithium battery production. This invention was developed by Yu Youshi and Chen Yu.

The patent application number is CN20232108125U 20230428. The patent publication number is CN219959069 (U). International Patent Classification codes are H01M10/04, H01M10/052, H01M10/0525, H01M10/058, H01M6/00 and H01M6/14.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a protection device for lithium battery production, which comprises a workbench, a dehumidification box fixedly connected to the upper end of the workbench, a connecting pipe fixedly connected to the upper end of the dehumidification box, an air supply groove fixedly connected to the lower end of the connecting pipe through the inner wall of the dehumidification box, a filter screen clamped in the air supply groove, and a plurality of air supply heads fixedly connected to the lower end of the air supply groove. The device has the beneficial effects that by arranging the servo motor, the threaded rod, the connecting block, the mounting seat and the supporting rod, personnel can be prevented from being in excessive contact with a battery cell, and damage to the personnel caused by electric leakage of the battery cell is avoided; and by arranging the fan, the filter screen, the air supply groove and the drying box structure, the battery cell can be in a dry environment and subjected to cooling treatment, the situation that the battery cell is in a humid environment and is damaged is avoided, and by adopting the structure of clamping blocks, clamping grooves, fixing frames and springs, the drying agent screen frame can be conveniently replaced and used."

[Guangdong Yuyang New Energy Announces a Patent Granted for Plug-In Lithium Battery Pack for Household Energy Storage](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Guangdong Yuyang New Energy announced that State Intellectual Property Office of China has issued a patent for plug-in lithium battery pack for household energy storage. Zhong Chunyang and Chen Dajiao developed the invention.

The patent application number is CN202320307349U 20230224. The patent publication number is CN219959290 (U). International Patent Classification codes are H01M50/204, H01M50/242, H01M50/244, H01M50/258 and H01M50/296. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a plug-in lithium battery pack for household energy storage, which comprises a protective shell, a power connection assembly is arranged in the protective shell, a fixing assembly is arranged on the protective shell, the power connection assembly comprises a battery pack, the battery pack is clamped in the protective shell, and sliding seats are fixedly connected to four corners of the bottom of the battery pack. The beneficial effects of the utility model are that the plug is driven to move up and down by pushing the rotating strip, the plug can be inserted into and separated from the socket when moving, the rotating plate is pushed to rotate around the second U-shaped rod, the rotating plate drives the clamping block to rotate, and the plug can be inserted into and separated from the socket when moving. The clamping block moves out of the U-shaped frame when rotating, then the cover plate is in fixed contact, then the battery pack is pulled to stably move out of the protection shell, the battery pack stably slides, the battery pack can be effectively prevented from colliding with the shell when moving, and then the situation that the battery pack is damaged and cannot be used is prevented."

[Liaoning Haochuan Zhicheng Tech Development Gets New Chinese Patent Related to Foldable Engineering Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Liaoning Haochuan Zhicheng Tech Development has secured patent for its foldable engineering lithium battery. This invention was developed by Zhang Jiayi.

The patent application number is CN202320915259U 20230421. The patent publication number is CN219959296 (U). International Patent Classification codes are H01M10/04, H01M10/052, H01M10/058, H01M50/209, H01M50/264, H01M50/269 and H01M50/289. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a foldable engineering lithium battery which comprises a plurality of lithium batteries, the top ends and the bottom ends of the plurality of lithium batteries are sequentially hinged to form a group of lithium batteries, the front end of each group of lithium batteries is provided with a fastener, and the rear end of each group of lithium batteries is provided with two plug-ins; clamping grooves are formed in the front side of the inner surface of the inserting piece, two rotating blocks are rotationally installed on the front side of an inner cavity of the buckling piece, fan blocks are installed in inner cavities of the rotating blocks in a sliding mode, the outer ends of the fan blocks extend out of the buckling piece, springs are installed at the inner ends of the fan blocks, and the two fan blocks are matched with the two clamping grooves. According to the foldable engineering lithium battery, one group of plug-in units are correspondingly inserted into the other group of fasteners, so that the sector blocks enter the clamping grooves to fixedly assemble the two groups of lithium batteries, and when the foldable engineering lithium battery is disassembled, the direction of the sector blocks is changed by rotating the rotating button, so that the plug-in units can be conveniently taken out from the fasteners, and the practicability is relatively high."

[**Jiangxi Taixin Lithium Ind Granted Patent for Packaging Device for Battery Production and Processing**](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jiangxi Taixin Lithium Ind has been granted a patent for packaging device for battery production and processing. Wu Hongji, Wan Lilong, Huang Zhiping, Wan Haiwen, Liao Jiajun and Yin Shunshu developed the invention.

The patent application number is CN202321412030U 20230605. The patent publication number is CN219959081 (U). International Patent Classification codes are H01M10/04 and H01M50/105.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a packaging device for battery production and processing, which relates to the field of battery production and comprises a supporting box body, bottom cushion blocks are horizontally and uniformly butted on the bottom surface of the supporting box body, supporting side plates are horizontally and symmetrically welded on two side edges of the supporting box body, and a conveying belt body is horizontally arranged on the side edge between the supporting side plates. Placing grooves are evenly formed in the outer side edge of the conveying belt body, a side box body is connected to one side edge of one supporting side plate through bolts, a top air cylinder is connected to the top face of the supporting box body through bolts, bottom screw holes are evenly formed in the bottom face of the supporting box body, and connecting screw rods are fixedly connected to the top face of a bottom cushion block in an inserted mode. Side through grooves are symmetrically formed in the two side edges of the supporting box body, an inner supporting plate is horizontally welded to the inner side edge of the supporting box body, an extrusion top plate is horizontally arranged on the top face of the inner side of the supporting box body, feeding and discharging are quicker and more efficient by adopting a conveying belt structure, and meanwhile treatment is more efficient by combining a heat sealing structure."

[**State Intellectual Property Office of China Issues Patent CN202320337780U 20230228 to Jiangxi Ganfeng Lithium Battery Tech for Energy Storage Battery Rack**](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jiangxi Ganfeng Lithium Battery Tech has been awarded patent in the Chinese for energy storage battery rack. Ge Zhimin, Hu Yun, Tao Qiongcheng, Tang Jiaojun, Li Shuibao, Hu Yanlan, Chen Jinlong and Zhong Yuhao developed the invention.

The patent application number is CN202320337780U 20230228. The patent publication number is CN219959299 (U). International Patent Classification codes are H01M10/613, H01M10/627, H01M10/6556, H01M10/6568, H01M50/204, H01M50/244, H01M50/251 and H01M50/267. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model provides an energy storage battery rack, which relates to the technical field of energy storage batteries and comprises a main rack body and a cooling rack, the cooling rack is fixed in the middle of the inner side of the main rack body, a plurality of pairs of symmetrically distributed side mounting racks are fixed on the left side and the right side in the main rack body, and a clamping pipe rack is inserted between the bottoms of the side mounting racks and the cooling rack. A telescopic pipe joint is arranged on the clamping pipe frame, a clamping plate piece is arranged at the end, close to the side mounting frame, of the telescopic pipe joint, and the clamping plate piece is in sliding connection with the clamping pipe frame; a convection pipe is embedded in the clamping pipe frame, and a pipe column head is inserted between the convection pipe and the cooling frame. One end of the battery serves as a supporting and fixing end through the side mounting frame, and at the other end of the battery, the telescopic pipe joint arranged on the upper surface of the clamping pipe frame is matched with the clamping plate piece to do transverse telescopic movement along the clamping pipe frame, so that the distance between the clamping plate piece and the side mounting frame is changed by adjusting the position of the clamping plate piece on the clamping pipe frame; and therefore, the installation of energy storage batteries with different specifications can be adapted."

[Henan Chenshuo New Energy Tech was Granted Patent for Lithium Battery Placing Device](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- The State Intellectual Property Office of China has published a patent on lithium battery placing device for Henan Chenshuo New Energy Tech. This invention was developed by Huang Lei.

The patent application number is CN202321411304U 20230605. The patent publication number is CN219959304 (U). International Patent Classification codes are H01M10/052, H01M10/058, H01M50/204, H01M50/244 and H01M50/289.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a lithium battery placing device, which belongs to the technical field of lithium battery production equipment and comprises an insulating placing shell, a placing groove is arranged in the insulating placing shell, a sliding groove is arranged on one side of the insulating placing shell, a sliding block is slidably connected in the sliding groove, a mounting block is fixedly connected on one side of the insulating placing shell, and the mounting block is fixedly connected with the insulating placing shell. And a motor is fixedly connected to the mounting block, an adjustable assembly is arranged on an output shaft of the motor, and the adjustable assembly is fixedly connected with the sliding block. Under the combined action of a threaded rod, a threaded cylinder, a motor, a sliding groove, a sliding block, a sliding plate and the like, the motor drives the threaded rod to rotate, under limiting of the sliding groove and the sliding block, a pushing plate can be moved to the position under a lithium battery needing to be taken, and under the combined action of a through groove, an electric push rod, the pushing plate and the like, the lithium battery needing to be taken

can be lifted by the pushing plate; and therefore, the required lithium battery can be conveniently taken out by hands of workers or a gripper on a mechanical arm."

Hefei Guoxuan High Tech Power Energy Receives New Patent for Device for Accelerating Pre-Lithiation

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- CN202320160508U 20230209 was issued by the State Intellectual Property Office of China and is titled device for accelerating pre-lithiation. This invention was developed by Xie Wenjie, Xie Qiangsheng, Liu Chaohui, Bi Chaoqi, Wang Xueyou and Tang Ming.

The patent application number is CN202320160508U 20230209. The patent publication number is CN219959093 (U). International Patent Classification codes are H01M10/04, H01M10/0525, H01M10/058 and H01M10/42. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a pre-lithiation accelerating device, which comprises a rotating piece, a pre-lithiation accelerating device and a pre-lithiation accelerating device, wherein the rotating piece is used for fixing a pre-lithiation battery cell and driving the pre-lithiation battery cell to rotate; the driving part is used for driving the rotating part to rotate; and the conductive part is electrically connected with the pre-lithium battery cell. Therefore, pre-lithiation can be accelerated and the pre-lithiation effect can be improved in a rotating manner, so that lithium on a lithium belt of the pre-lithiation battery cell in the infiltration process can achieve a better consumption effect, more active lithium still exists after the SEI film is formed in the formation stage, and the lithium ion supplement rate is improved."

State Intellectual Property Office of China Awards Patent for Lithium Ion Battery

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- State Intellectual Property Office of China has awarded Envision Power Tech Jiangsu, Yuanjing Power Tech Hubei, Yuanjing Power Tech Ordos and Yuanjing Ruitai Power Tech Shanghai a patent for lithium ion battery. Che Peipei and Zhai Wei developed the invention.

The patent application number is CN202321403539U 20230602. The patent publication number is CN219959091 (U). International Patent Classification codes are H01M10/0525, H01M4/13, H01M50/534, H01M50/586, H01M50/59 and H01M50/593.

The abstract released by the State Intellectual Property Office of China states, "The utility model discloses a lithium ion battery. The lithium ion battery comprises a positive pole piece, a diaphragm and a negative pole piece, wherein the positive pole piece and the negative pole piece are respectively positioned on two sides of the diaphragm; the positive pole piece comprises a positive current collector, a first material layer and a second material layer which are sequentially arranged along the thickness direction of the lithium ion battery; the second material layer at least comprises a positive active material region and an insulating ceramic region, and the positive active material region and the insulating ceramic region are adjacently arranged on at least one side; the first material layer is arranged on the metal layer of the positive electrode current collector, and the first material layer at least comprises a prime coat insulating layer; the prime coat insulating layer is arranged between the insulating ceramic region and the metal layer of the positive electrode current collector; the lengths of the prime coat insulating layer and the insulating ceramic area

are not equal; and the negative pole piece comprises a negative current collector and a negative active material region. The lithium ion battery disclosed by the utility model is relatively low in cost, good in adhesive force effect and not easy to fall off."

Chinese Patent Grant Awarded for Lithium Battery Calibration Tool

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Intelligent Automation Zhuhai has received a patent on lithium battery calibration tool. This invention was developed by Pan Weicong, Zhu Yanfei and Li Feng.

The patent application number is CN202320616453U 20230327. The patent publication number is CN219959095 (U). International Patent Classification codes are H01M10/052 and H01M10/058. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model aims to provide a ring-shaped ring which is simple in structure, convenient to use, good in compatibility and convenient to use. The device comprises a base, a bottom plate, a plurality of mounting strips, a plurality of supporting strips, a plurality of wiring blocks and a calibration assembly, the bottom plate is arranged on the base, the bottom plate is provided with a plurality of supporting columns, the supporting columns are correspondingly connected with the supporting strips, the mounting strips are adjustably connected with the supporting strips, and the wiring blocks are arranged on the bottom plate. A supporting plate is arranged between every two adjacent supporting strips, the wiring blocks are arranged on the mounting strips and matched with external cables, baffles are arranged on the periphery of the base, and the calibration assembly is arranged on the bottom plate and matched with a lithium battery in a calibration mode. The lithium battery calibration tool is applied to the technical field of lithium battery calibration tools."

Shenzhen Taibo Xunrui Tech Awarded New Patent for Vehicle Lithium Battery Packaging Device

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Taibo Xunrui Tech has announced issuance of a new patent for vehicle lithium battery packaging device. Zhao Weiwei developed the invention.

The patent application number is CN202320994547U 20230427. The patent publication number is CN219959096 (U). International Patent Classification codes are H01M10/058, H01M50/244 and H01M50/249. Cooperative Patent Classification codes are Y02E60/10 (EP) and Y02P70/50 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model belongs to the technical field of vehicle lithium battery equipment, and particularly relates to a vehicle lithium battery packaging device which comprises a device bottom plate, a vertical guide rail is installed in the middle of the top face of the device bottom plate, a lifting sliding table is installed on the surface of the vertical guide rail in a sliding mode, and a raw material bin is fixedly installed on the front face of the lifting sliding table. A feeding pipe is fixed to the side face of the lifting sliding table, the bottom side of the raw material bin communicates with the front end of the feeding pipe, an electric sliding table is fixed to the bottom side of the feeding pipe in parallel, and a pushing rod is fixed to a moving part of the electric sliding table. According to the utility model, the L-shaped bracket is arranged, the battery rack and the filled lithium battery core are fixed, and the two ends of the fixed lithium battery core are welded, so that the integrated efficient

packaging operation of battery filling and welding is integrated, and the production efficiency of the lithium battery pack for the vehicle is greatly improved; and meanwhile, by adjusting the moving height of the lifting sliding table and the moving distance of the horizontal conveying mechanism, the lithium battery cells of various specifications can be packaged, and the production requirements of various types of vehicle lithium battery packs are met."

[Dayun Motor Obtains Patent for Cylindrical Power Battery System](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Dayun Motor has obtained a patent for cylindrical power battery system. This invention was developed by Gong Qingwei, Jin Chaofeng and Wang Mingdong.

The patent application number is CN202320710732U 20230404. The patent publication number is CN219959316 (U). International Patent Classification codes are H01M10/613, H01M10/625, H01M10/643, H01M10/655, H01M10/6556, H01M50/30, H01M50/367 and H01M50/383. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a cylindrical power battery system. The cylindrical power battery system comprises a battery shell assembly, the multiple groups of battery modules are integrated in the battery shell assembly; an accommodating cavity for accommodating the battery module is formed in the battery shell assembly, and the battery shell assembly is provided with an air release valve port communicated with the accommodating cavity; a plurality of cylindrical lithium ion batteries are integrated in the battery module, a smoke exhaust channel is arranged at the bottom of the battery module, and the smoke exhaust channel is communicated with the accommodating cavity of the battery shell assembly so as to guide smoke into the accommodating cavity and discharge the smoke from the air escape valve port. According to the utility model, the smoke exhaust channel is designed in the battery module, so that the smoke after thermal runaway is guided into the battery shell component and is exhausted from the air escape valve port of the battery shell component, and therefore, the thermal runaway heat of the battery cell is directionally exhausted out of the battery compartment, the heat accumulation is slowed down, and the safety performance of the battery is improved."

[State Intellectual Property Office of China Issues Patent CN202321360328U 20230531 to Jiangxi Ganfeng Lithium Battery Tech for Bare Cell of Secondary Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jiangxi Ganfeng Lithium Battery Tech has been awarded patent in the Chinese for bare cell of secondary battery. Ge Zhimin, Chen Juan and Li Tao developed the invention.

The patent application number is CN202321360328U 20230531. The patent publication number is CN219959099 (U). International Patent Classification codes are H01M10/052, H01M10/058, H01M10/0583, H01M50/40, H01M50/423 and H01M50/449.

The abstract released by State Intellectual Property Office of China states, "The utility model provides a naked battery cell of a secondary battery, which relates to the technical field of secondary batteries and comprises a plurality of pole pieces which are respectively positive pole pieces and negative pole pieces, a diaphragm which is arranged between the positive pole pieces and the negative pole pieces, the diaphragm isolates each positive pole piece from each negative pole piece along a Z shape to form an assembly area, the tail end of the diaphragm surrounds the assembly area for at least one circle, and the diaphragm is arranged between the positive pole pieces and the negative pole pieces. The

coating is arranged on the surface of the diaphragm, the tail end of the diaphragm is adhered to the surface of the diaphragm in the assembly area through the coating, and the position, corresponding to the coating, of the diaphragm is in an inward concave shape; the size of the diaphragm in the X direction is larger than the size of the pole piece in the X direction and is at least larger than 0.5 cm, the two sides of the diaphragm in the X direction extend out of the two sides of the pole piece, and the diaphragm of the naked battery cell is fixed by adopting an insulating polyimide resin adhesive material, so that the self-discharge of the battery in the later period can be reduced or even completely avoided."

[Tianjin Borui Kuxin Tech Receives New Patent for Battery Cell Preheating and Hot Pressing Equipment](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- CN202321282856U 20230525 was issued by the State Intellectual Property Office of China and is titled battery cell preheating and hot pressing equipment. This invention was developed by Zhao Qiuxin.

The patent application number is CN202321282856U 20230525. The patent publication number is CN219959098 (U). International Patent Classification codes are H01M10/04, H01M10/058 and H01M6/00. Cooperative Patent Classification codes are Y02E60/10 (EP) and Y02P70/50 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model belongs to the technical field of lithium battery manufacturing, and particularly relates to battery cell preheating and hot-pressing equipment which comprises a supporting plate, a fixing frame is fixedly connected to the upper side of the supporting plate, a lower hot-pressing plate is fixedly connected to the upper side of the fixing frame, and a hot-pressing assembly is arranged above the lower hot-pressing plate. A preheating material taking device is arranged on the side of the supporting plate and comprises an electric rotating disc, and the electric rotating disc is fixedly connected to the upper side of the supporting plate. The supporting column is fixedly connected to the rotating end of the electric rotating disc. According to the battery cell preheating and hot-pressing equipment, through the use of the preheating material taking device, a battery cell can be automatically grabbed and placed on the lower hot-pressing plate before hot-pressing, meanwhile, in the grabbing and transferring process, the grabbed battery cell can be subjected to contact preheating, the preheating effect of the battery cell is improved, then the preheated battery cell is placed on the lower hot-pressing plate, and therefore the battery cell preheating and hot-pressing efficiency is improved. And the hot-pressing effect of the battery cell can be improved subsequently."

[Lithium Ion Battery Patent Assigned to Zhuhai Cosmx Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Today the State Intellectual Property Office of China published a granted patent for Zhuhai Cosmx Battery. This invention was developed by Sheng Donghui, Zhao Junyi, Wu Xiaofeng and Xie Jichun.

The patent application number is CN202321625204U 20230625. The patent publication number is CN219959319 (U). International Patent Classification codes are H01M10/0525, H01M10/0587, H01M50/44 and H01M50/494.

According to the abstract released by the State Intellectual Property Office of China: "The utility model provides a lithium ion battery, and relates to the technical field of batteries, the battery comprises: a first electrode plate, a second electrode plate and a fiber layer located between the first electrode plate and the second electrode plate, the fiber layer

comprises a first fiber layer and a second fiber layer located on two opposite side surfaces of the first electrode plate, the first electrode plate, the fiber layer and the second electrode plate are stacked and wound to form a roll core; the polarities of the first electrode plate and the second electrode plate are opposite; the first fiber layer is positioned on one side, close to the center of the roll core, of the first electrode plate; the second fiber layer is located on the side, away from the center of the roll core, of the first electrode plate, and the stretch rate of the first fiber layer is larger than that of the second fiber layer. The battery cell structure can be simplified, and the energy density of the battery cell is improved; and the expansion stress acting on the electrode plate is weakened, the volume expansion of the battery is inhibited, and the safety performance of the battery is improved."

[Dezhou Donghong Film Making Tech Granted Chinese Patent for High-Stiffness Lithium Ion Battery Diaphragm](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Dezhou Donghong Film Making Tech has been granted a patent for high-stiffness lithium ion battery diaphragm. This invention was developed by Wang Qingtong, Liu Yang, Xu Shimin, Zhang Ming, Liu Jian and Pan Jiangbo.

The patent application number is CN202223172432U 20221129. The patent publication number is CN219959318 (U). International Patent Classification codes are H01M50/40 and H01M50/449. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a high-stiffness lithium ion battery diaphragm which comprises a PE diaphragm body, the PE diaphragm body is provided with a net-shaped supporting layer, the net-shaped supporting layer is adopted to improve the stiffness of the battery diaphragm integrally, and the net-shaped supporting layer adopts two schemes: one scheme is that when the PE diaphragm body is processed, ultra-high molecular weight polyethylene is added into raw materials of the PE diaphragm body, and the other scheme is that when the PE diaphragm body is processed, ultra-high molecular weight polyethylene is added into the raw materials of the PE diaphragm body; one of the methods is that a net-shaped supporting layer is formed in the membrane when ultra-high molecular weight polyethylene is extruded to prepare the membrane, so that the stiffness of the battery diaphragm can be increased, and the other method is that a low molecular weight distribution raw material is added into the raw materials, a to-be-processed net-shaped supporting layer is formed in the membrane when the low molecular weight distribution raw material is extruded to prepare the membrane, and the net-shaped supporting layer is dried at low temperature and low air speed. And the elasticity modulus is increased due to high stretching multiple, so that the stiffness of the diaphragm is greatly improved."

[EVE Energy Bags Patent for a Coating Film for Lithium Ion Battery and Lithium Ion Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- EVE Energy has been granted a patent for coating film for lithium ion battery and lithium ion battery by the State Intellectual Property Office of China. This invention was developed by Li Yueyue, Cui Huamin, Liu Hanxiang and He Meng.

The patent application number is CN202321464335U 20230608. The patent publication number is CN219959102 (U). International Patent Classification codes are H01M10/0525, H01M10/0587, H01M10/658 and H01M50/124.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model relates to a coating film for a lithium ion battery, the coating film comprises a bottom surface coating sheet, two opposite sides of the bottom surface coating sheet are respectively connected with large surface coating sheets, and two opposite sides of each large surface coating sheet are respectively connected with side surface coating sheets; the bottom surface coating sheet, the large surface coating sheet and the side surface coating sheet form a containing cavity with an opening, and the containing cavity is used for containing a roll core; a plurality of first through holes are formed in the bottom surface coating sheet, and the aperture of at least one first through hole is gradually reduced from the exterior of the accommodating cavity to the interior of the accommodating cavity in the thickness direction of the bottom surface coating sheet; a plurality of second through holes are formed in at least one large-surface covering sheet; the side, facing the interior of the containing cavity, of the large-surface covering piece is a first surface, the side, back to the interior of the containing cavity, of the large-surface covering piece is a second surface, and at least one second through hole penetrates through the first surface and the second surface in the first direction; the included angle between the first direction and the plane where the large-surface covering sheet is located is an acute angle. The electrolyte has the effect of improving the wettability of the electrolyte on the roll core."

[Shenzhen Topway New Energy Awarded Patent for Anti-Deformation Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Topway New Energy has been awarded a patent for anti-deformation lithium battery. This invention was developed by Wu Yifang.

The patent application number is CN202321548813U 20230617. The patent publication number is CN219959101 (U). International Patent Classification codes are H01M10/052, H01M10/058, H01M50/107, H01M50/124, H01M50/134, H01M50/14 and H01M50/141. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The anti-deformation lithium battery comprises a reinforcing cavity, gasket reinforcing mechanisms and insulating diaphragms, the gasket reinforcing mechanisms are arranged at the two ends of the reinforcing cavity, the insulating diaphragms are distributed on the periphery of the reinforcing cavity, and the reinforcing cavity comprises electrode leads, electrolyte, positive and negative electrode layers, a structural outer frame and an outer frame ring. An electrolyte is arranged at the periphery of the electrode lead, and positive and negative electrode layers are distributed on the outer wall of the periphery of the electrolyte. According to the anti-deformation lithium battery, the outer frame rings distributed on the periphery of the structure outer frame are connected with the structure outer frame to form an integral protective frame, and the integral material is made of a stainless steel material; the whole internal structure of the battery can be supported and protected through the outer frame ring structure which is integrally and annularly distributed, and internal extrusion damage and deformation phenomena are reduced, so that the structural stability and strength of the whole battery are improved, and potential safety hazards in use and storage processes are reduced."

[Kunshan Shangao Optoelectronics Tech Gets New Chinese Patent Related to Gel Solid-State Lithium Battery Cell Clamping and Rotating Mechanism](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Kunshan Shangao Optoelectronics Tech has secured patent for its gel solid-state lithium battery cell clamping and rotating mechanism. This invention was developed by Ye Changzhi and Ding Daojian.

The patent application number is CN202321377957U 20230601. The patent publication number is CN219959100 (U). International Patent Classification codes are H01M10/052 and H01M10/058.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model provides a gel solid-state lithium battery cell clamping and rotating mechanism, which belongs to the technical field of gel solid-state lithium batteries and comprises a bearing slide rail, a bearing plate is slidably connected onto the bearing slide rail, a clamping slide groove is fixedly connected to the bottom of one side of the bearing slide rail, a translation slide groove is fixedly connected to the top of one side of the bearing slide rail, and the bearing plate is slidably connected onto the bearing slide rail. And the rotating mechanism comprises a rotating disc rotationally connected to the bearing plate, a rotating assembly is arranged at the bottom of the rotating disc, the rotating assembly comprises a rotating end fixedly connected to the bottom of the bearing plate, and a rotating shaft is arranged in the rotating end. The bearing sliding rail, the clamping sliding groove and the translation sliding groove are arranged, automatic adhesive tape pasting can be achieved in cooperation with an adhesive tape pasting assembly line, higher efficiency is achieved, consumption of manpower and material resources is reduced, meanwhile, the clamping mechanism is arranged and matched with the rotating mechanism, automatic rotation at different angles can be achieved, adhesive tape pasting is synchronous, and the production efficiency is improved. And the working efficiency of sticking the adhesive tape is greatly improved."

[Chinese Patent for Connecting Piece for Lithium Battery Issued to Guangdong Lihua New Energy Tech](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Chinese Patent for connecting piece for lithium battery has been issued to Guangdong Lihua New Energy Tech. This invention was developed by Zhang Linjun.

The patent application number is CN202222878523U 20221031. The patent publication number is CN219959323 (U). International Patent Classification codes are H01M50/244 and H01M50/50. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a connecting piece for a lithium battery, and relates to the technical field of connecting pieces. The connecting piece comprises a mounting assembly which penetrates through a connecting piece body, wherein two fixing assemblies are arranged on one surface of the connecting piece body; the fixing assembly comprises an arc-shaped bearing plate and a U-shaped limiting plate, the U-shaped limiting plate is in elastic sliding fit with the upper portion of the arc-shaped bearing plate, the arc-shaped bearing plate is arranged on one face of the connecting piece body, protruding blocks are arranged on the two opposite sides of the arc-shaped bearing plate, shaft rods are arranged between the protruding blocks and the connecting piece body, and the shaft rods penetrate through the U-shaped limiting plate. By means of the arc-shaped bearing plate, the installed lithium battery is pressed on the arc-shaped bearing plate, the probability that the lithium battery makes contact with the U-shaped limiting plate is reduced, meanwhile, the U-shaped limiting plate elastically slides in a matched mode, so that the U-shaped limiting plate can move rapidly, the sliding distance and the sliding direction of the U-shaped limiting plate are limited through cooperation of the shaft rod and the protruding block, and the safety of the lithium battery is improved. And the probability that the U-shaped limiting plate is separated from the shaft rod is reduced."

[Jinggangshan Jingshan New Energy Gets Patent for Lithium Battery Formation and Capacity Grading Equipment](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Jingtangshan Jingshan New Energy has received a patent for lithium battery formation and capacity grading equipment. This invention was developed by Zhang Wentao, Liu Qiong and Li Huiming.

The patent application number is CN202320933185U 20230423. The patent publication number is CN219959110 (U). International Patent Classification codes are H01M10/052, H01M10/058 and H01M10/44. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses lithium battery formation and capacity grading equipment which comprises a cabinet body, two trays and a limiting and fixing mechanism, the two trays are respectively arranged in the cabinet body, the limiting and fixing mechanism is arranged on the trays, the limiting and fixing mechanism comprises a placing plate, and the placing plate is arranged on the cabinet body. The number of the placement plates is four, the placement plates are installed at the tops of the two trays correspondingly, the sides, close to each other, of the two placement plates located on the same side are fixedly connected through two installation blocks, and placement grooves are formed in the tops of the placement plates. According to the lithium battery formation and capacity grading device, the placement plate, the mounting block, the placement groove, the top block, the fixed shell, the servo motor, a threaded rod, a threaded block, a movable plate and a limiting block are matched with one another, so that a lithium battery is conveniently fixed and limited, the stability of the lithium battery formation and capacity grading is ensured, the number of the lithium battery clamped and fixed each time is increased, and the production efficiency is improved. Therefore, the formation and capacity grading efficiency of the lithium battery is improved, and the practicability is improved."

[Anhui Wuxing Power New Energy Got Patent Approval for Quick Charging Type Lithium Ion Battery Cell Structure](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Anhui Wuxing Power New Energy today announced that it has been granted patent approval for quick charging type lithium ion battery cell structure by State Intellectual Property Office of China. Sun Qiyong developed the invention.

The patent application number is CN202320893307U 20230420. The patent publication number is CN219959107 (U). International Patent Classification codes are H01M10/42, H01M10/613, H01M10/625, H01M10/643, H01M10/653, H01M10/655, H01M10/656, H01M10/6567, H01M10/6568, H01M50/202, H01M50/224 and H01M50/244.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a quick charging type lithium ion battery cell structure, which relates to the technical field of lithium batteries, and comprises a battery cell body and a voltage stabilizing capacitor, two poles of the battery cell body are connected in parallel with a wiring end of the voltage stabilizing capacitor, the rated working voltage of the voltage stabilizing capacitor is not less than the maximum voltage between the two poles of the battery cell body, and the quick charging type lithium ion battery cell structure also comprises a shell sleeved outside the battery cell body, a metal film is arranged on the inner wall of the shell, a capillary channel is arranged in the side wall of the shell, a storage ring is arranged at the position, close to the end of the shell, of the side wall of the shell, the capillary channel is communicated with the storage ring, the inner side wall of the capillary channel is attached to the metal film, and a heat exchange agent is poured into the capillary channel and the storage ring. According to the technical scheme, the time required by the boosting stage during charging of the

battery cell can be shortened, the influence of heat on the temperature of the battery cell can be reduced, the use amount of a charging management chip can be reduced in the charging process of the battery cell, the cost is saved, and the rapid charging effect is achieved."

[Shanghai BM Assembly Electric Obtains Patent for Lithium Battery Spontaneous Combustion Hidden Danger Safety Early Warning Device](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shanghai BM Assembly Electric has obtained a patent for lithium battery spontaneous combustion hidden danger safety early warning device. This invention was developed by Ji Weibin, Mao Fei and Xia Chuangna.

The patent application number is CN202321156552U 20230512. The patent publication number is CN219959114 (U). International Patent Classification codes are A62C3/16, A62C31/02, A62C37/40, G08B7/06, H01M10/42, H01M10/48, H01M10/613, H01M10/655, H01M10/6554 and H01M10/6567.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model provides a lithium battery spontaneous combustion hidden danger safety early warning device which comprises an alarm cooling device which comprises a battery body, a plurality of temperature sensors, a plurality of nozzles, a first wire, a pipeline, a medicine outlet pipe, a monitoring box, an electric valve, a second wire and a protection box. The temperature sensors are used for monitoring the temperatures of different positions of the battery, signals are transmitted to the monitoring box through the first wire, and when the battery is about to spontaneously ignite due to too high temperature, the monitoring box can transmit the signals to the electric valve through the second wire, so that the electric valve is automatically opened; perfluorohexanone in a pesticide storage barrel is conveyed to a spray head through a pipeline under the pressure of a pressure tank to spray a battery, so that the battery is cooled and extinguished, and meanwhile, a monitoring box transmits a signal to a flashing light and a buzzer through a third wire, so that the attention of surrounding crowds is aroused, the surrounding crowds are reminded to rapidly evacuate, and the safety of the battery is improved. And harm to surrounding people is avoided."

[State Intellectual Property Office of China Issues Patent CN202321652979U 20230627 to Shenzhen Xiongtao Lithium Battery; Shenzhen Center Power Tech for Multi-Tab Battery Structure](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Xiongtao Lithium Battery; Shenzhen Center Power Tech has been awarded patent in the Chinese for multi-tab battery structure. Jiang Shuilian developed the invention.

The patent application number is CN202321652979U 20230627. The patent publication number is CN219959344 (U). International Patent Classification codes are H01M50/172 and H01M50/531.

The abstract released by State Intellectual Property Office of China states, "The utility model provides a multi-tab battery structure which comprises a cover plate, a battery cell and a shell, the battery cell is arranged in the shell, and the cover plate is arranged on the end face of one end of the shell; the battery cell comprises at least one battery cell unit, a first positive electrode connecting piece, a second positive electrode connecting piece and a negative electrode connecting piece; the first positive electrode connecting sheet is connected with a first positive electrode lug of the battery cell unit; the second positive electrode connecting sheet is connected with a second positive electrode lug of the

battery cell unit; the negative electrode connecting sheet is connected with a negative electrode lug of the battery cell unit; and the negative tab is arranged between the first positive tab and the second positive tab. The structure is simple, the performance is reliable, the current density distribution in the battery can be well balanced, local overheating in the battery is prevented, accelerated aging of the battery is prevented, and the battery is particularly suitable for a high-capacity cell battery structure."

[EVE Energy Secures Chinese Patent for Battery Cell and Battery Pack](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- EVE Energy has been granted patent for battery cell and battery pack by State Intellectual Property Office of China. This invention was developed by Wang Jiao, Qiu Zhangheng, Wang Hua, Yuan Dingding and He Wei.

The patent application number is CN202321394818U 20230531. The patent publication number is CN219959115 (U). International Patent Classification codes are H01M10/052 and H01M10/48.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a battery cell which comprises a lithium precipitation detection element which is used for monitoring the lithium precipitation amount and the lithium precipitation state; the roll core assembly comprises a positive pole piece, a negative pole piece and a diaphragm, the positive pole piece and the negative pole piece are stacked, a lithium precipitation monitoring area is formed between the positive pole piece and the negative pole piece, the diaphragm and the lithium precipitation detection element are located in the lithium precipitation monitoring area, and the positive pole piece, the negative pole piece and the diaphragm are wound. Meanwhile, the utility model further discloses a battery pack applying the battery cell, and the problems that the workload of analyzing lithium precipitation of a battery is large and the opportunity is difficult to accurately grasp in the prior art are solved."

[Pole Structure of Battery Patent Assigned to Hubei Xiongtao Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Today the State Intellectual Property Office of China published a granted patent for Hubei Xiongtao Lithium Battery. This invention was developed by Huang Tao and Miao Jie.

The patent application number is CN202320657307U 20230329. The patent publication number is CN219959352 (U). International Patent Classification codes are H01M50/55 and H01M50/553. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model relates to the technical field of battery pole columns, and discloses a pole column structure of a battery, which comprises a pole column male head and a pole column female head, and the pole column female head is connected onto the pole column male head, so that the pole column female head is sleeved on the pole column male head; the limiting pin is inserted into the pole male head and the pole female head and can lock the pole male head and the pole female head; and an anti-falling part. When the pole structure of the battery is used, the internal thread of the pole female head is in threaded connection with the external thread on the outer side of the pole male head, so that the pole female head is sleeved on the pole male head, the phenomenon of poor contact between the pole female head and the pole male head is prevented, and the risk of open circuit of a storage battery is reduced; the terminal post female head and the terminal post male head can be locked through the limiting pins, the terminal post female head is prevented from loosening, the limiting

pins installed on the terminal post female head and the terminal post male head can be limited through the anti-falling part, and the limiting pins are prevented from falling off from the terminal post female head and the terminal post male head."

Zhangzhou Aucopo Energy Tech Bags Patent for a Lithium Battery Structure with Multiple Tabs

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Zhangzhou Aucopo Energy Tech has been granted a patent for lithium battery structure with multiple tabs by the State Intellectual Property Office of China. This invention was developed by Wu Jianping.

The patent application number is CN202321499521U 20230613. The patent publication number is CN219959350 (U). International Patent Classification codes are H01M10/0587 and H01M50/538.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model relates to a lithium battery structure with multiple tabs, which is characterized by comprising a positive plate, a negative plate and an isolating layer positioned between the positive plate and the negative plate, and the positive plate, the isolating layer and the negative plate are wound into a cylindrical winding body along the length direction; the positive plate, the negative plate and one side edge of the positive plate or the negative plate are provided with a plurality of unequal-distance and unequal-length tabs which are integrated with the positive plate or the negative plate; the tabs on the positive plate are wound into a cylindrical winding body and then are mutually and oppositely overlapped to form tabs of the positive plate; the tab pieces on the negative plate are wound into a cylindrical winding body and then are oppositely overlapped to form tabs of the negative plate; according to the lithium battery adopting the structural design disclosed by the utility model, the conductivity of the positive plate and the negative plate is obviously improved, the internal resistance of the lithium battery is reduced, and the heating phenomenon of the lithium battery is reduced."

Device for Co-Processing Waste Lithium Battery in Cement Kiln Patent Assigned to Anhui Conch Kawasaki Energy Conservation Equipment

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Today the State Intellectual Property Office of China published a granted patent for Anhui Conch Kawasaki Energy Conservation Equipment. This invention was developed by Qu Jianchang, Wang Ning, Jin Zhou, Liu Dazhu and Guo Xinxin.

The patent application number is CN202320989656U 20230427. The patent publication number is CN219959122 (U). International Patent Classification codes are B09B3/40, C04B7/44, H01M10/54 and B09B101/16. Cooperative Patent Classification code is Y02W30/84 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a device for cooperatively processing waste lithium batteries in a cement kiln. The treatment bin body is arranged on the bracket; the conveying chain is rotationally mounted in the treatment bin body; the waste batteries can be conveyed on the conveying chain; the feeding hole is formed in the treatment bin body, and the feeding hole is formed in the feeding end of the conveying chain; the discharging opening is formed in the treatment bin body and located in the discharging end of the conveying chain; the air inlet pipe is arranged on the bracket, and the air inlet pipe is communicated with the interior of the treatment bin body; and the air outlet pipe is arranged on the support, the air inlet pipe is communicated

with the interior of the treatment bin body, waste gas waste heat of the cement kiln is used for high-temperature evaporation of waste lithium battery electrolyte for discharging, automatic, continuous and large-batch waste lithium battery discharging is achieved, and manual disassembly is not needed."

[Shenzhen Qianli New Energy Secures Patent for Waste Lithium Battery Treatment Equipment Convenient for Recycling and Cleaning Waste Liquid](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Qianli New Energy has secured a patent on waste lithium battery treatment equipment convenient for recycling and cleaning waste liquid. Jiang Changjun developed the invention.

The patent application number is CN202320716417U 20230404. The patent publication number is CN219959120 (U). International Patent Classification codes are H01M10/54 and H01M6/52. Cooperative Patent Classification code is Y02W30/84 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses waste lithium battery processing equipment convenient for recovering and cleaning waste liquid, which comprises a waste lithium battery processing equipment main body, the waste lithium battery processing equipment main body comprises a positioning plate, four corners of the lower surface of the positioning plate are fixedly provided with supporting legs, one side of the positioning plate is provided with a first groove, and the first groove is provided with a second groove. A stirring barrel is fixedly installed on the upper surface of the positioning plate, first through holes are formed in the upper surfaces of the stirring barrel and the positioning plate, a water outlet is fixedly installed on the lower surface of the positioning plate and corresponds to the first through holes, a valve is arranged on one side of the water outlet, and a stirring assembly is detachably installed at the upper end of the stirring barrel. The waste lithium battery waste liquid recovery device has the advantages that waste lithium battery waste liquid can be rapidly recovered according to mutual cooperation of equipment mechanisms when the device is used, the waste lithium battery waste liquid can be conveniently recovered, and the equipment mechanisms can be adjusted according to use requirements when the device is used or after the device is used, so that the device is convenient to overhaul, maintain and use."

[Guangdong Brunp Recycling Technology and Hunan Brunp Recycling Tech Gets New Chinese Patent Related to Freezing, Breaking and Leaching Device for Waste Lithium Battery and Electrolyte Recovery Device Thereof](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Guangdong Brunp Recycling Technology and Hunan Brunp Recycling Tech have secured patent for its freezing, breaking and leaching device for waste lithium battery and electrolyte recovery device thereof. This invention was developed by Zhou Qi, Zheng Yu, Shi Quanqing, Liu Yongqi, Gong Qinxue and Li Changdong.

The patent application number is CN202320250366U 20230216. The patent publication number is CN219959118 (U). International Patent Classification code is H01M10/54. Cooperative Patent Classification code is Y02W30/84 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a waste lithium battery freezing, breaking and leaching device and an electrolyte recovery device thereof. The waste lithium battery freezing, breaking and leaching device comprises a freezing, breaking and leaching mechanism, a leaching mechanism and an impurity removal mechanism, the freezing and cutting mechanism comprises a freezing

device and a cutting device, and the freezing device is connected with a material inlet of the cutting device; the leaching mechanism comprises a leaching tank and a first solvent storage tank, a material inlet of the leaching tank is connected with the breaking and cutting device, and a solvent inlet of the leaching tank is connected with the first solvent storage tank; the impurity removal mechanism comprises a first filtering device, an acid removal tower and a water removal tower which are connected in sequence, and the first filtering device is connected with the mother liquor outlet of the leaching tank. And through low-temperature cutting of the waste lithium battery, the decomposition of lithium hexafluorophosphate is reduced while the leaching efficiency is improved, and the fire hazard is also reduced."

[Guangdong Yuyang New Energy Bags Patent for a Household Lithium Battery Pack with Cooling Structure](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Guangdong Yuyang New Energy has been granted a patent for household lithium battery pack with cooling structure by the State Intellectual Property Office of China. This invention was developed by Zhong Chunyang and Chen Dajiao.

The patent application number is CN202320106483U 20230203. The patent publication number is CN219959124 (U). International Patent Classification codes are H01M10/613, H01M10/6556 and H01M10/6563. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a household lithium battery pack with a cooling structure, which comprises a box body, an installation cavity is arranged in the box body, an installation frame is fixedly installed on the cavity wall of the installation cavity, and the upper surface of the installation frame is fixedly connected with a lithium battery pack. A lithium battery pack can be mounted in the air in the box body through a mounting frame, then a driving motor can be started to drive a driving gear to rotate, the driving gear drives an air outlet cylinder to rotate through meshing with a second transmission gear, and the second transmission gear drives an air inlet cylinder to rotate through meshing with a first transmission gear; therefore, gas can be conveyed to the bottom of the box body from the outer side walls of the isolation plates through the gas inlet cylinder, and the gas outlet cylinder exhausts gas between the two isolation plates, so that the gas at the bottom of the box body is upward and moves between the isolation plates and the lithium battery pack, the lithium battery pack can be cooled, and the overall efficiency is higher."

[Chinese Patent for Quick-Charge and Quick-Discharge Lithium Battery Pack Issued to Dongguan Bobeisi New Energy Tech](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Chinese Patent for quick-charge and quick-discharge lithium battery pack has been issued to Dongguan Bobeisi New Energy Tech. This invention was developed by Ye Peng.

The patent application number is CN202223304432U 20221209. The patent publication number is CN219959123 (U). International Patent Classification codes are H01M10/052, H01M10/44, H01M10/613, H01M10/6554, H01M10/6563, H01M50/24, H01M50/244, H01M50/289 and H01M50/502. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model relates to the technical field of lithium batteries, in particular to a quick-charge and quick-discharge lithium battery pack. The device

comprises two battery pack mounting shells, a plurality of heat dissipation parts are arranged on the two sides of each battery pack mounting shell, a middle connecting shell is connected between the two battery pack mounting shells, dustproof heat dissipation plates are arranged on the inner sides of the battery pack mounting shells, and temperature detection mechanisms are arranged on the two sides of the middle connecting shell; a controller is arranged at one end of the middle connecting shell, and a battery pack is arranged between the two battery pack mounting shells. According to the utility model, a plurality of heat dissipation fans are arranged in the battery pack, so that the battery pack can be subjected to air-cooling heat dissipation in time, and the heat dissipation efficiency is high, so as to protect electrical components in the battery pack; the dustproof heat dissipation holes are formed in the battery pack mounting shell, so that heat in the battery pack mounting shell can pass through the dustproof heat dissipation holes, and external dust can be prevented from directly entering the battery pack mounting shell, so that electronic elements in the battery pack mounting shell are protected."

[Jiangsu Jufengyuan New Energy Tech was Granted Patent for Automatic Power-Off Protection Structure of Lithium Iron Phosphate Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- The State Intellectual Property Office of China has published a patent on automatic power-off protection structure of lithium iron phosphate battery for Jiangsu Jufengyuan New Energy Tech. This invention was developed by Yin Xuwei.

The patent application number is CN202320356999U 20230301. The patent publication number is CN219959358 (U). International Patent Classification codes are H01M50/574, H02H7/18 and H02J7/00. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses an automatic power-off protection structure of a lithium iron phosphate battery, and relates to the technical field of lithium iron phosphate batteries. The battery pack comprises an outer protective shell, a mounting frame is welded and mounted at the bottom of the inner side of the outer protective shell, the mounting frame is of a rectangular frame structure, an inner protective shell is welded and mounted at the top of the mounting frame, a plurality of groups of battery bodies are arranged in the inner protective shell at equal intervals, and buffer plates are arranged at intervals of the battery bodies. And a second power connection end is arranged at the top of the outer protective shell. Through the arrangement of the voltage detector, the device can detect the voltage condition of the battery in real time through the voltage detector, and meanwhile, through the cooperation of the power-off protection mechanism, after the battery is fully charged, the device can automatically separate an external power connection port to enable the battery to be separated from a charging state, so that the use safety of the battery is ensured; and meanwhile, the practicability of the device is improved to a certain extent."

[Datu Aerge Energy Tech Nantong Obtains Patent for Lithium Ion Power Battery Box Body](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Datu Aerge Energy Tech Nantong has obtained a patent for lithium ion power battery box body. This invention was developed by Zhao Yang.

The patent application number is CN202320819930U 20230413. The patent publication number is CN219959132 (U). International Patent Classification codes are H01M10/613, H01M10/655, H01M10/6556, H01M10/6568, H01M50/24 and H01M50/244. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model provides a lithium ion power battery box which comprises a box body, a sealing strip is adhered to the upper surface of the box body, one end of the box body is connected with a sealing mechanism, a built-in box is fixedly mounted on one side of the inner wall of the box body, a partition plate is arranged on the inner side of the built-in box, and a cooling mechanism is arranged on one side of the box body. According to the lithium ion power battery box body, through the arrangement of the bottom plate, the circulating pipe, the water return pipe, the water outlet pipe, a first protective cover, a radiator, a second protective cover, a cooling liquid box, a water pump and a dustproof net, cooling liquid in the cooling liquid box is driven by the water pump to enter the circulating pipe to flow, then heat enters the radiator through the water return pipe, and the heat is dissipated out through the radiator; and then the cooling liquid enters the cooling liquid box again through the radiator, and the circulation is carried out, so that the heat in the box body is dissipated, and the service life of the lithium ion power battery is prolonged."

[State Intellectual Property Office of China Awards Patent for Lithium Battery with Overheat Protection](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- State Intellectual Property Office of China has awarded Shenzhen Zkungfu Electronic Tech a patent for lithium battery with overheat protection. Zhang Shanheng, Wang Benfu and Yang Ke developed the invention.

The patent application number is CN202320577628U 20230322. The patent publication number is CN219959129 (U). International Patent Classification codes are A62C3/16, H01M10/052, H01M10/613, H01M10/6556, H01M10/6568, H01M50/242, H01M50/244 and H01M50/264. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by the State Intellectual Property Office of China states, "The utility model relates to a lithium battery with overheat protection, which comprises a shell, a heat dissipation box is arranged in the shell, a lithium battery body is arranged in the heat dissipation box, a heat dissipation cavity is arranged on the inner wall of the heat dissipation box, cooling liquid is arranged in the heat dissipation cavity, a heat dissipation pipe is arranged on one side of the heat dissipation box, and the lithium battery body is arranged on the other side of the heat dissipation box. The heat dissipation pipe is spirally wound around the outer portion of the shell, a supporting cylinder is arranged at the bottom of the heat dissipation box, and one end of the heat dissipation pipe extends into the supporting cylinder. Through rotation of the propeller, cooling liquid can enter the heat dissipation cavity of the heat dissipation box, so that the lithium battery body is subjected to heat dissipation, the situation that the temperature of the lithium battery in charging is too high, the cooling liquid after cooling the lithium battery body enters the heat dissipation pipe and enters the supporting cylinder again along with the heat dissipation pipe is avoided, and the service life of the lithium battery body is prolonged. And in the spiral heat dissipation pipe, the cooling liquid can dissipate heat, so that the cooling liquid can be recycled conveniently, and the lithium battery body can be fully cooled."

[Univ Jiangsu Secures Patent for Aerogel Heat Insulation Layer Structure for Passively Inhibiting Thermal Runaway of Cylindrical Lithium Battery Pack](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Univ Jiangsu has secured a patent on aerogel heat insulation layer structure for passively inhibiting thermal runaway of cylindrical lithium battery pack. Wang Tiansi, Ren Xiaobo, Yang Jiawei, Wang Wanlin, Pei Lei and Wu Baokun developed the invention.

The patent application number is CN202320467517U 20230313. The patent publication number is CN219959128 (U). International Patent Classification codes are H01M10/613, H01M10/625 and H01M10/658. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model discloses an aerogel heat insulation layer structure for passively inhibiting thermal runaway of a cylindrical lithium battery pack, which comprises an E-shaped annular heat insulation layer and a square heat insulation layer, the E-shaped annular heat insulation layer is arranged at the middle part of the cylindrical lithium battery pack, and the square heat insulation layer is arranged at the edge part of the cylindrical lithium battery pack; the E-shaped annular heat insulation layer and the square heat insulation layer are both made of silicon dioxide aerogel. The aerogel heat insulation layer structure can effectively delay the time of the thermal runaway spreading process of the battery pack, so that the personal and property safety is guaranteed."

[Lithium Battery Circulating Cooling System Patent Assigned to Henan Xintaihang Power](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Today the State Intellectual Property Office of China published a granted patent for Henan Xintaihang Power. This invention was developed by Chen Hong, Li Suliang, Pan Xinxing, Su Zhenghui, Duan Xudong, Zhang Kaiwei, Zheng Caiwu, Zhai Yu, Shang Jiachang and Cheng Haicheng.

The patent application number is CN20232147967U 20230505. The patent publication number is CN219959140 (U). International Patent Classification codes are H01M10/613, H01M10/655, H01M10/6554, H01M10/6556, H01M10/6563 and H01M10/6568.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a lithium battery circulating cooling system which comprises a refrigeration water tank, a water cooling plate and a circulating pump, an outlet of the refrigeration water tank is connected with a liquid inlet of the water cooling plate through a liquid inlet pipe, a liquid outlet of the water cooling plate is connected with an inlet of the circulating pump through a liquid outlet pipe, and an outlet of the circulating pump is connected with an inlet of the refrigeration water tank through a return pipe; the liquid inlet pipe is provided with a temperature control valve, the liquid inlet pipe is provided with a one-way valve between the temperature control valve and a liquid inlet of the water cooling plate, when the lithium battery is heated, cooling liquid from the temperature control valve on the liquid inlet pipe to the liquid outlet pipe is pumped into the refrigeration water tank, and external air is pumped into the liquid inlet pipe, the water cooling plate and the liquid outlet pipe; the lithium battery cooling system has the advantages that the heating efficiency of an external heating system on the lithium battery is improved, the energy consumption of the external heating system is reduced, the influence of a low-temperature environment on the structural performance of the cooling pipeline is reduced, and the like."

[Zhuhai Penghui Energy Granted Chinese Patent for Liquid Injection Glue Nail and Battery Cover Plate Assembly](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Zhuhai Penghui Energy has been granted a patent for liquid injection glue nail and battery cover plate assembly. This invention was developed by Gao Ang, Xia Xinde, Li Shuli, Zhao Hongwei, Wang Wenyan, Luo Haowei and Zhang Li.

The patent application number is CN202321204194U 20230517. The patent publication number is CN219959374 (U). International Patent Classification codes are H01M50/147, H01M50/627 and H01M50/645. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model provides a liquid injection glue nail and a battery cover plate assembly, and relates to the technical field of lithium batteries, the liquid injection glue nail comprises a glue nail main body, the glue nail main body is used for being inserted into a liquid injection hole of a battery and sealing the liquid injection hole; a plurality of ventilation grooves are formed in the plastic nail main body, and the ventilation grooves extend towards the first end of the plastic nail main body; the surface of the ventilation groove is an arc-shaped surface, and the axis of the arc-shaped surface is in the same direction as the length direction of the plastic nail main body; the first end of the plastic nail body is inserted into the liquid injection hole. The surface of the ventilation groove arranged on the glue nail main body of the liquid injection glue nail is an arc-shaped surface; therefore, the contact area between the plastic nail main body and the liquid injection hole can be increased under the condition of ensuring the same air permeability, so that the plastic nail main body is not easy to blow out from the liquid injection hole in the process of shaping and exhausting the battery cell."

[Yancheng Dalu Smart Tech was Granted Patent for Photovoltaic Power Generation and Storage Device](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- The State Intellectual Property Office of China has published a patent on photovoltaic power generation and storage device for Yancheng Dalu Smart Tech. This invention was developed by Sun Ridong.

The patent application number is CN202321531489U 20230615. The patent publication number is CN219959148 (U). International Patent Classification codes are H01M10/613, H01M10/615, H01M10/627, H01M10/653, H01M10/6551 and H01M10/658.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a photovoltaic power generation and storage device, and relates to the field of power storage devices. Comprising a storage box body, a lithium battery main body is fixedly installed in the storage box body, a sealing upper cover is fixedly installed at the upper end of the storage box body, and a temperature adjusting mechanism is arranged on the periphery of the lithium battery main body in the storage box body and comprises a heat preservation sponge strip, a first contact piece, a heat conduction metal strip, a second contact piece and an I-shaped installation groove. A locking mechanism is arranged between the sealing upper cover and the storage box body, the locking mechanism comprises a connecting seat, a locking buckle, a positioning base, a movable shaft, a movable groove and a mechanism handle, and after the heat preservation sponge strip is plugged into the storage box body, the heat preservation sponge strip can prevent the heat of the lithium battery main body from being dissipated outwards, so that the purpose of heat preservation is achieved; after the heat preservation sponge strip rotates by 90 degrees and is plugged into the storage box body, the first contact piece is connected to the surface of the lithium battery main body, and the second contact piece is connected to the surface of the storage box body, so that heat is dissipated outwards, and the purpose of cooling is achieved."

[Shenzhen Zhuoyi Tech Granted Chinese Patent for Lithium Ion Battery Pack with Overheating Intelligent Protection Function](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Zhuoyi Tech has been granted a patent for lithium ion battery pack with overheating intelligent protection function. This invention was developed by Jia Hongjie and Chen Wenfeng.

The patent application number is CN202321393062U 20230602. The patent publication number is CN219959146 (U). International Patent Classification codes are H01M10/613, H01M10/625, H01M10/635, H01M10/653, H01M10/6551, H01M10/6554, H01M10/6556, H01M10/6563, H01M50/24, H01M50/244 and H01M50/249.

According to the abstract released by the State Intellectual Property Office of China: "The lithium ion battery pack comprises a bottom plate and a supporting table, a limiting ring is mounted at the top of the bottom plate, a mounting shell is mounted on the inner side of the limiting ring, a threaded seat is mounted on one side of the limiting ring, a connecting screw is movably mounted on the inner side of the threaded seat through a thread, and the supporting table is mounted on the inner side of the threaded seat. One end of the connecting screw is mounted on the inner wall of the mounting shell through threads, and a temperature sensor is mounted on the inner side of the mounting shell. The temperature sensor and the blower are installed, a thermosensitive element in the temperature sensor is used for checking the stable change in the installation shell, then the temperature change is transmitted to the controller, the upper limit temperature of the interior of the installation shell is set in the controller, and when the temperature sensor checks that the temperature is too high, the controller starts the blower, so that the blower is started; and the air blower runs to drive external air to pass through the interior of the ventilation pipe and enter the interior of the mounting shell, so that the lithium ion battery is cooled."

[Liuzhou Penghui Energy Tech Obtains Patent for Air-Cooled Battery Box and Battery Cluster](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Liuzhou Penghui Energy Tech has obtained a patent for air-cooled battery box and battery cluster. This invention was developed by Shi Jinyu, Lu Yicheng, Wu Houfu, Luo Weichang, Yang Yongwei, Li Zhanhong and Wei Shuibo.

The patent application number is CN202321349426U 20230530. The patent publication number is CN219959145 (U). International Patent Classification codes are H01M10/613, H01M10/625, H01M10/627, H01M10/6556, H01M10/6563, H01M50/244, H01M50/249, H01M50/251 and H01M50/289.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model provides an air-cooled battery box and a battery cluster, and relates to the technical field of lithium battery, the air-cooled battery box comprises a bottom plate and a battery box main body arranged on the bottom plate, an air guide assembly is provided with an air outlet, and the air outlet faces the interval groove; the air guide assembly is used for guiding air blown out by the cooling fan to be blown out from the air outlet. According to the air-cooled battery box provided by the utility model, the interval groove is formed between the two mounting grooves formed in the bottom plate, so that a certain interval is formed between the mounting grooves; air blown out by the cooling fan can flow from the air outlet to the interval groove; therefore, heat generated by the battery cells in the mounting grooves in the two sides of the interval grooves can be effectively carried away, the battery cells are effectively cooled, the temperature of the whole battery cluster is reduced, and heat generated by the battery cluster is dissipated in time."

[Shenzhen Rishengzhi Electronics Tech Granted Chinese Patent for Heat Dissipation Device for Lithium Ion Power Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Rishengzhi Electronics Tech announced that the State Intellectual Property Office of China has granted another patent to heat dissipation device for lithium ion power battery. This invention was developed by Huang Long, Xu Zhihua, Peng Tao, Liao Maotie, Zhang QiuXiang, Zou Fusheng, Cao Xiaoyu and Jiang Youming.

The patent application number is CN202321650146U 20230627. The patent publication number is CN219959152 (U). International Patent Classification codes are H01M10/613, H01M10/655, H01M10/6554, H01M10/6556 and H01M10/6564.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a lithium ion power battery heat dissipation device which comprises a box body and a cover plate detachably connected to the box body, and further comprises a heat dissipation mechanism installed in the box body and used for conducting heat dissipation treatment on a battery arranged in the box body, the heat dissipation mechanism comprises heat dissipation fins, an installation column and a pipeline assembly, the cooling fins are fixedly connected to the mounting columns, and the mounting columns are detachably connected with the box body; wherein the pipeline assembly comprises a pipeline A, a pipeline B and a pipeline C, the pipeline B and the pipeline A are fixedly connected with the two ends of the pipeline C respectively and communicate with the pipeline C, and the pipeline B is fixedly connected with the box body; according to the utility model, the battery can be rapidly cooled and radiated, and gas interaction between the box body and the external environment can be completed, so that the cooling effect is further improved."

[Vehicle-Mounted Lithium Battery Protection Device Patent Assigned to Shenzhen Leihua Tech](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Today the State Intellectual Property Office of China published a granted patent for Shenzhen Leihua Tech. This invention was developed by Liu Yufu, Yu Jun, Zhang Jian, Chen Chao, Wei Liuhaohao and Li Jungang.

The patent application number is CN202321355064U 20230530. The patent publication number is CN219959164 (U). International Patent Classification codes are H01M10/613, H01M10/615, H01M10/625, H01M10/63, H01M10/637, H01M50/242, H01M50/244, H01M50/249 and H01M50/581.

According to the abstract released by the State Intellectual Property Office of China: "The utility model provides a vehicle-mounted lithium battery protection device, which relates to the technical field of lithium batteries, and comprises a box body and a protection mechanism, the bottom end of the box body is fixedly connected with a heat dissipation grid, the four corners of the bottom end of the heat dissipation grid are provided with bottom feet, one side of the heat dissipation grid is provided with a fan, and the top end of the box body is provided with the protection mechanism. Through the arrangement of the protection mechanism, when the voltage of the lithium battery exceeds a set maximum voltage value, the battery protection plate will actively cut off power connection to prevent charging from continuing, and when the voltage of the lithium battery drops to a set minimum voltage value, the battery protection plate will actively cut off current to prevent charging from continuing. And the battery protection plate can also realize temperature control, the temperature of the lithium battery can be detected in real time through the temperature sensor, and the battery protection plate can cut off current and prevent the lithium battery from being out of control in an overheat or overcold state of parameter setting, so that the safety of the vehicle-mounted lithium battery is effectively improved."

[Ningbo Fengyue New Energy Tech Bags Patent for a Combined Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Ningbo Fengyue New Energy Tech has been granted a patent for combined lithium battery by the State Intellectual Property Office of China. This invention was developed by Chen Shi.

The patent application number is CN202321317317U 20230525. The patent publication number is CN219959171 (U). International Patent Classification codes are H01M10/613, H01M10/6554 and H01M50/213.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model relates to the field of lithium battery pack heat dissipation, in particular to a combined type lithium battery which comprises three cylindrical lithium batteries arranged in a triangular mode. The heat dissipation assembly is arranged in the center of the three cylindrical lithium batteries, and the outer wall of the heat dissipation assembly is in contact with the sides, close to each other, of the three cylindrical lithium batteries; the adhesive tape is wound on the sides, deviating from each other, of the three cylindrical lithium batteries, so that the positions of the three cylindrical lithium batteries and the heat dissipation assembly are limited. According to the utility model, heat dissipation can be carried out on the centers of the three cylindrical lithium batteries by effectively utilizing the structural configuration of the lithium battery, and the lithium battery has the advantages of long service life, reasonable layout and simple structure."

[State Intellectual Property Office of China Issues Patent CN202321627222U 20230626 to Anhui Dingchu Electronic Tech for Lithium Battery Pack for New Energy Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Anhui Dingchu Electronic Tech has been awarded patent in the Chinese for lithium battery pack for new energy battery. Gu Jiajie developed the invention.

The patent application number is CN202321627222U 20230626. The patent publication number is CN219959169 (U). International Patent Classification codes are H01M10/48, H01M10/625, H01M10/6551, H01M10/6563, H01M50/202, H01M50/231, H01M50/24, H01M50/244, H01M50/249 and H01M50/264.

The abstract released by State Intellectual Property Office of China states, "The utility model relates to the technical field of new energy automobile batteries, and discloses a lithium battery pack for new energy batteries, which comprises a mounting seat, a placing groove is fixedly arranged at the upper end of the mounting seat, a lower shell is clamped in the placing groove, a battery body is fixedly arranged in the lower shell, and the battery body is fixedly arranged in the mounting seat. An upper shell is fixedly connected to the upper end of the lower shell through a plurality of fixing bolts, mounting plates are fixedly connected to the rear portions of the two sides of the lower shell, cooling fans are fixedly arranged at the upper portions and the lower portions of the interiors of the two mounting plates, and a plurality of cooling fins are fixedly arranged in the middles of the two sides of the lower shell. According to the lithium battery pack disclosed by the utility model, the lithium battery pack can be quickly mounted and can also be quickly dismounted after being damaged so as to be conveniently replaced by arranging a related dismounting structure, and meanwhile, multiple heat dissipation measures are additionally arranged on the lithium battery pack, so that the use safety of the lithium battery pack can be greatly improved."

[Shenzhen Zhuoyi Tech Secures Patent for Automatic Protection Device for Lithium Ion Battery Pack](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Shenzhen Zhuoyi Tech has secured a patent on automatic protection device for lithium ion battery pack. Jia Hongjie and Chen Wenfeng developed the invention.

The patent application number is CN202321591229U 20230621. The patent publication number is CN219959172 (U). International Patent Classification codes are H01M10/0525, H01M10/613, H01M10/655, H01M10/6555, H01M10/6563, H01M10/6566, H01M10/658, H01M50/204, H01M50/24, H01M50/244, H01M50/264 and H01M50/289.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses an automatic protection device for a lithium ion battery pack, which comprises a protection box, and two groups of metal plates are mounted on the inner side of the protection box. The automatic protection device is provided with a motor, so that when a worker uses the lithium ion battery pack, the motor is started, and the output end of the motor drives a fan to rotate; the fan is arranged in the guide shell, the fan sucks air from the outside of the guide shell to penetrate through the filter screen to enter the inner side of the guide shell, the filter screen can filter solid impurities in the air, and the air enters the inner side of the connecting pipe through the guide shell under the action of the fan, penetrates through the connecting pipe to enter the inner side of the round pipe and is blown to the outside from a hole of the top cover through the round pipe. And air passes through the inner sides of the connecting pipes and the circular pipes to carry and blow out heat to the outside, so that the heat dissipation effect is realized, and the service life of the lithium ion battery pack is prolonged."

[Wuhan Hengdian Gaoce Electric Announces a Patent Granted for Portable Lithium Battery Equalizer](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Wuhan Hengdian Gaoce Electric announced that State Intellectual Property Office of China has issued a patent for portable lithium battery equalizer. Lei Huifeng developed the invention.

The patent application number is CN20232148183U 20230505. The patent publication number is CN219960163 (U). International Patent Classification codes are B65H75/38 and H02J7/00. Cooperative Patent Classification code is Y02E60/10 (EP).

The abstract released by State Intellectual Property Office of China states, "The utility model provides a portable lithium battery equalization instrument. Comprising an equipment body and a connecting frame, and fixing shafts are fixed to the left side and the right side of the equipment body. According to the portable lithium battery balancing instrument provided by the utility model, the connecting frame is rotatably fixed at the front side of the balancing instrument and is matched and fixed with the clamping block through the spring, so that when the connecting frame is horizontally placed, the connecting frame can be lifted and carried as a handle of the balancing instrument; when the connecting frame is obliquely placed, the connecting frame can be used as a support to lift the front side of the balancing instrument, a worker can conveniently observe a display screen on the front side of the balancing instrument through the arrangement, a wire is wound through the connecting disc, the wire can be prevented from being exposed to be wound and knotted through the arrangement, on one hand, the portability of the balancing instrument is improved, and on the other hand, the working efficiency is improved. And on the other hand, the use convenience of the balancing instrument is improved, the grip is rotationally fixed to the upper side of the connecting disc, and through the arrangement, the grip can be folded and stored when the balancing instrument is carried, so that the balancing instrument is more convenient to use."

[Univ China Mining & Tech Obtains Patent for Pneumatic Stirring and Discharging Device for Waste Lithium Ion Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Univ China Mining & Tech has obtained a patent for pneumatic stirring and discharging device for waste lithium ion battery. This invention was developed by Wang Haifeng, Zhang Zhenxing, Wang Jiawei, Liu Yanqing, Ma Xiaoxue and Hao Juan.

The patent application number is CN202320950765U 20230425. The patent publication number is CN219960159 (U). International Patent Classification codes are H01M10/54 and H02J7/00.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a pneumatic stirring and discharging device for waste lithium ion batteries, and belongs to the field of battery recycling. Comprising a discharging box body used for containing waste lithium ion batteries, an inlet and outlet used for feeding and discharging are formed in the top of the discharging box body, a cover plate capable of being opened is arranged on the inlet and outlet, the inlet and outlet are connected with a belt or a spiral feeder during feeding, the discharging box body topples over during discharging, and a sieve used for separating conductive particle media from the batteries is arranged at the inlet and outlet. A plurality of air outlet pipes in different pointing directions are arranged on the inner side of the discharge box body, the air outlet pipes of the discharge box body are connected with an air supply device through pipelines, a large number of conductive particle media which can be fluidized, mixed and stirred by wind power of the air outlet pipes are arranged in the discharge box body, the conductive particle media are in a fluid-like state, and an air outlet for exhausting air is formed in the discharge box body. And a filter screen for preventing the conductive particle medium from leaking is arranged on the air outlet. The device is simple in structure, convenient to use and fast in discharging without water, and the problems of drying and water treatment are avoided."

[Chinese Patent for Solar Storage and Control Device Based on Advantage Superposition of Multiple Types of Lithium Ion Batteries Issued to Lanzun Tech Shandong](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Chinese Patent for solar storage and control device based on advantage superposition of multiple types of lithium ion batteries has been issued to Lanzun Tech Shandong. This invention was developed by Cai Guangyin and Cai Chengpeng.

The patent application number is CN202321464139U 20230609. The patent publication number is CN219960184 (U). International Patent Classification codes are H02J7/00, H02J7/35, H02J7/36 and H02J9/06.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a solar storage and control device based on advantage superposition of multi-type lithium ion batteries, which comprises a solar power generation panel, a main and auxiliary power supply switching module connected with the solar power generation panel and positioned at an energy transmission end, and a load powered by the main and auxiliary power supply switching module, three branches are connected in parallel between the solar power generation panel and the main and auxiliary power supply switching module, and the three branches comprise a solar direct supply branch, a main power supply branch and an auxiliary power supply branch; the utility model has the advantages of quick charging and energy storage, long cycle service life, large temperature adaptation range, low cost of the energy storage device, and direct supply of the solar power generation panel."

[Hebei Lingdian New Energy Tech Awarded Patent for Lithium Battery Cap Covering Machine](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Hebei Lingdian New Energy Tech has been awarded a patent for lithium battery cap covering machine. This invention was developed by Wang Hui, Wang Yang, Qiao Yanhong, Wang Huaiyue, Ding Keqiang and Lu Pengfei.

The patent application number is CN202321664310U 20230628. The patent publication number is CN219959188 (U). International Patent Classification codes are H01M10/058 and H01M50/147.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a lithium battery cap covering machine, and relates to the technical field of lithium battery processing. The lithium battery cap covering machine comprises a base, a support is fixedly arranged on one side of the surface of the top of the base, a template is arranged between the support and the base, one end of the template is connected with the inner wall of the support, and a containing groove used for containing a lithium battery cap is formed in the surface of the top of the template. According to the lithium battery cap covering machine, the lithium battery cap in the inner cavity of the placing groove can be ejected out by the ejection cap through the ejection mechanism, so that a worker can conveniently take out the covered lithium battery cap, and the lithium battery cap covering machine has the advantages that the lithium battery cap covering machine is simple in structure, convenient to operate and high in practicability. And through the maintenance hole, a worker can conveniently disassemble and assemble the screw, and then the top cap can be replaced and maintained."

[Anhui Fangzheng New Energy Tech Awarded New Patent for Lithium Battery Top Cover Assembly Convenient to Seal and Assemble](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Anhui Fangzheng New Energy Tech has announced issuance of a new patent for lithium battery top cover assembly convenient to seal and assemble. Tang Yilei, Chen Shaoxiang and Liang Jujiang developed the invention.

The patent application number is CN202321517780U 20230614. The patent publication number is CN219959212 (U). International Patent Classification codes are H01M50/15 and H01M50/188.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a lithium battery top cover component convenient to seal and assemble, which relates to the technical field of lithium battery accessories and comprises a top cover piece, a lower plastic component, two poles and two locking rings, the lower plastic component is welded on the top cover piece, pole holes are arranged at two ends of the top cover piece, and the two locking rings are arranged in the pole holes. The lower plastic part assembly is provided with two through holes, the two through holes are arranged in one-to-one correspondence with the two pole holes respectively, and the through holes are communicated with the pole holes; the two pole columns are arranged in one-to-one correspondence with the two through holes and the two pole column holes respectively, the two pole column holes penetrate through the corresponding through holes and the pole column holes respectively, and sealing rings are arranged on the two pole columns in a sleeving manner. The surface roughness Ra of the sealing ring ranges from 2.0 to 4.0, compared with the prior art, in the pressing process of the sealing ring and the top cover piece, the adhesive force of the contact face of the sealing ring and the top cover piece is large, the sealing effect is good, and then the use reliability is improved."

[Henan Yicheng Sunshine New Energy Got Patent Approval for Transfer Tank for Lithium Battery Slurry](#)

Battery Patent | Fri, 12 Jul 2024

Beijing, July 13 -- Henan Yicheng Sunshine New Energy today announced that it has been granted patent approval for transfer tank for lithium battery slurry by State Intellectual Property Office of China. Zhang Liang, Zhao Chong and Zhou Hao developed the invention.

The patent application number is CN202321163964U 20230515. The patent publication number is CN219964025 (U). International Patent Classification codes are B01D19/00, B01D19/02, B01F27/112, B01F27/192 and B01F27/90.

The abstract released by State Intellectual Property Office of China states, "The utility model discloses a lithium battery slurry transfer tank which comprises a tank body, an end cover is arranged at the top end of the tank body, a stirring device is arranged in the tank body, and the stirring device is rotatably connected to the center position of the end cover, and is characterized in that the stirring device comprises a rotating shaft, an upper stirring paddle and a lower stirring paddle, the upper stirring paddle and the lower stirring paddle are fixed to the positions, close to the middle and the bottom end, of the rotating shaft, the top end of the rotating shaft is rotationally connected to the end cover, a slurry baffle is arranged between the upper stirring paddle and the lower stirring paddle, and the slurry baffle is fixedly connected to the inner side wall of the tank body and rotationally connected with the rotating shaft; a through hole is formed in the slurry baffle, and a feeding pipe is arranged on the end cover; the device is simple and reasonable in structure, can greatly reduce bubbles in slurry, and is very convenient to use."

[Anhui Tianketai New Energy Secures Chinese Patent for Lithium Battery Cathode Homogenizing Device](#)

Battery Patent | Fri, 12 Jul 2024

Beijing, July 13 -- Anhui Tianketai New Energy has been granted patent for lithium battery cathode homogenizing device by State Intellectual Property Office of China. This invention was developed by Yang Minqiang, Kuang Hao and Ren Zhiguo.

The patent application number is CN202321675995U 20230628. The patent publication number is CN219964640 (U). International Patent Classification codes are B01F27/90, B01F33/83 and B01F35/12.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a lithium battery cathode homogenizing device which comprises a homogenizing cylinder, and an inner homogenizing mesh cylinder is fixedly connected in the homogenizing cylinder; an outer homogenate cavity is formed between the outer side wall of the inner homogenate mesh cylinder and the inner side wall of the homogenate cylinder; the device further comprises a homogenizing and stirring mechanism, and the homogenizing and stirring mechanism comprises a broom-shaped homogenizing plate component located in the inner homogenizing net cylinder and an outer homogenizing refining component located in the outer homogenizing cavity. The homogenizing and stirring mechanism further comprises a driving motor for driving the broom-shaped homogenizing paddle plate component and the outer homogenizing paddle refining component to rotate; the broom-shaped uniform paddle material plate component comprises a plurality of bent broom-shaped plates, a connecting frame is fixedly connected between the upper ends of the broom-shaped plates, and the driving motor is fixedly assembled on the connecting frame. According to the device, the broom-shaped homogenate material plate component located in the inner homogenate net cylinder and the outer

homogenate refining component located in the outer homogenate cavity are adopted to realize separate blending and refining of the slurry in the slurry processing process, and the stirring and homogenizing effects of the slurry are improved."

[Chinese Patent Grant Awarded for Lifting Type Lithium Battery Cell Slurry Stirring Device](#)

Battery Patent | Fri, 12 Jul 2024

Beijing, July 13 -- Jिंगgangshan Jingshan New Energy has received a patent on lifting type lithium battery cell slurry stirring device. This invention was developed by He Minghai, Hu Bingtao and Xu Xiaojuan.

The patent application number is CN202320676088U 20230330. The patent publication number is CN219964693 (U). International Patent Classification codes are B01F31/441, B01F35/30, B01F35/33, B01F35/40 and B01F35/45.

According to the abstract released by the State Intellectual Property Office of China: "The utility model discloses a lifting type lithium battery cell slurry stirring device which comprises a shell, a sealing plate and an adjusting and stirring mechanism, the sealing plate is arranged at the top of the shell, the adjusting and stirring mechanism is arranged at the top of the sealing plate and comprises a fixed shell, the fixed shell is installed at the top of the sealing plate, and the sealing plate is arranged at the top of the shell. Servo motors are installed on the left side and the right side of the back face of the fixing shell correspondingly, the front ends of output shafts of the servo motors penetrate through the fixing shell and extend into the fixing shell, and rotating protruding blocks are installed on the surfaces of the output shafts of the servo motors. Through mutual cooperation of the fixed shell, the servo motor, the rotating convex block, the movable plate, a fixed rod, an elastic piece, a fixed block, a stirring motor, a fixed shaft, a stirring rod and a rotating rod, the stirring rod can repeatedly rotate and move up and down, meanwhile, the stirring effect is guaranteed, slurry at the bottom can be fully and uniformly stirred, and the stirring efficiency is improved. Therefore, the stirring structure can do up-and-down lifting and rotating motion at a constant speed."

[Jिंगgangshan Jingshan New Energy Granted Patent for Lithium Battery Mixing and Feeding Device](#)

Battery Patent | Fri, 12 Jul 2024

Beijing, July 13 -- Jिंगgangshan Jingshan New Energy has been granted a patent for lithium battery mixing and feeding device. Hu Bingtao, Lu Hua and Zhang Wentao developed the invention.

The patent application number is CN202320792895U 20230411. The patent publication number is CN219964738 (U). International Patent Classification codes are B01F35/10 and B01F35/45.

The abstract released by State Intellectual Property Office of China states, "The lithium battery mixing and feeding device comprises a mixing barrel, a cover plate, a motor, a rotating shaft, blades and a lifting assembly, the cover plate is movably connected to the top of the mixing barrel, the motor is fixedly connected to the center of the top of the cover plate, the rotating shaft is fixedly connected to an output shaft of the motor, and the bottom of the rotating shaft penetrates through the cover plate and extends into the mixing barrel; blades are fixedly connected to the surface of the rotating shaft, and the lifting assembly is arranged on the mixing cylinder. When the blades need to be cleaned, a user only needs to rotate the handle in the forward direction to drive the screw rod to rotate, so that the threaded block moves upwards on the screw rod, the cover plate, the motor and the blades are driven to move upwards, and the blades

rise to the outside of the mixing barrel, so that the blades are conveniently cleaned or maintained by the user; and great convenience is provided for a user; and the practicability of the device is greatly improved."

Chinese Patent for Sealing Protective Film Structure of Automobile Lithium Battery Box Issued to Shenzhen Lianxiangtong Tech

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- Chinese Patent for sealing protective film structure of automobile lithium battery box has been issued to Shenzhen Lianxiangtong Tech. This invention was developed by Tang Xuewen.

The patent application number is CN202320225628U 20230202. The patent publication number is CN219959227 (U). International Patent Classification codes are H01M50/24, H01M50/244, H01M50/249, H01M50/262, H01M50/271 and H01M50/289. Cooperative Patent Classification code is Y02E60/10 (EP).

According to the abstract released by the State Intellectual Property Office of China: "The utility model relates to the technical field of lithium battery sealing protective films, in particular to a sealing protective film structure of an automobile lithium battery box. Comprising a top cover and a box body, a sealing group used for sealing a battery in the box body is arranged between the top cover and the box body, the sealing group is composed of a first sealing film and a second sealing film and used for preventing external moisture from permeating into the box body, a plurality of clamping grooves are formed in the periphery of the box body, a plurality of grids are arranged in the box body, the grids are separated by partition plates, and the partition plates are arranged in the box body. A plurality of battery grids are formed between the grid and the partition plate, batteries are placed in the battery grids, then a second sealing film in the sealing group is attached to the upper surface of the box body, meanwhile, a first sealing film is attached to the upper end of the second sealing film, finally, a top cover is covered, a clamping pin penetrates through a clamping groove, a spring is compressed by a fixing ring at the upper end of the clamping groove, and then the batteries are placed in the battery grids. Bolts are inserted into the square holes and the clamping holes to fix the clamping pins, so that the top cover and the box body are sealed, external moisture is prevented from easily permeating into the box body to damage the lithium battery, and the lithium battery is protected."

Jiangsu Julian Reducer Gets Patent for Lithium Battery Stirrer Shell

Battery Patent | Fri, 12 Jul 2024

Beijing, July 13 -- Jiangsu Julian Reducer has received a patent for lithium battery stirrer shell. This invention was developed by Yang Bo, Ju Bin and Xu Huazhong.

The patent application number is CN202321502258U 20230613. The patent publication number is CN219964760 (U). International Patent Classification codes are B01F27/90, B01F35/00, B01F35/32 and B01F35/50.

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a shell of a lithium battery stirrer, which belongs to the field of lithium battery stirrers and comprises a fixed seat, a shell fixedly mounted on the fixed seat and a stirring rod rotatably mounted at the bottom of the fixed seat, rotating shafts are fixedly mounted on two sides of the shell, and a grip is rotatably mounted on the shell through the rotating shafts. A positioning block is fixedly connected to one side of the grip, a groove is formed in the positioning block, a positioning rod is inserted into the groove, a limiting ring is fixedly connected to the positioning rod, a spring is fixedly connected to the position, located on one side of the limiting ring, in the groove, and a plurality of positioning

grooves are formed in the two sides of the shell. The multiple positioning grooves are annularly distributed with the rotating shaft as the circle center. And through the arrangement of a rotating shaft, a positioning block, a positioning rod, a pull ring, a limiting ring, a spring and a positioning groove, the angle of the grip can be adjusted, an operator can change postures for operation, fatigue is relieved, and the operation space is increased."

[Battelle Memorial Inst and Albemarle Corp Granted United States Patent for Cost Effective Synthesis of Oxide Materials for Lithium Ion Batteries](#)

Battery Patent | Sat, 13 Jul 2024

Alexandria, July 13 -- Battelle Memorial Inst and Albemarle Corp announced that the U.S. Patent and Trademark Office has granted another patent to cost effective synthesis of oxide materials for lithium ion batteries. This invention was developed by Xiao Jie, Yi Ran, Bi Yujing, Rijssenbeek Job T, Hao Xiaoguang, Venkatachalam Subramanian and Luo Liu.

The patent application number is US202117523734 20211110. The patent publication number is US12030789 (B2). International Patent Classification codes are C01G53/00, H01B1/08, H01M4/505, H01M4/525 and H01M4/02. Cooperative Patent Classification codes are C01G53/006 (EP), C01G53/50 (EP, US), H01B1/08 (US), H01M4/131 (EP), H01M4/505 (US), H01M4/525 (EP, US), C01P2002/72 (EP, US), C01P2002/77 (EP), C01P2004/03 (EP, US), C01P2004/04 (EP, US), C01P2006/40 (US), H01M10/0525 (EP), H01M2004/021 (US), H01M2004/028 (US) and Y02E60/10 (EP).

[Hefei Guoxuan High Tech Power Energy Receives New Patent for Damping and Heat-Insulating Protection Device for Lithium Battery](#)

Battery Patent | Sat, 13 Jul 2024

Beijing, July 13 -- CN202320956079U 20230424 was issued by the State Intellectual Property Office of China and is titled damping and heat-insulating protection device for lithium battery. This invention was developed by Liu Songhan, Sun Yanfei, Yan Huixiang, Cheng Si, Zhang Guangyu, Rao Chengfei and Zhu Weiwen.

The patent application number is CN202320956079U 20230424. The patent publication number is CN219959233 (U). International Patent Classification codes are H01M10/613, H01M10/6554, H01M50/242 and H01M50/244. Cooperative Patent Classification code is Y02E60/10 (EP).

State Intellectual Property Office of China has released an abstract on the patent. The abstract reads, "The utility model discloses a lithium battery shock absorption and heat insulation protection device which comprises a base and an outer box arranged on the base, an inner box is arranged in the outer box, and a heat dissipation part is arranged on the inner box; a first buffering and damping part is arranged between the end, away from the heat dissipation plate, in the inner box and the inner box, the first buffering and damping part comprises a first buffering spring and a first damping rod, the first buffering spring and the first damping rod are parallel to the length direction of the inner box, and a second buffering and damping part is arranged between the inner box and the base; the shock-absorbing and buffering device in the horizontal direction is arranged in the outer box, and the shock-absorbing and buffering device in the vertical direction is arranged at the bottom of the outer box, so that shock-absorbing and buffering in the horizontal direction and the vertical direction can be provided for the inner box; therefore, the inner box is prevented from shaking."

[United States Patent Grant Awarded for Lizncl4 Derivatives in the Group of Pmn21 as Li Super-Ionic Conductor, Solid Electrolyte, and Coating Layer for Li Metal Battery and Li-Ion Battery](#)

Battery Patent | Sat, 13 Jul 2024

Alexandria, July 13 -- Toyota Motor Engineering & Mfg North America Inc [Us]; Univ of Maryland College Park has received a patent on LiZnCl_4 derivatives in the group of Pmn_{21} as Li super-ionic conductor, solid electrolyte, and coating layer for Li metal battery and Li-ion battery. This invention was developed by Mo Yifei, Liu Yunsheng and Ling Chen.

The patent application number is US202016909645 20200623. The patent publication number is US12034113 (B2). International Patent Classification codes are H01M10/0525, H01M10/0562, H01M4/04, H01M4/485, H01M4/505 and H01M4/64. Cooperative Patent Classification codes are H01M10/0525 (US), H01M10/0561 (EP), H01M10/0562 (EP, US), H01M4/0404 (US), H01M4/485 (US), H01M4/505 (US), H01M4/64 (US), H01M2300/0065 (US) and Y02E60/10 (EP).

According to the abstract released by the U.S. Patent and Trademark Office: "Solid-state lithium ion electrolytes of lithium zinc chloride derivative compounds having a crystal morphology in the Pmn_{21} space group are provided as materials for conducting lithium ions. An activation energy of the lithium aluminum chloride derivative compounds is from 0.15 to 0.40 eV and conductivities are from 0.01 to 15 mS/cm at 300 K. Compounds of specific formulae are provided and methods to alter the materials with inclusion of aliovalent ions shown. Lithium batteries containing the composite lithium ion electrolytes and electrodes containing the lithium aluminum chloride derivative compounds are also provided."

[**Cathodes for Solid-State Lithium Sulfur Batteries and Methods of Manufacturing Thereof Patent Assigned to Corning Incorporated and Shanghai Institute of Ceramics Chinese Academy of Sciences**](#)

Battery Patent | Sat, 13 Jul 2024

Alexandria, July 13 -- Today the U.S. Patent and Trademark Office published a granted patent for Corning Incorporated and Shanghai Institute of Ceramics Chinese Academy of Sciences. This invention was developed by Badding Michael Edward, Jin Jun, Lu Yang, Song Zhen, Wen Zhaoyin and Xiu Tongping.

The patent application number is US201917255274 20190620. The patent publication number is US12034152 (B2). International Patent Classification codes are H01M10/052, H01M4/04, H01M4/13, H01M4/139, H01M4/36, H01M4/38, H01M4/62 and H01M4/02. Cooperative Patent Classification codes are H01M10/052 (EP, CN, US), H01M10/0565 (CN), H01M10/0585 (EP), H01M4/0404 (EP, CN, US), H01M4/13 (CN, US), H01M4/136 (EP), H01M4/139 (CN, US), H01M4/1397 (EP), H01M4/366 (EP, US), H01M4/38 (EP, CN), H01M4/382 (US), H01M4/622 (EP), H01M4/623 (EP), H01M4/624 (EP, CN, US), H01M4/625 (EP), H01M2004/021 (EP, CN, US), H01M2004/028 (EP) and Y02E60/10 (EP).

[**Industrial Tech Research Institute Lands Key Patent for Lithium Battery Structure**](#)

Battery Patent | Sat, 13 Jul 2024

Alexandria, July 13 -- Industrial Tech Research Institute has secured patent for lithium battery structure. This invention was developed by Chen Li-Chun, Wang Tsung-Hsiung and Chen Chen-Chung.

The patent application number is US202017096679 20201112. The patent publication number is US12034158 (B2). International Patent Classification codes are H01M4/46 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP, CN), H01M10/058 (CN), H01M10/0585 (EP), H01M4/463 (US), H01M4/623 (US), H01M4/624 (EP), H01M4/625 (EP, US), H01M4/661 (EP), H01M2004/021 (EP), Y02E60/10 (EP) and Y02P70/50 (EP).

POSCO Holdings Inc and Res Institute Ind Science & Tech File Korean Intellectual Property Office Patent Application for Cathode Active Material and Lithium Secondary Battery Comprising Same

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- POSCO Holdings Inc and Res Institute Ind Science & Tech have filed a patent application with the Korean Intellectual Property Office for cathode active material and lithium secondary battery comprising same. Nam Sang Cheol, Lee Sang Hyuk, Choi Kwon Young and Song Jung Hoon developed the invention.

The patent application number is KR20227024623 20201218. The patent publication number is KR20220118497 (A). International Patent Classification codes are H01M10/052, H01M4/02, H01M4/36, H01M4/505 and H01M4/525. Cooperative Patent Classification codes are C01G53/006 (EP), C01G53/50 (EP), H01M10/052 (EP, KR, US), H01M4/364 (KR), H01M4/505 (EP, KR, US), H01M4/525 (EP, KR, US), C01P2002/20 (EP), C01P2002/52 (EP), C01P2002/60 (EP), C01P2002/74 (EP), C01P2002/77 (EP), C01P2002/88 (EP), C01P2004/03 (EP), C01P2004/45 (EP), C01P2004/53 (EP), C01P2004/61 (EP), C01P2004/62 (EP), C01P2006/40 (EP), H01M2004/021 (US), H01M2004/028 (KR, US) and Y02E60/10 (EP).

Korean Intellectual Property Office has released the abstract. According to the abstract, "The present exemplary embodiments relate to a positive electrode active material and a lithium secondary battery including the same. The positive active material for a lithium secondary battery according to an exemplary embodiment includes lithium metal oxide particles including lithium, nickel, cobalt, manganese and doping elements, and includes a first domain and a second domain inside the lithium metal oxide particles."

Samsung SDI Files for Korean Patent titled Composition for Coating Separator Method for Preparing Separator Separator and Lithium Battery Comprising the Separator

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has filed patent application for composition for coating separator method for preparing separator separator and lithium battery comprising the separator at Korean Intellectual Property Office. This invention was developed by Kim Ha Na, Lee Byung Min and Cho Min Ho.

The patent application number is KR20210028899 20210304. The patent publication number is KR20220125022 (A). International Patent Classification codes are H01M10/052, H01M50/403, H01M50/446, H01M50/451 and H01M50/489. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M50/403 (EP, KR), H01M50/446 (EP, KR), H01M50/451 (EP, KR), H01M50/489 (EP, KR), Y02E60/10 (KR) and Y02P70/50 (KR).

According to the abstract released by the Korean Intellectual Property Office: "Proposed are a composition for coating a separator, a method for manufacturing a separator by using same, a separator, and a lithium battery employing same. The composition for coating a separator comprises: a polyacrylamide-based copolymer including a crosslinking reactive group; inorganic particles; and water, wherein the crosslinking reactive group includes at least two functional groups that are crosslinkable with each other. The composition for coating a separator can be used as a one-part type without a crosslinking agent, and a separator having excellent high temperature resistance can be provided by using the composition."

[BTR New Mat Group Co Ltd and Dingyuan New Energy Tech File a New Patent Application for Multi-Element Composite Negative Electrode Material and Preparation Method Therefor, Negative Electrode Material of Lithium-Ion Battery, and Lithium-Ion Battery](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has applied for Korean Intellectual Property Office for multi-element composite negative electrode material and preparation method therefor, negative electrode material of lithium-ion battery, and lithium-ion battery. Che Zongzhou, He Peng, Ren Jianguo and He Xueqin developed the invention.

The patent application number is KR20227026610 20210407. The patent publication number is KR20220123445 (A). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/36, H01M4/38, H01M4/485, H01M4/583 and H01M4/62. Cooperative Patent Classification codes are H01M10/0525 (CN, KR), H01M4/0402 (US), H01M4/0471 (US), H01M4/362 (CN, KR), H01M4/364 (US), H01M4/366 (CN, KR, US), H01M4/386 (CN, KR), H01M4/485 (CN, KR, US), H01M4/583 (CN, KR), H01M4/587 (US), H01M4/625 (CN, KR), H01M10/0525 (US), H01M2004/021 (US), H01M2004/027 (CN, KR, US) and Y02E60/10 (EP).

Korean Intellectual Property Office has released the abstract. According to the abstract, "The present disclosure provides a multi-component composite anode material, a method for preparing the same, a lithium-ion battery anode material, and a lithium-ion battery. The multi-component composite anode material includes a core and a shell covering surface of the core; the core includes a graphite substrate and an embedding component embedded in the graphite substrate. The embedding component include nano silicon, lithium titanate, and a first non-graphitic carbon material. The shell includes a second non-graphitic carbon material. The method includes: calcining a first precursor formed by a titanium source, nano-silicon, a lithium source and graphite to prepare a second precursor containing lithium titanate; and carbon-coating the second precursor and a carbon source. The multi-component composite anode material has high specific capacity, high initial coulombic efficiency, ultra-low volume expansion, excellent cycle performance and excellent rate performance."

[ARI Energy Huizhou Files a New Patent Application for Lithium Battery Supporting Series-Parallel](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has applied for U.S. Patent and Trademark Office for lithium battery supporting series-parallel. Zheng Yingqiang developed the invention.

The patent application number is US202318512669 20231117. The patent publication number is US2024222983 (A1). International Patent Classification codes are H01M10/44 and H02J7/00. Cooperative Patent Classification codes are H01M10/441 (US), H02J7/00036 (CN), H02J7/00041 (US), H02J7/0013 (US), H02J7/0024 (CN), H02J7/0063 (US), H02J7/0068 (CN, US), H01M2010/4271 (US) and Y02E60/10 (EP).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "Disclosed is a lithium battery supporting series-parallel. The lithium battery includes: a battery cell assembly, a carrier communication assembly, a wake-up detection assembly, a charge-discharge control detection assembly, a battery management assembly and a battery output on/off execution assembly. The present application assigns a high-voltage group attribute to the battery at the highest voltage in series in a series-parallel battery system, and assigns a low-voltage group attribute to all batteries at other voltages other than the highest voltage in series. The battery management assembly controls the

output on/off execution assembly of the battery based on its attribute, making it in different on, current-limiting on or off states. The battery management assembly controls the wake-up detection assembly to detect various wake-up signals according to the battery attributes, so as to realize the use of multiple lithium batteries in any series and parallel connection."

[ARI Energy Huizhou Applies for Patent on Series and Parallel Battery System Supporting Zero-Voltage Charging, Lithium Battery, and Charging Method](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- ARI Energy Huizhou has applied for United States patent for series and parallel battery system supporting zero-voltage charging, lithium battery, and charging method. Zheng Yingqiang developed it.

The patent application number is US202318495082 20231026. The patent publication number is US2024222982 (A1). International Patent Classification code is H02J7/00. Cooperative Patent Classification codes are G01R31/385 (CN), H01M10/446 (CN), H02J7/0013 (US), H02J7/0047 (US), H02J7/0069 (CN), H02J7/007 (CN), H02J7/007182 (CN, US) and Y02E60/10 (EP).

The abstract of the patent published by the U.S. Patent and Trademark Office states: "Disclosed are a series and parallel battery system supporting zero-voltage charging, a lithium battery, and a charging method. The lithium battery for the series and parallel battery system supporting zero-voltage charging includes: a battery cell assembly, a main charge and discharge switch circuit and a trickle charge switch circuit; the main charge and discharge switch circuit is provided in series between the battery cell assembly and a power supply end."

[Toyota Motor Seeks Patent for Method of Producing Negative Electrode, Negative Electrode, and Lithium-Ion Secondary Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Toyota Motor has sought patent for method of producing negative electrode, negative electrode, and lithium-ion secondary battery. This invention was developed by Sugihara Atsushi.

The patent application number is US202418601508 20240311. The patent publication number is US2024222638 (A1). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/131, H01M4/1391, H01M4/485 and H01M4/62. Cooperative Patent Classification codes are H01M10/0525 (EP, KR, US), H01M10/4235 (KR), H01M4/131 (EP, KR, US), H01M4/133 (KR), H01M4/1391 (EP, KR, US), H01M4/1393 (KR), H01M4/364 (KR), H01M4/485 (KR, US), H01M4/587 (KR), H01M4/625 (EP, US), H01M2004/027 (US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "A method of producing a negative electrode includes at least the following (A) to (C): (A) mixing powder consisting of lithium titanate oxide particles, a binder, and a solvent to prepare a particle-dispersed liquid; (B) granulating powder consisting of graphite-based particles by using the particle-dispersed liquid to prepare wet granules; and (C) forming the wet granules into a negative electrode composite material layer to produce a negative electrode. The negative electrode composite material layer is formed so as to include the lithium titanate oxide particles in an amount not lower than 2 mass % and not higher than 15 mass % of the total amount of the graphite-based particles and the lithium titanate oxide particles."

[LG Energy Solution Seeks Patent for Negative Electrode Composition, Negative Electrode for Lithium Secondary Battery Including Same, Lithium Secondary Battery Including Negative Electrode, and Method for Preparing Negative Electrode Composition](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Energy Solution has sought patent for negative electrode composition, negative electrode for lithium secondary battery including same, lithium secondary battery including negative electrode, and method for preparing negative electrode composition. This invention was developed by Kim Young Jae and Lee Jaewook.

The patent application number is US202218563280 20221007. The patent publication number is US2024222636 (A1). International Patent Classification codes are C01B33/113, H01M4/134, H01M4/38, H01M4/62 and H01M4/02. Cooperative Patent Classification codes are C01B33/113 (US), H01M10/052 (EP), H01M10/0525 (EP, KR), H01M4/02 (EP), H01M4/131 (EP, KR), H01M4/134 (EP, KR, US), H01M4/1391 (EP, KR), H01M4/1395 (EP, KR), H01M4/36 (EP), H01M4/364 (EP), H01M4/38 (EP), H01M4/386 (EP, KR, US), H01M4/48 (EP), H01M4/483 (EP, KR), H01M4/62 (EP), H01M4/624 (EP, KR), H01M4/625 (EP, KR, US), C01P2006/40 (US), H01M2004/021 (US), H01M2004/027 (EP, KR, US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "A negative electrode composition, a negative electrode for a lithium secondary battery, including the same, a lithium secondary battery including the negative electrode, and a method for preparing a negative electrode composition are disclosed. The negative electrode composition including a silicon-containing active material; a negative electrode conductive material; and a negative electrode binder. The negative electrode conductive material comprises a dot-shaped conductive material and a planar conductive material. The planar conductive material has a BET specific surface area of 100.0 m²/g or more. The silicon-containing active material is present in an amount of 60 parts by weight or more based on 100 parts by weight of the negative electrode composition."

[U.S. Patent and Trademark Office Receives LG Energy Solution Patent Application for Negative Electrode Pre-Dispersion Solution, Negative Electrode Composition Including Same, Negative Electrode for Lithium Secondary Battery Including Negative Electrode Composition, Lithium Secondary Battery Including Negative Electrode, and Method for Producing Negative Electrode Composition](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has received LG Energy Solution patent application for negative electrode pre-dispersion solution, negative electrode composition including same, negative electrode for lithium secondary battery including negative electrode composition, lithium secondary battery including negative electrode, and method for producing negative electrode composition. Kim Young Jae and Lee Jaewook developed the invention.

The patent application number is US202218563126 20220930. The patent publication number is US2024222632 (A1). International Patent Classification codes are H01M4/02, H01M4/134, H01M4/38 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M10/0525 (EP), H01M4/02 (EP), H01M4/13 (EP), H01M4/131 (EP, KR), H01M4/134 (EP, KR, US), H01M4/139 (EP), H01M4/1391 (EP, KR), H01M4/1395 (EP, KR), H01M4/38 (EP), H01M4/386 (EP, KR, US), H01M4/48 (EP), H01M4/483 (EP, KR), H01M4/62 (EP, KR, US), H01M4/622 (EP), H01M4/625 (EP, KR), H01M2004/021 (EP, KR, US), H01M2004/027 (EP, KR, US) and Y02E60/10 (EP).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "A negative electrode pre-dispersion, a negative electrode composition including the same, a negative electrode for a lithium secondary battery, including the negative electrode composition, a lithium secondary battery including the negative electrode, and a method for preparing a negative electrode composition are disclosed. The negative electrode pre-dispersion includes a pre-dispersing material comprising a particulate conductive material having a functional group content ranging from 0.01% or more and less than 0.05% and a water-containing dispersing agent; and a dispersion medium, wherein a solid content of the pre-dispersing material ranges from 10% to 30% based on the negative electrode pre-dispersion."

[LG Energy Solution Submits Patent Application for Lithium Secondary Battery Including Heat Dissipation Current Collector](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Energy Solution has submitted a patent application for lithium secondary battery including heat dissipation current collector. Paeng Ki Hoon and Na Seon Hyeong developed the invention.

The patent application number is US202418401935 20240102. The patent publication number is US2024222643 (A1). International Patent Classification codes are H01M10/052, H01M10/653 and H01M4/66. Cooperative Patent Classification codes are H01M10/052 (US), H01M10/653 (US), H01M4/661 (US), H01M4/667 (US) and H01M4/668 (US).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "A lithium secondary battery includes an electrode assembly and a battery case configured to accommodate the electrode assembly. The electrode assembly includes a plurality of positive electrodes, a plurality of negative electrodes, and a plurality of separators, which are sequentially stacked, and at least one of the plurality of positive electrodes and the plurality of negative electrodes includes a heat dissipation current collector and an electrode active material layer formed on at least one surface of the heat dissipation current collector. The heat dissipation current collector includes a heat dissipation layer, a polymer layer disposed on the heat dissipation layer, and a metal layer disposed on the polymer layer, and the heat dissipation layer of the heat dissipation current collector includes a passage extending to the outside of the battery case and configured to dissipate heat inside the battery."

[SK On Files U.S. Patent and Trademark Office Patent Application for Lithium Metal Anode, Manufacturing Method Thereof, and Lithium Metal Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- SK On has filed a patent application with the U.S. Patent and Trademark Office for lithium metal anode, manufacturing method thereof, and lithium metal battery. Park Seong Jin and Yoon Na Eun developed the invention.

The patent application number is US202318390401 20231220. The patent publication number is US2024222639 (A1). International Patent Classification codes are H01M10/0562, H01M4/04, H01M4/134, H01M4/1395, H01M4/38 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP), H01M10/0562 (EP, US), H01M4/0402 (EP), H01M4/0409 (US), H01M4/0435 (EP), H01M4/134 (EP, US), H01M4/1395 (EP, US), H01M4/366 (EP), H01M4/382 (EP, US), H01M4/628 (US), H01M2004/027 (US), H01M2300/008 (US) and Y02E60/10 (EP).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "A lithium metal anode and a method of manufacturing a lithium metal anode are disclosed. In an embodiment, an anode includes a lithium metal and a protective film formed on one or both surfaces of the lithium metal and including a lithium salt and a lithium-metal alloy. In an embodiment, a method of manufacturing a lithium metal anode includes forming a protective film by bringing one or both surfaces of a lithium metal into contact with a perovskite thin film."

[U.S. Patent and Trademark Office Releases Hyundai Motor Co Ltd \[Kr\]; Kia Corp \[Kr\]; Iucf Hyu Erica Campus Patent Application For Lithium Metal Halide-Based Solid Electrolyte for All-Solid-State Battery Having New Crystal Structure](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office announced the filing of patent application by Hyundai Motor Co Ltd [Kr]; Kia Corp [Kr]; Iucf Hyu Erica Campus for lithium metal halide-based solid electrolyte for all-solid-state battery having new crystal structure. The invention was developed by Jang Yong Jun, Choi Seong Hyeon, Choi Sun Ho, Kim Yong Gu, Cho Sung Man, Lee Sang Uck, Jun Byeong Sun and Kim Ji Hoon.

The patent application number is US202318237321 20230823. The patent publication number is US2024222692 (A1). International Patent Classification codes are C01F17/36, H01M10/0525 and H01M10/0562. Cooperative Patent Classification codes are C01F17/36 (US), H01M10/0525 (US), H01M10/0562 (US), C01P2002/76 (US), C01P2006/40 (US), H01M2220/20 (US) and H01M2300/008 (US).

The abstract issued by U.S. Patent and Trademark Office explains, "Disclosed is a lithium metal halide-based solid electrolyte having a novel crystal structure and excellent lithium ion conductivity."

[Tesla Inc Files a New Patent Application for Battery Systems Based on Lithium Difluorophosphate](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has applied for U.S. Patent and Trademark Office for battery systems based on lithium difluorophosphate. Ma Lin, Ma Xiaowei, Glazier Stephen Laurence, Li Jing and Dahn Jeffery R developed the invention.

The patent application number is US202418605202 20240314. The patent publication number is US2024222689 (A1). International Patent Classification codes are H01M10/0525, H01M10/0567, H01M10/0569, H01M4/131, H01M4/36, H01M4/505 and H01M4/525. Cooperative Patent Classification codes are H01M10/0525 (US), H01M10/0567 (US), H01M10/0569 (US), H01M4/131 (US), H01M4/366 (US), H01M4/505 (US), H01M4/525 (US) and H01M2300/0037 (US).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "A nonaqueous electrolyte for a lithium ion battery includes a lithium salt, a first nonaqueous solvent, and an additive mixture comprising a first operative additive of lithium difluorophosphate and a second operative additive of either fluoro ethylene carbonate or vinylene carbonate. A lithium-ion battery includes a negative electrode, a positive electrode comprising NMC with micrometer-scale grains, a nonaqueous electrolyte having lithium ions dissolved in a first nonaqueous solvent, and an additive mixture having a first operative additive of either fluoro ethylene carbonate or vinylene carbonate and a second

operative additive of either 1,3,2-dioxathiolane-2,2-dioxide, another sulfur-containing additive, or lithium difluorophosphate."

[Honda Motor Submits United States Patent Application for Method for Controlling Lithium Secondary Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Honda Motor has submitted a patent application for method for controlling lithium secondary battery. This invention was developed by Kinoshita Tomohiro, Shimizu Wataru and Hoshikawa Wataru.

The patent application number is US202318393694 20231222. The patent publication number is US2024222688 (A1). International Patent Classification codes are H01M10/0525 and H02J7/00. Cooperative Patent Classification codes are H01M10/0525 (US) and H02J7/007188 (US).

An abstract released by the U.S. Patent and Trademark Office states: "It is an object of the present disclosure to provide a method for controlling a lithium secondary battery capable of more safely eliminating a dendrite deposition state. To achieve the object, the present disclosure provides a method for controlling a lithium secondary battery. The method includes detecting presence or absence of dendrite deposition on a negative electrode of the lithium secondary battery, performing high-rate discharge by a discharge controller for controlling a discharge amount of the lithium secondary battery when the dendrite deposition is detected, and increasing a restraint pressure of the lithium secondary battery by a restraint pressure controller for controlling the restraint pressure of the lithium secondary battery after performing the high-rate discharge."

[LG Chemical Filed New Patent Application for Crosslinked Structure-Containing Polyolefin Porous Support, Crosslinked Structure-Containing Separator for Lithium Secondary Battery Including the Same, Method for Manufacturing the Same, and Lithium Secondary Battery Including the Separator](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Chemical has submitted a patent application for crosslinked structure-containing polyolefin porous support, crosslinked structure-containing separator for lithium secondary battery including the same, method for manufacturing the same, and lithium secondary battery including the separator. This invention was developed by Han Sung-Jae, Lee Joo-Sung and Mun Sung Cik.

The patent application number is US202218289182 20220509. The patent publication number is US2024222710 (A1). International Patent Classification codes are H01M10/052, H01M10/42, H01M50/403, H01M50/417, H01M50/426, H01M50/446 and H01M50/494. Cooperative Patent Classification codes are H01M10/052 (EP, KR, US), H01M10/0525 (EP), H01M10/4235 (US), H01M50/403 (EP, KR, US), H01M50/411 (EP, KR), H01M50/417 (EP, KR, US), H01M50/42 (EP), H01M50/426 (EP, US), H01M50/446 (EP, US), H01M50/449 (EP), H01M50/451 (EP, KR), H01M50/457 (EP), H01M50/489 (EP, KR), H01M50/491 (EP), H01M50/494 (US) and Y02E60/10 (EP).

[Zhangjiagang Guotai Huarong New Chemical Materials Files Patent Application for Non-Aqueous Electrolyte Solution and Lithium Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office announced the filing of patent application by Zhangjiagang Guotai Huarong New Chemical Materials for non-aqueous electrolyte solution and lithium battery. Chen Xiaoqin, Gan Chaolun, Shi Erbo, Zhang Li and Lu Xiaofeng developed it.

The patent application number is US202218555825 20220808. The patent publication number is US2024222705 (A1). International Patent Classification codes are H01M10/052, H01M10/0567 and H01M10/0569. Cooperative Patent Classification codes are H01M10/052 (EP, US), H01M10/0525 (EP), H01M10/0567 (EP, US), H01M10/0568 (EP), H01M10/0569 (EP, US), H01M2300/0025 (EP) and Y02E60/10 (EP).

The abstract of the patent published by the U.S. Patent and Trademark Office states: "A non-aqueous electrolyte solution and a lithium battery, and mainly solves the problems of easy decomposition at high temperature, poor cycle performance at high temperature and poor rate capability of a non-aqueous electrolyte. The synergistic effect generated by the combined use of an additive A and an additive B better solves the problem. The non-aqueous electrolyte solution and the lithium battery using the non-aqueous electrolyte solution have excellent high temperature performance, cycle performance and rate capability."

[Shanghai Makes Energy Storage Tech Files Application to Patent Early Warning Method and System for Dendrite Growth in Lithium Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Shanghai Makes Energy Storage Tech has filed new patent application for early warning method and system for dendrite growth in lithium battery in U.S. Patent and Trademark Office. Gu Danfei, Li Qian, Jiang Mingchen, Chen Siyuan, Wei Liangchang, Yan Xiao and Zhao Enhai developed it.

The patent application number is US202318392122 20231221. The patent publication number is US2024222726 (A1). International Patent Classification codes are H01M10/0525 and H01M10/48. Cooperative Patent Classification codes are H01M10/0525 (US), H01M10/48 (CN, US), H01M2200/00 (US) and Y02E60/10 (EP).

The abstract of the patent published by the U.S. Patent and Trademark Office states: "The invention provides a method and a system for early warning of dendrite growth in a lithium battery. The method includes simulating the lithium battery in real time through an electrochemical model to judge whether the lithium battery generates lithium dendrites; simulating a growth trend of the lithium dendrites when the lithium battery is determined to generate the lithium dendrites; and judging and providing early warning of the dendrite growth in the lithium battery based on the growth trend of the lithium dendrites obtained through simulation. The invention prevents the growth of dendrites of the lithium battery by carrying out early warning and simulation for dendrite growth, thereby protecting the safety of the lithium battery system."

[Shanghai Makes Energy Storage Tech Patent Application: Early Warning Method and System for Dendrite Formation in Lithium Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Shanghai Makes Energy Storage Tech has filed patent application in U.S. Patent and Trademark Office on early warning method and system for dendrite formation in lithium battery. This invention was developed by Gu Danfei, Jiang Mingchen, Li Qian, Chen Siyuan, Wei Liangchang, Yan Xiao and Zhao Enhai.

The patent application number is US202318392051 20231221. The patent publication number is US2024222725 (A1). International Patent Classification codes are H01M10/0525 and H01M10/48. Cooperative Patent Classification codes are H01M10/0525 (US), H01M10/4207 (CN), H01M10/4235 (CN), H01M10/48 (US), H01M10/482 (CN), H01M2200/00 (US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "The invention provides a method and a system for early warning of dendrite formation in a lithium battery. The method includes acquiring real-time operating condition information and electrochemical parameters of the lithium battery; performing a computational simulation based on the real-time operating condition information and the electrochemical parameters through an electrochemical model, and obtaining by analysis a deposition result of the lithium battery; and using the deposition result obtained through electrochemical model simulation, providing early warning for the dendrite formation in the lithium battery. The invention avoids the growth of dendrites of the lithium battery by providing early warning and simulation for dendrite formation, thereby protecting the safety of the lithium battery system."

[Samsung Electronics has Filed Patents for Lithium Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has Published Samsung Electronics patent application for lithium battery. Kim Jusik, Kim Jirae and Lee Junhyeong developed the invention.

The patent application number is US202318339448 20230622. The patent publication number is US2024222735 (A1). International Patent Classification codes are H01M10/615, H01M4/66, H05B3/14 and H05B3/18. Cooperative Patent Classification codes are H01M10/615 (US), H01M4/662 (US), H05B3/145 (US), H05B3/146 (US), H05B3/18 (US), H01M10/0525 (US), H05B2203/003 (US) and H05B2214/04 (US).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "Provided is a lithium battery including a plurality of unit cells; and one or more current collecting members, wherein each of the plurality of unit cells includes a first electrode active material layer, a second electrode active material layer, and an electrolyte layer disposed between the first electrode active material layer and the second electrode active material layer, the one or more current collecting members includes a first current collecting member disposed between a first unit cell and a second unit cell adjacent to each other, the first current collecting member includes a first surface in contact with the first unit cell, a second surface facing the first surface and in contact with the second unit cell, a first current collector, and a heating element disposed between the first surface and the second surface, wherein the heating element is spaced apart from the first unit cell and the second unit cell."

[LG Energy Solution Patent Application: Separator for Lithium Secondary Battery and Method for Manufacturing the Same](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Energy Solution has filed patent application in U.S. Patent and Trademark Office on separator for lithium secondary battery and method for manufacturing the same. This invention was developed by Bae Won-Sik, Lee So-Yeong, Park So-Jung and Jeong So-Mi.

The patent application number is US202318288283 20230227. The patent publication number is US2024222794 (A1). International Patent Classification codes are H01M10/0525, H01M50/403, H01M50/443 and H01M50/451.

Cooperative Patent Classification codes are H01M10/0525 (EP, KR), H01M50/403 (EP, US), H01M50/406 (EP), H01M50/409 (EP), H01M50/411 (EP, KR), H01M50/417 (EP), H01M50/431 (EP, KR), H01M50/443 (EP, US), H01M50/446 (EP, KR), H01M50/449 (EP, KR), H01M50/451 (EP, US), H01M50/457 (EP), H01M50/489 (EP), H01M50/491 (EP, KR), H01M10/0525 (US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "A separator according to the present disclosure includes an organic/inorganic composite porous coating layer on a surface of a porous polymer substrate. The organic/inorganic composite porous coating layer includes a first region comprising a larger amount of inorganic particles and a second region comprising a smaller amount of inorganic particles so that electrolyte wettability is improved by the first region and high adhesion strength with electrode is maintained by the second region."

[Samsung Sdi Files Patent Application for Composition for Coating Separator, Method for Manufacturing Separator by Using Same, Separator, and Lithium Battery Employing Same](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office announced the filing of patent application by Samsung Sdi for composition for coating separator, method for manufacturing separator by using same, separator, and lithium battery employing same. Cho Minho, Lee Byungmin and Kim Hana developed it.

The patent application number is US202218013715 20220513. The patent publication number is US2024222790 (A1). International Patent Classification codes are H01M10/052, H01M50/403, H01M50/446, H01M50/449 and H01M50/491. Cooperative Patent Classification codes are H01M10/052 (EP, KR, US), H01M50/403 (EP, KR, US), H01M50/446 (EP, KR, US), H01M50/449 (US), H01M50/451 (EP, KR), H01M50/491 (US) and Y02E60/10 (EP).

The abstract of the patent published by the U.S. Patent and Trademark Office states: "Provided are a composition for coating a separator, a method of preparing a separator using the same, a separator, and a lithium battery employing the separator. The composition for coating a separator includes a binder including an aqueous cross-linking reactive poly(vinylamide)-based copolymer, a cross-linker, inorganic particles, and water, wherein the poly(vinylamide)-based copolymer includes a repeating unit derived from a vinylamide monomer, and a repeating unit derived from a cross-linking reactive group-containing monomer. The composition for coating a separator may provide a separator having high thermal resistance characteristics."

[LG Chemical Submits Patent Application Titled Method for Manufacturing Crosslinked Structure-Containing Separator for Lithium Secondary Battery, Crosslinked Structure-Containing Separator for Lithium Secondary Battery Obtained Thereby, and Lithium Secondary Battery Including the Same](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Chemical has submitted a patent application for method for manufacturing crosslinked structure-containing separator for lithium secondary battery, crosslinked structure-containing separator for lithium secondary battery obtained thereby, and lithium secondary battery including the same. This invention was developed by Lee Joo-Sung, Mun Sung Cik, Han Sung-Jae, Kim Bong-Tae and Jung Kil-An.

The patent application number is US202218289206 20220509. The patent publication number is US2024222787 (A1). International Patent Classification codes are H01M10/052, H01M50/403, H01M50/417, H01M50/431, H01M50/446,

H01M50/451 and H01M50/491. Cooperative Patent Classification codes are H01M10/052 (EP, KR, US), H01M50/40 (KR), H01M50/403 (EP, KR, US), H01M50/417 (EP, KR, US), H01M50/431 (US), H01M50/446 (US), H01M50/451 (EP, KR, US), H01M50/489 (EP, KR), H01M50/491 (US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "The present disclosure relates to a method for manufacturing a crosslinked structure-containing separator for a lithium secondary battery, including the steps of: preparing a polyolefin porous support including a photoinitiator; and irradiating ultraviolet rays to the polyolefin porous support, wherein the polyolefin porous support has a BET specific surface area of 10-27 m²/g, and the content of the photoinitiator is 0.01-1.0 mg/m² based on the specific surface area of the polyolefin porous support. The present disclosure also relates to a crosslinked structure-containing separator for a lithium secondary battery obtained from the method, and a lithium secondary battery including the crosslinked structure-containing separator for a lithium secondary battery. The polyolefin porous support has a controlled BET specific surface area so that it may be crosslinked even with a small amount of photoinitiator."

[**Korean Intellectual Property Office Receives LG Chemical Patent Application for Anode for Secondary Battery its Preparation Method and Lithium Secondary Battery Comprising the Same**](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has received LG Chemical patent application for anode for secondary battery its preparation method and lithium secondary battery comprising the same. Choi Hyunwoo, Oh Sung Joon, Kim Youngsuk, Lee Jeongkyu, Song Inyoung and Choe Yeonji developed the invention.

The patent application number is KR20210026804 20210226. The patent publication number is KR20220122320 (A). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/04, H01M4/133, H01M4/1393 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (US), H01M10/0525 (EP, KR), H01M4/0416 (US), H01M4/0435 (EP, KR, US), H01M4/133 (EP, KR), H01M4/1393 (EP, KR), H01M4/583 (US), H01M4/622 (EP), H01M4/623 (US), H01M4/625 (EP, US), H01M4/661 (US), H01M4/669 (US), H01M2004/021 (EP, KR, US), H01M2004/027 (EP, KR, US), H01M4/622 (KR), H01M4/625 (KR), Y02E60/10 (EP) and Y02P70/50 (EP).

Korean Intellectual Property Office has released the abstract. According to the abstract, "The present disclosure relates to a negative electrode for a secondary battery that is improved in the peeling resistance and adhesiveness of the active material layer and thus can improve the life characteristics of the negative electrode and the lithium secondary battery, a method of manufacturing the same and a lithium secondary battery including same. The negative electrode for a secondary battery includes a metal current collector; and an active material layer formed on the metal current collector and containing a negative electrode active material, a binder, and a conductive material, wherein the active material layer has an average value of shear strength of 1.6 MPa or more as measured at a predetermined depth."

[**Toyota Motor Applies for Patent on All-Solid-State Lithium Battery**](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Toyota Motor has applied for Korean patent for all-solid-state lithium battery. Sugimoto Takuya developed it.

The patent application number is KR20220023531 20220223. The patent publication number is KR20220122522 (A). International Patent Classification codes are H01M10/052, H01M10/0562, H01M10/0585, H01M10/42 and H01M50/531. Cooperative Patent Classification codes are H01M10/052 (EP, CN, KR), H01M10/0525 (US), H01M10/0562 (EP, KR), H01M10/058 (CN), H01M10/0585 (EP, KR), H01M10/4235 (EP, KR), H01M4/628 (US), H01M50/531 (KR), H01M50/533 (EP, CN), H01M50/586 (EP, CN), H01M2300/0068 (EP, KR) and Y02P70/50 (EP).

The abstract of the patent published by the Korean Intellectual Property Office states: "Provided is an all-solid-state lithium battery capable of suppressing short-circuiting caused by metallic Li creeping up on peripheral end faces. In the all-solid-state lithium battery, an anode mixture layer, a solid electrolyte layer, and a cathode mixture layer are layered in this order; a Li-occluding solid is disposed on at least part of peripheral end faces on the solid electrolyte layer, and the Li-occluding solid is responsive to Li."

[LG Energy Solution Filed Patent for Positive Electrode and Lithium Secondary Battery Comprising the Same](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- LG Energy Solution has applied for Korea Patent News patent for positive electrode and lithium secondary battery comprising the same. The invention was developed by Lee Dong Hun, Kim Hak Yoon, Baek So Ra, Hur Hyuck, Kim Dong Hwi, Kim Hyeong Il, Chae Seul Ki and Jung Wang Mo.

The patent application number is KR20220025482 20220225. The patent publication number is KR20220122556 (A). International Patent Classification codes are H01M10/052, H01M4/02, H01M4/131, H01M4/505 and H01M4/525. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M4/02 (EP), H01M4/131 (EP, KR), H01M4/505 (EP, KR), H01M4/525 (EP, KR), H01M2004/021 (KR), H01M2004/028 (KR) and Y02E60/10 (EP).

The abstract issued by Korean Intellectual Property Office explains, "The present invention relates to a positive electrode for a lithium secondary battery. The positive electrode according to the present invention comprises: a positive electrode current collector; a first positive electrode active material layer formed on the positive electrode current collector, and including a first positive electrode active material; and a second positive electrode active material layer formed on the first positive electrode active material layer, and including a second positive electrode active material, wherein: the first positive electrode active material and the second positive electrode active material include a lithium nickel-cobalt-based oxide in which the nickel content is at least 80 at% with respect to the total amount of metal components other than lithium; the first positive electrode active material has a molar ratio of nickel to cobalt of at least 18; and the second positive electrode active material has a molar ratio of nickel to cobalt of less than 18."

[Arkema Inc Files Korean Intellectual Property Office Patent Application for Coated Electrode with Polymeric Binders for Lithium Ion Battery](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Arkema Inc has filed a patent application with the Korean Intellectual Property Office for coated electrode with polymeric binders for lithium ion battery. Fine Thomas J M and Park Shinae developed the invention.

The patent application number is KR20227025728 20201123. The patent publication number is KR20220122695 (A). International Patent Classification codes are H01B1/22, H01B1/24, H01M10/0525, H01M4/04, H01M4/139 and H01M4/62. Cooperative Patent Classification codes are H01B1/22 (EP, KR), H01B1/24 (EP, KR), H01M10/0525 (KR,

US), H01M4/0404 (EP, KR), H01M4/0421 (US), H01M4/139 (EP, KR), H01M4/583 (US), H01M4/622 (EP, KR), H01M4/623 (KR, US), H01M4/625 (KR), H01M10/052 (EP), H01M2004/021 (US), H01M4/623 (EP) and Y02E60/10 (EP).

[Blue Solutions Filed Patent for Composite Electrode Comprising a Metal and a Polymer Membrane, Manufacturing Method and Battery Containing Same](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Blue Solutions has applied for Korea Patent News patent for composite electrode comprising a metal and a polymer membrane, manufacturing method and battery containing same. The invention was developed by Lecuyer Margaud, Perticarari Sofia and Deschamps Marc.

The patent application number is KR20227023456 20201222. The patent publication number is KR20220122661 (A). International Patent Classification codes are H01M10/052, H01M10/054, H01M10/058, H01M4/134, H01M4/1395, H01M4/38, H01M4/40 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (US), H01M10/058 (EP), H01M4/04 (EP), H01M4/134 (EP, KR), H01M4/139 (EP), H01M4/1395 (KR), H01M4/366 (EP), H01M4/38 (EP), H01M4/381 (EP, KR), H01M4/382 (EP, KR), H01M4/40 (EP, KR), H01M4/405 (EP, KR, US), H01M4/62 (KR), H01M4/622 (EP), H01M4/623 (EP, US), H01M4/624 (EP), H01M10/052 (KR), H01M10/054 (KR), H01M10/058 (KR), H01M2004/027 (KR, US), Y02E60/10 (EP) and Y02P70/50 (EP).

The abstract issued by Korean Intellectual Property Office explains, "The present invention relates to a composite negative electrode based on pure metallic lithium, pure metallic sodium or one of their alloys and a polymer membrane, a method for manufacturing such an electrode, as well as an electrical energy storage system, in particular an electrochemical accumulator such as a secondary (rechargeable) lithium or sodium battery comprising at least one such negative electrode. It is particularly applicable to Lithium-Metal-Polymer or LMPTM batteries."

[Dragonfly Energy Files United States Patent Application for Processes for the Manufacture of Conductive Particle Films for Lithium Ion Batteries and Lithium Ion Batteries](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Dragonfly Energy has filed a patent application for processes for the manufacture of conductive particle films for lithium ion batteries and lithium ion batteries. This invention was developed by Phares Denis and Ferranto Justin S.

The patent application number is US202418604688 20240314. The patent publication number is US2024222596 (A1). International Patent Classification codes are B05B5/053, B05B5/08, B05B5/14, B05B5/16, B05D1/06, H01M4/04, H01M4/13 and H01M4/139. Cooperative Patent Classification codes are B05B5/0533 (US), B05B5/087 (EP, US), B05B5/14 (EP, US), B05B5/1608 (EP, US), B05D1/06 (US), H01M4/0419 (EP, US), H01M4/0435 (EP, US), H01M4/13 (EP, US), H01M4/139 (EP, US) and Y02E60/10 (EP).

According to the abstract released by the U.S. Patent and Trademark Office: "The invention is directed to a process for forming a particle film on a substrate. Preferably, a series of corona guns, staggered to optimize film thickness uniformity, are oriented on both sides of a slowly translating grounded substrate (copper or aluminum for the anode or cathode, respectively). The substrate is preferably slightly heated to induce binder flow, and passed through a set of hot rollers that further induce melting and improve film uniformity. The sheeting is collected on a roll or can be

combined in-situ and rolled into a single-cell battery. The invention is also directed to products formed by the processes of the invention and, in particular, batteries."

[Eve Energy Seeks Patent for Electrode Sheet, Preparation Method Thereof and Lithium Ion Battery](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Eve Energy has sought patent for electrode sheet, preparation method thereof and lithium ion battery. This invention was developed by Liu Rongjiang.

The patent application number is US202318541223 20231215. The patent publication number is US2024222591 (A1). International Patent Classification codes are H01M10/0525, H01M4/04, H01M4/70 and H01M50/536. Cooperative Patent Classification codes are H01M10/0525 (US), H01M4/04 (US), H01M4/70 (US), H01M50/536 (US) and H01M10/058 (US).

An abstract released by the U.S. Patent and Trademark Office states: "An electrode sheet includes a current collector and an active material layer disposed on at least one surface of the current collector; a tab recess is disposed inwardly on a long side of the active material layer, a notch is disposed on other long side of the active material layer opposite to the tab recess, an opening is formed on an edge side of the tab recess, the tab recess is exposed from the surface of the current collector, and the notch passes through the current collector along a thickness direction of the electrode sheet."

[Advanced Lithium Electrochemistry Submits Patent Application Titled Method for Quality Examination of Cathode Materials for Lithium-Ion Batteries](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Advanced Lithium Electrochemistry has submitted a patent application for method for quality examination of cathode materials for lithium-ion batteries. This invention was developed by Liao Yung-Tsung, Cheng Yu-Chun and Kuo Chi-Huang.

The patent application number is US202318452208 20230818. The patent publication number is US2024222590 (A1). International Patent Classification codes are G01N21/73, H01M10/0525, H01M4/04 and H01M4/62. Cooperative Patent Classification codes are G01N21/73 (US), H01M10/0525 (US), H01M4/04 (US), H01M4/485 (EP), H01M4/505 (EP), H01M4/525 (EP), H01M4/5825 (EP), H01M4/62 (US), H01M10/0525 (EP), H01M2004/028 (EP, US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "A method for quality examination of cathode materials for lithium-ion batteries comprising steps of adding cathode material powders to a solution of a surfactant to form a cathode material mixture solution; transferring the cathode material mixture solution to ball milling; filtering the cathode material mixture through a 200-mesh sieve, measuring the weight of a first residue that does not pass through the sieve, and determining whether the weight of the first residue exceed a first threshold value; filtering the cathode material mixture through a 420-mesh sieve, measuring the weight of a second residue that does not pass through the sieve, and determining whether the weight of the second residue exceed a second threshold value; and analyzing the second residual and determining whether multiple metal elements exceed multiple threshold values."

[Samsung Sdi Filed New Patent for Negative Active Material for Rechargeable Lithium Battery and Rechargeable Lithium Battery Including the Same](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Samsung Sdi has sought patent for negative active material for rechargeable lithium battery and rechargeable lithium battery including the same. This invention was developed by Kim Young-Min, Shin Changsu, Park Sunil, Kang Eunji, Oh Doori, Won Jongmin and Kim Yookyung.

The patent application number is US202318385008 20231030. The patent publication number is US2024222604 (A1). International Patent Classification codes are H01M10/0525, H01M4/36, H01M4/38, H01M4/587 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP), H01M10/0525 (US), H01M4/1395 (EP), H01M4/362 (EP), H01M4/364 (EP), H01M4/366 (EP, US), H01M4/386 (EP, US), H01M4/587 (US), H01M4/628 (US), H01M2004/027 (EP and US).

According to the abstract released by the U.S. Patent and Trademark Office: "A negative active material for a rechargeable lithium battery and a rechargeable lithium battery including the negative active material, the negative active material includes a silicon-carbon composite including secondary particles in which nano silicon primary particles are agglomerated, and an amorphous carbon coating layer on a surface of the secondary particles; and sodium silicate."

[**Samsung Sdi Filed New Patent Application for Positive Active Material for Rechargeable Lithium Battery, Preparing Method Thereof and Rechargeable Lithium Battery Including the Same**](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Samsung Sdi has submitted a patent application for positive active material for rechargeable lithium battery, preparing method thereof and rechargeable lithium battery including the same. This invention was developed by Jang Jungsue, Kil Donghyun, Kim Minhan, Kim Jinyoung, Kim Jinhwa, Seog Jihyun, Shim Jaeha, Ahn Kiyong, Chang Donggyu, Chae Youngjoo, Choi Aram and Ha Jeuk.

The patent application number is US202418603865 20240313. The patent publication number is US2024222602 (A1). International Patent Classification codes are C01G53/00, H01M4/02, H01M4/04, H01M4/36, H01M4/505 and H01M4/525. Cooperative Patent Classification codes are C01G53/40 (US), C01G53/44 (US), C01G53/50 (KR), H01M10/052 (KR), H01M10/0525 (EP, CN), H01M4/0471 (CN, US), H01M4/364 (KR, US), H01M4/366 (EP, CN, KR, US), H01M4/485 (EP, CN), H01M4/505 (EP, CN, KR, US), H01M4/525 (EP, CN, KR, US), H01M4/5825 (EP), H01M4/62 (KR), H01M4/628 (CN), C01P2004/82 (KR), C01P2006/12 (KR), H01M2004/021 (CN, US), H01M2004/028 (CN, US) and Y02E60/10 (EP).

An abstract released by the U.S. Patent and Trademark Office states: "Disclosed are a positive active material for a rechargeable lithium battery, a method of preparing the same, and a rechargeable lithium battery including the same. The positive active material includes a first positive active material in a form of secondary particles including a plurality of primary particles that are aggregated together, and a second positive active material having a single particle form, wherein both of the first positive active material and the second positive active material are nickel-based positive active materials, each of the first positive active material and the second positive active material is coated with cobalt, and a maximum roughness of a surface of the second positive active material is greater than or equal to about 15 nm."

[LG Energy Solution Files U.S. Patent and Trademark Office Patent Application for Anode Composition, Anode for Lithium Secondary Battery, and Lithium Secondary Battery Comprising Anode](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- LG Energy Solution has filed a patent application with the U.S. Patent and Trademark Office for anode composition, anode for lithium secondary battery, and lithium secondary battery comprising anode. Kim Young Jae and Lee Jaewook developed the invention.

The patent application number is US202318563309 20230324. The patent publication number is US2024222601 (A1). International Patent Classification codes are H01M10/0525, H01M4/133, H01M4/134, H01M4/36, H01M4/38, H01M4/587, H01M4/62 and H01M4/02. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M10/0525 (EP, US), H01M4/02 (EP), H01M4/04 (EP), H01M4/0404 (EP, KR), H01M4/133 (EP, US), H01M4/134 (EP, KR, US), H01M4/1395 (EP, KR), H01M4/36 (EP), H01M4/364 (EP, US), H01M4/38 (EP), H01M4/386 (EP, KR, US), H01M4/48 (EP), H01M4/483 (EP), H01M4/583 (EP, KR), H01M4/587 (EP, US), H01M4/62 (EP, KR), H01M4/624 (EP, KR), H01M4/625 (EP, US), H01M2004/021 (EP, KR, US), H01M2004/027 (EP, KR, US) and Y02E60/10 (EP).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "A negative electrode composition, a negative electrode comprising the same, and a lithium secondary battery including the negative electrode are provided. The negative electrode composition comprises a silicon-based active material, a conductive material, a binder, and a carbon-based material, the carbon-based material being included in an amount of 15 parts by weight or less based on 100 parts by weight of the negative electrode composition, having a charge capacity of 400 mAh/g or higher, a discharge capacity of 350 mAh/g or higher, and a charge/discharge efficiency of 90% or less."

[SK on Patent Application: Anode Active Material for Lithium Secondary Battery and Lithium Secondary Battery Including the Same](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has received SK on patent application for anode active material for lithium secondary battery and lithium secondary battery including the same. Park Gwi Ok, Yoo Seok Keun, Jang Dong li and Chung Ju Ho developed it.

The patent application number is US202418610290 20240320. The patent publication number is US2024222608 (A1). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/04, H01M4/36, H01M4/38 and H01M4/587. Cooperative Patent Classification codes are H01M10/0525 (US), H01M4/0471 (EP, US), H01M4/1393 (EP), H01M4/1395 (EP), H01M4/366 (EP, US), H01M4/386 (EP, US), H01M4/483 (EP), H01M4/587 (EP, US), H01M4/624 (EP), H01M4/625 (EP), H01M2004/021 (US), H01M2004/027 (US) and Y02E60/10 (EP).

The abstract of the patent published by the U.S. Patent and Trademark Office states: "An anode active material for a lithium secondary battery includes a carbon-based particle including pores therein, a silicon-containing coating layer formed at an inside the pores of the carbon-based particle or on a surface of the carbon-based particle, and a carbon coating layer formed on the silicon-containing coating layer. A full width at half maximum (FWHM) of an O1s peak of a surface measured by an X-ray photoelectron spectroscopy (XPS) is 2.0 or more. A lithium secondary battery including the anode active material having improved initial discharge capacity and capacity efficiency is provided."

[**Nat Univ Pukyong Ind Univ Coop Found \[Kr\]: Univ Chosun Iacf Files Patent Application on Negative Electrode Active Material for Rechargeable Lithium Battery, Method of Preparing Same, and Rechargeable Lithium Battery Including Same**](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- U.S. Patent and Trademark Office has filed patent application in U.S. Patent and Trademark Office on negative electrode active material for rechargeable lithium battery, method of preparing same, and rechargeable lithium battery including same. Oh Pilgun and Son Yoonkook developed the invention.

The patent application number is US202318398138 20231227. The patent publication number is US2024222605 (A1). International Patent Classification codes are H01M10/0525, H01M4/36, H01M4/38 and H01M4/587. Cooperative Patent Classification codes are H01M10/0525 (US), H01M4/366 (US), H01M4/38 (US), H01M4/386 (US), H01M4/587 (US) and H01M2004/027 (US).

U.S. Patent and Trademark Office has released the abstract. According to the abstract, "This disclosure provides a negative electrode active material for a rechargeable lithium battery, a method of preparing the same, and a rechargeable lithium battery including the same. The negative electrode active material for a rechargeable lithium battery includes crystalline carbon having a plurality of pores therein, and lithiophilic material inside the plurality of pores, wherein the lithiophilic material is not present on the outer surface of the crystalline carbon."

[**Volt14 Solutions Files Patent for Anode Ink Formulation for Lithium-Ion Battery**](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Volt14 Solutions has filed new patent application for anode ink formulation for lithium-ion battery in U.S. Patent and Trademark Office. This invention was developed by Gupta Puneet, Fong De Cheng and Halilovic Dzeneta.

The patent application number is US202218557627 20220428. The patent publication number is US2024222628 (A1). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/04, H01M4/38, H01M4/583 and H01M4/62. Cooperative Patent Classification codes are H01M10/0525 (KR, US), H01M4/0404 (EP, KR, US), H01M4/13 (EP, KR), H01M4/134 (EP, KR), H01M4/139 (EP, KR), H01M4/1395 (EP, KR), H01M4/386 (EP, KR, US), H01M4/387 (EP, KR), H01M4/483 (EP, KR), H01M4/583 (US), H01M4/62 (EP, KR), H01M4/621 (US), H01M4/622 (EP, KR), H01M4/625 (EP, KR, US), H01M10/0525 (EP), H01M2004/027 (EP, KR, US), Y02E60/10 (EP and KR).

According to the abstract released by the U.S. Patent and Trademark Office: "Provided herein is an anode ink formulation useful for manufacturing negative electrodes, and batteries comprising the same, and methods of preparation thereof."

[**Samsung Electronics Filed a Patent for Cathode, Lithium Secondary Battery Including the Same, and Method of Preparing Cathode**](#)

Battery Patent | Fri, 12 Jul 2024

Alexandria, July 12 -- Samsung Electronics filed a patent application with the U.S. Patent and Trademark Office for cathode, lithium secondary battery including the same, and method of preparing cathode. This invention was developed by Lim Sungjin, Park Hwiyeol, Ka Jonghoon, Kim Taeyoung and Lee Heungchan.

The patent application number is US202318400003 20231229. The patent publication number is US2024222631 (A1). International Patent Classification codes are H01M10/052, H01M10/0562, H01M4/131, H01M4/1391, H01M4/36, H01M4/525 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (US), H01M10/0562 (US), H01M4/131 (US), H01M4/1391 (US), H01M4/366 (US), H01M4/525 (US), H01M4/62 (US), H01M2004/021 (US), H01M2004/028 (US), H01M2300/0071 (US) and H01M2300/008 (US).

An abstract released by the U.S. Patent and Trademark Office states: "A cathode including a cathode active material layer including a composite cathode active material particle including a core, and a coating layer disposed on at least a portion of the core, wherein the core includes a lithium transition metal oxide, and the coating layer includes a first solid electrolyte, wherein the first solid electrolyte is a halogen-containing oxide solid electrolyte, and a matrix comprising a second solid electrolyte, wherein the second solid electrolyte is a halogen-free oxide solid electrolyte, and wherein the composite cathode active material particle is disposed in the second solid electrolyte, and wherein the first solid electrolyte and the second solid electrolyte each comprise silicon and boron."

[LG Energy Solution Filed New Patent Application for Aqueous Slurry for Positive Electrode, Positive Electrode Composition, Lithium-Ion Secondary Battery Including Said Positive Electrode Composition, and Methods for Manufacturing Same](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- LG Energy Solution has submitted a patent application for aqueous slurry for positive electrode, positive electrode composition, lithium-ion secondary battery including said positive electrode composition, and methods for manufacturing same. This invention was developed by Chihara Kuniko and Matsubara Keiko.

The patent application number is KR20227015763 20201224. The patent publication number is KR20220120551 (A). International Patent Classification codes are H01M10/0525, H01M4/02, H01M4/04, H01M4/13, H01M4/139 and H01M4/62. Cooperative Patent Classification codes are H01M10/0525 (KR), H01M4/0404 (EP, KR), H01M4/13 (EP, KR), H01M4/139 (EP, KR), H01M4/62 (KR), H01M4/622 (EP), H01M4/623 (EP, KR, US), H01M10/0525 (EP, US), H01M2004/021 (US), H01M2004/028 (EP, KR, US), H01M4/0404 (US) and Y02E60/10 (EP).

An abstract released by the Korean Intellectual Property Office states: "There is provided an aqueous slurry for a positive electrode comprising an aqueous binder to impart the outstanding lithium ionic conductivity, adhesive property and chemical stability to a positive electrode. There is provided an aqueous slurry for a positive electrode comprising a binder composition for a positive electrode comprising a polyvinylidene fluoride (PVDF)-based polymer and a water-soluble polymer comprising carboxymethyl cellulose (CMC), and positive electrode active material particles dispersed in an aqueous solvent."

[LG Energy Solution Submits Patent Application Titled Electrode Assembly Having an High Energy Density and Lithium Secondary Batterys Containing the Same](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- LG Energy Solution has submitted a patent application for electrode assembly having an high energy density and lithium secondary batterys containing the same. This invention was developed by Kim Shul Kee, Oh Sang Seung, Kim Hye Hyeon, Lim Sung Chul and Jo Chi Ho.

The patent application number is KR20210024271 20210223. The patent publication number is KR20220120798 (A). International Patent Classification codes are H01M10/052, H01M10/42, H01M4/131, H01M4/36, H01M4/38, H01M4/48, H01M4/505, H01M4/525, H01M4/58, H01M4/587 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP, KR, US), H01M10/4235 (EP, KR), H01M4/131 (EP, KR), H01M4/364 (EP, KR, US), H01M4/366 (US), H01M4/386 (KR, US), H01M4/483 (KR), H01M4/505 (KR), H01M4/525 (EP, KR, US), H01M4/58 (KR), H01M4/583 (US), H01M4/587 (EP, KR), H01M4/62 (KR), H01M4/623 (US), H01M4/625 (US), H01M10/058 (KR), H01M2004/021 (KR, US), H01M2004/027 (US), H01M2004/028 (EP, KR, US) and Y02E60/10 (EP).

An abstract released by the Korean Intellectual Property Office states: "An electrode assembly having a high energy density and a lithium secondary battery including the same are disclosed herein. The electrode assembly includes a positive electrode in which a positive electrode mixture layer includes a positive electrode active material and a positive electrode additive and a negative electrode in which a negative electrode mixture layer includes graphite mixed with silicon (Si)-containing particles. The amount of gas generated during charging and discharging of a battery is reduced, the resistance change rate of the electrode is low even after charging and discharging, and accordingly, a lithium secondary battery including the electrode assembly has a high energy density, a long lifetime, and good quick charging efficiency."

[Prime Planet Energy & Solutions Filed a Patent for Positive Electrode Active Material and Lithium Ion Secondary Battery](#)

Battery Patent | Thu, 11 Jul 2024

Seoul, July 12 -- Prime Planet Energy & Solutions filed a patent application with the Korean Intellectual Property Office for positive electrode active material and lithium ion secondary battery. This invention was developed by Yamamoto Yuji.

The patent application number is KR20220020687 20220217. The patent publication number is KR20220120485 (A). International Patent Classification codes are H01M10/0525, H01M10/0587, H01M4/02, H01M4/1315, H01M4/136, H01M4/13915, H01M4/38 and H01M4/58. Cooperative Patent Classification codes are C01G53/006 (US), C01G53/44 (CN), C01G53/50 (EP), H01M10/0525 (CN, KR, US), H01M10/0587 (KR), H01M4/1315 (KR), H01M4/136 (KR), H01M4/13915 (KR), H01M4/38 (KR), H01M4/388 (KR), H01M4/485 (CN), H01M4/505 (CN), H01M4/525 (EP, CN), H01M4/58 (KR), H01M4/582 (US), C01P2002/60 (EP), C01P2002/72 (US), C01P2002/74 (EP), C01P2002/77 (CN), C01P2004/61 (EP, CN, US), C01P2006/40 (EP, US), C01P2006/80 (EP), H01M10/0525 (EP), H01M2004/021 (KR, US), H01M2004/028 (KR, US), Y02E60/10 (EP and KR).

[Korean Intellectual Property Office Releases SK On Patent Application for Anode Active Material for Lithium Secondary Battery and Lithium Secondary Battery Comprising the Same](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has released SK On patent application for anode active material for lithium secondary battery and lithium secondary battery comprising the same. This invention was developed by Chung Ju Ho, Park Gwi Ok, Kim Joon Sup, Park Eun Jun and Jang Dong Il.

The patent application number is KR20210021718 20210218. The patent publication number is KR20220118069 (A). International Patent Classification codes are C01B33/113, H01M10/052, H01M4/02, H01M4/36, H01M4/48 and H01M4/62. Cooperative Patent Classification codes are C01B33/113 (KR), H01M10/052 (CN, KR), H01M10/0525 (US), H01M4/0428 (EP), H01M4/0471 (US), H01M4/139 (EP), H01M4/366 (EP, CN, KR), H01M4/382 (CN), H01M4/386

(CN, US), H01M4/483 (EP, KR), H01M4/583 (CN, US), H01M4/625 (EP, KR), C01P2002/54 (KR), C01P2004/80 (KR), H01M2004/027 (CN, KR), Y02E60/10 (EP) and Y02P70/50 (EP).

[LG Energy Solution Files Application to Patent Sacrificial Cathod Meterials Reduced Gas Generation and Lithium Secondary Battery Containing the Same](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- LG Energy Solution has filed new patent application for sacrificial cathod meterials reduced gas generation and lithium secondary battery containing the same in Korean Intellectual Property Office. Yoo Tae Gu, Jung Wang Mo, Jo Chi Ho, Kim Ji Hye, Jung Hae Jung and Heo Jong Wook developed it.

The patent application number is KR20210024264 20210223. The patent publication number is KR20220120316 (A). International Patent Classification codes are C01G51/00, H01M10/052, H01M10/42, H01M4/02, H01M4/131 and H01M4/62. Cooperative Patent Classification codes are C01G51/42 (EP, KR), H01M10/052 (EP, KR), H01M10/42 (EP), H01M10/4235 (KR), H01M4/02 (EP), H01M4/131 (EP, KR), H01M4/62 (EP, KR), H01M4/628 (KR), C01P2006/40 (EP, KR), H01M2004/028 (KR) and Y02E60/10 (EP).

The abstract of the patent published by the Korean Intellectual Property Office states: "The present technology relates to a sacrificial positive electrode material with a reduced gas generation amount and a method of preparing the same, and the sacrificial positive electrode material can reduce the generation of gas, particularly, oxygen (O₂) gas, during charging and discharging of a battery after activation and achieve a high charge/discharge capacity by including a lithium cobalt metal oxide represented by Chemical Formula 1, which is doped with a specific fraction of zinc, and having a powder electrical conductivity adjusted within a specific range, and thus the stability and lifespan of a battery including the same are effectively enhanced."

[Samsung SDI Files Patent Application for Cathode for Lithium Secondary Battery and Lithium Secondary Battery Including the Same](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has released Samsung SDI patent application for cathode for lithium secondary battery and lithium secondary battery including the same. Kim Da Hyun, Kim Min Seo, Kim Sang Hyung, Kim Sang Hoon, Park Hye Jin, Woo Myung Heui, Ryu Bo Kyung and Lee Tae Jin developed the invention.

The patent application number is KR20210022035 20210218. The patent publication number is KR20220118191 (A). International Patent Classification codes are H01M10/052, H01M10/0567, H01M4/02, H01M4/131 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M10/0567 (EP, KR), H01M4/02 (EP), H01M4/131 (EP, KR), H01M4/62 (EP, KR), H01M4/628 (KR), H01M2004/028 (KR) and Y02E60/10 (EP).

[SK On Files for Korean Patent titled Anode Active Material for Lithium Secondary Battery and Lithium Secondary Battery Including the Same](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- Korean Intellectual Property Office has filed patent application for anode active material for lithium secondary battery and lithium secondary battery including the same at Korean Intellectual Property Office. This invention was developed by Park Gwi Ok, Chung Ju Ho, Kim Joon Sup, Park Eun Jun and Jang Dong Il.

The patent application number is KR20210021719 20210218. The patent publication number is KR20220118070 (A). International Patent Classification codes are H01M10/052, H01M4/02, H01M4/131, H01M4/1391, H01M4/36, H01M4/48 and H01M4/62. Cooperative Patent Classification codes are H01M10/052 (KR), H01M10/0525 (CN, US), H01M4/131 (KR), H01M4/1391 (KR), H01M4/366 (EP, CN, KR, US), H01M4/48 (CN), H01M4/483 (EP, KR, US), H01M4/587 (US), H01M4/625 (EP, CN, KR), H01M10/0525 (EP), H01M2004/027 (EP, KR, US), H01M2220/20 (US) and Y02E60/10 (EP).

[LG Energy Solution Files Korean Intellectual Property Office Patent Application for Nonaqueous Electrolyte Solution and Lithium Secondary Battery Comprising the Same](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- LG Energy Solution has filed a patent application with the Korean Intellectual Property Office for nonaqueous electrolyte solution and lithium secondary battery comprising the same. Igarashi Yoshiyuki and Matsubara Keiko developed the invention.

The patent application number is KR20227021979 20201224. The patent publication number is KR20220119045 (A). International Patent Classification codes are H01M10/052, H01M10/0567, H01M10/0568, H01M10/0569, H01M4/02, H01M4/48, H01M4/505 and H01M4/525. Cooperative Patent Classification codes are H01M10/052 (EP, KR), H01M10/0566 (EP), H01M10/0567 (KR, US), H01M4/483 (US), H01M4/525 (US), H01M10/0525 (US), H01M10/0568 (KR), H01M10/0569 (KR), H01M2004/021 (KR), H01M2300/0037 (KR), H01M4/483 (EP, KR), H01M4/505 (EP, KR), H01M4/525 (EP, KR) and Y02E60/10 (EP).

[I Ten Filed New Patent Application for Method for Producing Lithium-Ion Batteries, in Particular High Power Lithium-Ion Batteries, and Battery Obtained by This Method](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- I Ten has submitted a patent application for method for producing lithium-ion batteries, in particular high power lithium-ion batteries, and battery obtained by this method. This invention was developed by Gaben Fabien and Cayrefourcq Ian.

The patent application number is KR20227025644 20201223. The patent publication number is KR20220119149 (A). International Patent Classification codes are H01M10/0525, H01M10/0585, H01M4/74, H01M50/11, H01M50/117, H01M50/121, H01M50/124, H01M50/131, H01M50/533 and H01M50/536. Cooperative Patent Classification codes are H01M10/0525 (EP, IL, KR), H01M10/0568 (US), H01M10/0585 (EP, IL, KR), H01M4/0404 (US), H01M4/742 (EP, IL, KR), H01M50/11 (EP, IL, KR), H01M50/117 (EP, IL, KR), H01M50/121 (EP, IL, KR), H01M50/124 (EP, IL, KR), H01M50/131 (EP, IL, KR), H01M50/16 (US), H01M50/519 (US), H01M50/533 (EP, IL, KR), H01M50/534 (US), H01M50/536 (KR), H01M50/54 (US), H01M50/562 (US), H01M2300/0065 (EP, IL, KR), Y02E60/10 (EP) and Y02P70/50 (EP).

An abstract released by the Korean Intellectual Property Office states: "The invention relates to a novel high-power battery architecture comprising singular anode and cathode-conducting means that give it an improved service life."

[Asahi Chemical Ind Files Korean Intellectual Property Office Patent Application for Lithium Ion Battery Separator](#)

Battery Patent | Fri, 12 Jul 2024

Seoul, July 12 -- Asahi Chemical Ind has filed a patent application with the Korean Intellectual Property Office for lithium ion battery separator. Zhang Xun, Kuroki Ryo, Fukunaga Yuki and Kobayashi Hiromi developed the invention.

The patent application number is KR20227027368 20191011. The patent publication number is KR20220119165 (A). International Patent Classification codes are H01M10/0525, H01M50/403, H01M50/417, H01M50/443, H01M50/446, H01M50/449, H01M50/489 and H01M50/491. Cooperative Patent Classification codes are C08J9/26 (EP, KR), C08J9/36 (EP, KR), H01G11/52 (EP, KR), H01G11/58 (EP), H01G11/84 (EP), H01M10/0431 (EP), H01M10/052 (KR), H01M10/0525 (EP, CN, US), H01M10/056 (KR), H01M10/0568 (EP), H01M10/0585 (EP, KR), H01M10/0587 (EP, KR, US), H01M50/40 (CN), H01M50/403 (EP, CN, KR, US), H01M50/409 (KR), H01M50/411 (EP, US), H01M50/414 (KR), H01M50/417 (EP, KR), H01M50/443 (EP, US), H01M50/446 (EP, KR), H01M50/449 (KR), H01M50/451 (EP), H01M50/46 (US), H01M50/489 (EP, KR, US), H01M50/491 (EP, KR, US), H01M50/609 (EP), H01M2300/0025 (EP), Y02E60/10 (EP, KR) and Y02P70/50 (KR).