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We operate more than 175 companies across the energy, life sciences, advanced materials, mobility, and semiconductors industries. As part of the broader SK network, we also have access to global perspectives and resources that help us fulfill our vision for each of the markets were in. 2010-Present 2000-2009 Page 2 1990-1999 1980-1989 Page 3 1970-1979 1960-1969 1950-1959 Uncovers method to enhance long cycle life of sulfide-based all-solid-state lithium metal batteriesClarifies cathode degradation mechanism; unveils link between gel polymer electrolyte thermal curing time and battery lifeSEOUL -- SK On, a leading global battery and trading company, presented today its latest findings on solid-state battery research in collaboration with academic partners, highlighting its commitment to advancing next-generation battery solutions.SK On, part of South Koreas SK Group, said that its research, conducted in collaboration with Dr. Dong-Won Kims group at Hanyang University in Seoul, discovered a method to improve the cycle life of sulfide-based all-solid-state lithium metal batteries (ASSLMBs).The study, published last month in ACS Energy Letters,a renowned journal in the field of energy and chemistry, introduces a method for forming a protective layer on the lithium metal anode surface to enhance battery safety and extend its lifespan. The team also filed patent applications for its key findings both domestically and internationally.Lithium metal is considered a next-generation anode material due to its high capacity around 10 times greater than that of graphite and its low electrochemical potential which enables enhanced energy density and high-performance power.However, lithium metal is also known for challenges such as its high reactivity with air, which lead to the uneven formation of inorganic compounds on its surface. This layer hinders the movement of lithium ions, reducing both charging and discharging efficiency, while promoting dendrite formation[i] which further threatens battery life. Also, all-solid-state batteries using lithium metal anodes have generally demonstrated limited charge-discharge cycles, often around 100.To address the issue of limited lifespan, the research team removed the resistive surface layer by immersing the lithium metal anode in a specially formulated solution[ii]. This approach resulted in the formation of a protective layer featuring high ionic conductivity, attributed to lithium nitrate, and enhanced mechanical strength due to lithium oxide.SK On said this method ensured interfacial stability, with experimental results showing that the surface-modified lithium metal anode enabled stable cycling for over 300 charge-discharge cycles at room temperature, tripling the cycle life compared to conventional lithium metal all-solid-state batteries.In collaboration with Dr. Jong Hyeok Park of Yonsei University, SK On announced another significant achievement, uncovering the relationship between battery life and the thermal curing time of gel polymer electrolytes (GPEs). Their study was abolished in the prestigious journal Angewandte Chemie in February.According to the study, longer thermal curing times for the GPEs resulted in better retention of battery performance. The study showed that batteries using electrolytes with 60 minutes of thermal curing showed a 9.1% decrease in discharge capacity, while those with just 20 minutes of thermal curing experienced a 34% decrease.It suggests that shorter thermal curing time leads to the easy decomposition of the cathode protective layer, which in turn reduces capacity and ultimately shortens battery lifespan.Also in the study, the team applied density functional theory[iii] calculations to identify the cause and mechanism of cathode performance degradation and investigate residual monomer-induced side reactions during the initial charging stage. SK On said the findings from this study is expected to contribute to improving the lifespan of polymer-oxide composite-based batteries.These achievements are the result of SK Ons continued R&D efforts and technological prowess, enabled through collaboration with academia, said Kisoo Park, Head of R&D at SK On. They will serve as a key foundation for overcoming the technological challenges of solid-state batteries.Meanwhile, SK On is developing two types of ASSBs: polymer-oxide composite and sulfide-based, with commercialization targeted for 2028 and 2030, respectively.About SK OnSK On is a global leading battery and trading company committed to technological innovation for a better, sustainable future. SK On was launched as an independent company in October 2021 after SK Innovation, South Koreas largest energy company, decided to split off its battery business unit. SK On aims to accelerate the green energy transition by leveraging its global production base and R&D capabilities, as well as its production and quality management know-how.Headquartered in Seoul, South Korea, SK On has a worldwide presence with battery plants currently operating or in construction across the United States, Europe, and Asia. For more information, visit: i]Dendrites: a phenomenon in which lithium grows unevenly in tree-like structure on the anode during charging[ii]Solution containing nitromethane, dimethoxyethene, and lithium nitrate.[iii]Density functional theory (DFT): a quantum mechanical modeling approach used to calculate how electrons are arranged in materials and predict their energy states. 450 Number of power chips that can be made from a single 6-inch diameter wafer manufactured by SK Siltron CSS or enough chips to support the power systems of up to eight EVs Whether its in life sciences, semiconductors, or sustainable energy, we rally behind the people, industries, and places that drive better growth and create meaningful change. SK is committed to recruiting the best talent and ensuring that diversity and inclusion are part of every step. Supply set to begin in 2028 for automakers electric cars built in North AmericaSK On expands customer base with first Japanese automaker partnershipSEOUL SK On, a leading global battery and trading company, announced today it signed a battery supply agreement with Nissan Motor.Under the agreement, SK On will supply Nissan with nearly 100GWh of U.S.-made batteries from 2028 to 2033. SK Ons high-performance, high-nickel pouch cells will power Nissans next-generation electric vehicles to be produced at its Canton, Mississippi, assembly plant. The agreement marks SK On's first partnership with a Japanese automaker, highlighting its efforts to expand its global customer base. It also reflects SK On's commitment to driving electrification in North America.SK On, a subsidiary of South Koreas second-largest conglomerate SK Group, currently operates two battery plants and is building four more plants with its partners in the United States. SK On's annual production capacity in the United States is projected to be more than 180 GWh once they are fully operational.With the agreement, Nissan is set to accelerate its electrification efforts in North America through a stable battery supply.Nissan last year announced plans to launch 30 new models over the next three years, of which 16 are electrified cars. The automaker also said it plans to produce four electric vehicles from its Canton, Mississippi, assembly plant starting in 2028.This agreement underscores the strength of our battery technology and our growing presence in the North American market, said Seok-hee Lee, SK On President and CEO. Leveraging our production footprint and expertise, we are committed to supporting Nissans electrification strategy and the broader transition to sustainable mobility.This agreement with SK On is a significant milestone for Nissans electrification journey in North America and supports further investment in our U.S. production footprint, said Christian Meunier, Chairman, Nissan Americas.Through this smart partnership with SK On, we can leverage their growing U.S. production capacity to deliver innovative, high-quality electric vehicles that meet the needs of our customers.About SK OnSK On is a global leading battery & trading company committed to technological innovation for a better, sustainable future. SK On was launched as an independent company in October 2021 after SK Innovation, South Koreas largest energy company, decided to split off its battery business unit. SK On merged with SK Trading International in November 2024 followed by SK Enterm in February 2025 in a strategy to secure sustainable growth.SK On aims to accelerate the green energy transition by leveraging its global production base and R&D capabilities, as well as its manufacturing and quality management know-how.Headquartered in Seoul, South Korea, SK On has a worldwide presence with battery plants currently operating or in construction across the United States, Europe, and Asia.For more information, visit: SK Innovation E&S has laid the foundation for its evolution into a "Global Clean Energy & Solution Provider" by expanding its business scope to include renewable energy and energy solution businesses as well as liquefied natural gas (LNG), power, and district energy. SK Innovation E&S is the first private Korean company to establish a presence in every part of the LNG value chain. In the upstream business, the company was the first private company in Korea to directly import LNG in 2006. Currently, SK Innovation E&S has gas fields in Indonesia, Australia, and the United States. In the midstream business, SK Innovation E&S established a foundation for the import and distribution of North American shale gas by securing rights to use the LNG terminal of Freeport based in the United States.In the downstream business, SK Innovation E&S contributes to the stable supply and demand for electricity and supply of gas in Korea. In city gas, the company has the largest market share, operating seven city gas subsidiaries in eight regions nationwide.SK Innovation E&S is taking on the challenge in global markets to achieve its vision of providing clean energy solutions worldwide. The company will advance to the next level as an eco-friendly energy company which is addressing social issues and responding to the global challenge of climate change, specifically by promoting a wide range of LNG-based projects and by expanding renewable energy. Immersion cooling allows for lower cell temperatures during fast charging conditions, thanks to its superior heat control. It is also well known for improving battery life by reducing temperature variations between battery cells.The battery pack incorporating immersion cooling technology, currently being developed by SK On and SK Enmove, highlights enhanced cooling efficiency with an optimized fluid flow structure design that maximizes the contact area between thermal fluids and cells.SK On plans to take better advantage of immersion cooling by incorporating its wireless battery management system (BMS).BMS refers to a system that continuously monitors key battery parameters, including temperature, voltage, and current, while managing the charge and discharge performance between cells. It plays a critical role in optimizing both battery performance and lifespan.Conventional BMS requires wiring harness and connectors, resulting in a more complex battery pack structure and limited space efficiency. In particular, when combined with immersion cooling, the wires were seen as problematic, as they can disrupt the flow of thermal fluids and affect cooling performance.To address this, SK On came up with an approach where a wireless chip is attached to the cell tabs, with the collected cell data transmitted to the BMS via antennas embedded within the module.The combination of immersion cooling and wireless BMS ensures the smooth flow of thermal fluids, as there are no wires. It boasts a simple design structure and superb physical stability that reduce the risk of fluid leakage, while improving waterproof performance.Additionally, energy density can be increased due to the extra space created by the absence of physical wires. The reliability of the product also improves, as it eliminates the risk of wire defects.The commercialization of wireless BMS is expected to accelerate the adoption of the Battery Passport, which refers to a digital record that provides comprehensive information about a batterys lifecycle, including manufacturing details, usage history, and recycling data. It enables easy data management of batterys state of charge, cycle life, carbon footprint, and more.We expect to see growing demand for wireless BMS and immersion cooling as the importance of safety increases with the rising EV penetration rate, said Kisoo Park, Head of SK Ons R&D Division. As we aim to lead in battery safety solutions, SK On will continue to contribute to electrification through technological innovation.Meanwhile, SK Enmove, whose goal is to transform into an Energy Saving Company, has been strengthening its position in the global immersion cooling market by leveraging its competitive edge in raw materials, backed by a stable supply of high-quality base oils, and its advanced thermal fluid technology optimized for various immersion cooling solutions.Last year, SK Enmove, in collaboration with Hanwha Aerospace, unveiled the worlds first immersion cooling energy storage system (ESS). By directly immersing the maritime ESS in thermal fluids, it effectively eliminated the risk of fire.About SK OnSK On is a global leading battery & trading company committed to technological innovation for a better, sustainable future. 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The company pursues investments that align with deeply-held corporate values to advance a more sustainable future for the benefit of both local and global ecosystems. Through an emphasis on Environmental, Social, and Governance (ESG) values and an eye for global partnerships, SK Inc. is building upon a substantial history of innovative business practices to secure and nurture growth engines for long-term success.Sustainability is critical to the future of growth. SK Inc. follows this guiding principle by accelerating the transition towards the zero-carbon economy and adopting a broad focus on green businesses: clean energy, recycling, alternative food, and more.SK Inc. will also strive to solidify the green ecosystem through battery, hydrogen and other energy solutions to further reduce CO emissions. Hydrogen, a critical energy source for the environmentally conscious era, is at the center of the companys approach to ESG.In 2021, SK Inc. changed the company name from SK Holdings.

Sk is a blend. Sk blend words. Is sk a digraph. Is or a blend or digraph.