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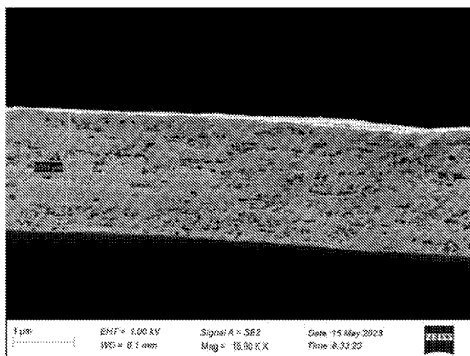
(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。

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(54) Title: EXTREMELY THIN AND HIGH-STRENGTH LITHIUM ION BATTERY SEPARATOR AND PREPARATION METHOD THEREFOR

(54) 发明名称: 极薄高强锂离子电池隔膜及其制备方法

[图 1]



(57) Abstract: An extremely thin and high-strength lithium ion battery separator and a preparation method therefor. The preparation method for the extremely thin and high-strength lithium ion battery separator comprises the following steps: mixing a nucleating agent, ultra-high molecular weight polyethylene powder, an antioxidant, and a pore-forming agent, and uniformly stirring to obtain a premixed raw material; injecting the premixed raw material into an extruder, heating to obtain a thermodynamic single-phase melt, and carrying out melt casting to obtain a crystallized cast sheet, wherein the ratio of the linear speed of a chill roll in the melt casting to the flow rate at which the thermodynamic single-phase melt is subjected to melt casting is 5-50; and carrying out longitudinal stretching and first transverse stretching on the crystallized cast sheet, carrying out extraction, washing and drying, and carrying out second transverse stretching, retraction and heat setting to obtain the extremely thin and high-strength lithium ion battery separator. By using the ultra-high molecular weight polyethylene powder, nucleating agent heterogeneous crystallization, and high-magnification casting and stretching, the multiple effects allow the crystallinity of a thin film to be improved, and the thinning of the separator is realized, so that the high-strength and extremely thin lithium ion battery separator is prepared.

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TD, TG)。

本国际公布：
— 包括国际检索报告(条约第21条(3))。
— 包括经修改的权利要求及声明(条约第19条(1))。

(57) 摘要：一种极薄高强锂离子电池隔膜及其制备方法，极薄高强锂离子电池隔膜的制备方法包括以下步骤：将成核剂、超高分子量聚乙烯粉料、抗氧化剂和成孔剂混合，搅拌至均匀，得到预混原料；将预混原料注入挤出机，加热，得到热力学单相熔体，进行熔体流延，得到结晶铸片，其中，熔体流延中激冷辊的线速度与热力学单相熔体进行熔体流延时流速的比值为5~50，将结晶铸片经纵向拉伸和第一次横向拉伸，萃洗，干燥，进行第二次横向拉伸，回缩，热定型，得到极薄高强锂离子电池隔膜。通过使用超高分子量聚乙烯粉料、成核剂异相结晶、高倍率流延拉伸，多重效应提高薄膜的结晶度，同时实现隔膜的薄化，制得高强极薄锂离子电池隔膜。