Wet process lithium battery separator patent

Are lithium ion battery separators wet?
Information is provided on the typical properties of lithium-ion battery separators that are produced using wet process technology. Advances and developments using the wet process approach are explicitly highlighted. A key effort in this regard is the desire to produce progressively thinner separators.

What is polymer-based separators for lithium-ion batteries?
Polymer-Based Separators for Lithium-Ion Batteries: Production, Processing, and Properties takes a detailed, systematic approach to the development of polymer separators for lithium-ion batteries, supporting the reader in selecting materials and processes for high-performance polymer separators with enhanced properties.

Can a porous battery separator be used in a lithium ion rechargeable battery?
A novel porous battery separator has been developed for use in a lithium ion rechargeable battery.

What are new process technologies for the production of battery separators?
The details of new process technologies for the production of battery separators are provided. These novel approaches are being largely pursued for applications such as electric vehicles. Three basic approaches are discussed. The first approach involves the use of nonwoven materials to produce battery separators.

What is a suitable dry process separator?
The possibly preferred inventive dry process separator may be biaxially stretchedand may have a thickness range between 10 um and 25 um having improved strength,high porosity,and unexpectedly and/or surprisingly high charge capacity,such as,for example,high 10 C rate charge capacity.

What is a wet process?
The wet process,also known as phase inversion,involves the mixing of the polymer resins with a processing oil or a plasticizer,and/or other additives,and the mixture is then extruded and the processing oil or plasticizer is removed. During the wet process the pores are formed when the processing oil is removed.

ENTEK enjoys more than two decades of experience as the only US-owned and US based producer of "wet-process" separator for lithium batteries and continues to ...

The present invention discloses a kind of wet process lithium ion battery separator degreasing unit, it is characterized in that, including oil removing tank shell, outlet air orifice...

HIPORE(TM) wet-process separator coating and finishing lines 2020"s Since 2015, Celgard has operated as a subsidiary of the Asahi Kasei Group, a diversified group of companies that ... Lithium Battery" patents. PROPRIETARY CELGARD ADHESIVE COATINGS. 6 Separator Innovations for Next-Generation Battery

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Cells

With the rapid increase in quantity and expanded application range of lithium-ion batteries, their safety problems are becoming much more prominent, and it is urgent to take corresponding safety measures to improve battery safety. Generally, the improved safety of lithium-ion battery materials will reduce the risk of thermal runaway explosion. The separator is ...

The invention relates to a process for recovering a waste solvent generated in wet-process production of battery separators. Waste dichloromethane, wastewater and waste paraffin oil generated in extraction stage of the production process are subjected to processes including high-temperature negative-pressure distillation, a gas-phase condensation and oil-liquid separation ...

Novel separators have also shown the possibility to enhance the performance of next generation batteries. 11 For instance, by increasing cycle life of Li-metal batteries by suppressing lithium dendrite growth. 12,13 A limitation with these studies is the use of traditional liquid electrolytes that ultimately degrade over time and where safety is still of concern. However, separators can ...

ENTEK"s patented nanoparticle technology (US Patent # 9,847,519) o 5-layer separator with outer adhesive functional layers and alumina-coated polyolefin base separator for laminated cells often used in xEV batteries This brochure is only intended to show typical properties of ENTEK lithium separators. We encourage purchasers to conduct tests to

In an electrochemical battery cell of a lithium ion battery, the separator is situated between confronting inner face surfaces of a positive electrode and a negative electrode and is soaked...

The lithium-ion battery separator manufactured by the present invention is used for a lithium-ion battery, and can effectively decrease the short circuit generated during the ...

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Established in 2010, Gellec is an enterprise integrating R& D, production, and sales of lithium battery wet-process separators. Gellec has applied for 230 patents for ...

Fig 2 - SEM of ENTEK Membranes "Wet-process" Lithium-ion battery separator micro-structure. ... (US Patent #9,847,519) the process enables the production of ...

The inventive dry process microporous battery separator membrane preferably has equal or better separator charge performance and/or discharge performance and/or ...

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Battery Separator Film Development: Impact of Coating Keywords: DSC, TMA, TGA, DMA, thermal analysis, battery, battery separator, lithium-ion battery, polyolefins ABSTRACT Battery separators are critical to the performance and safety of lithium-ion batteries, allowing ion exchange while acting as a physical barrier between electrodes.

ENTEK utilizes a unique, wet process manufacturing approach to produce its ultrahigh molecular weight polyethylene (UHMWPE) base separators with excellent mechanical properties. With over 35 years" experience in battery separator production, ENTEK boasts a talent pool of more than 700 employees with a strategically positioned global footprint in the USA, UK and Asia-Pacific.

Introduction. Lithium ion batteries (LIB) are rapidly becoming the most common source of stored energy for everything from personal electronic devices to electric vehicles and long-term ...

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