

研究简报

全氟二异丙基磷酸锂的合成及其电化学性能研究

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摘要 以合成的氯代二异丙基磷为原料, 利用电化学全氟化方法, 得到全氟二异丙基磷酸锂(Li[(C₃F₇)₂PF₄]), 并对其物理和电化学性能进行了研究.

关键词 [Simons过程](#) [锂离子二次电池](#) [电解质](#)

分类号 [0621](#)

Synthesis and Electrochemical Properties of Lithium Bis(hexafluoroisopropyl)tetrafluorophosphate

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Abstract Lithium-ion secondary cell has a high energy density, stable and high working voltage, wide working temperature and long working term. It is a safe and clean energy resource without pollution. At present, lithium hexafluorophosphate is used as a conducting electrolyte lithium salt in lithium-ion secondary batteries. But lithium hexafluorophosphate as conducting electrolyte lithium salt has some disadvantages such as hydrolysis and instability. Lithium bis(hexafluoroisopropyl) tetrafluorophosphate Li[(C₃F₇)₂PF₄] was received by Simons process from diisopropylchlorophosphane in this paper. As an electrolyte of Li ion secondary cell, Li[(C₃F₇)₂PF₄] had lower vapor pressure than LiPF₆ in the solvent at the same temperature, comparable conductivity and oxidation stability in the same concentration at room temperature. It was worth mentioning that Li[(C₃F₇)₂PF₄] has an excellent stability towards hydrolysis. The synthesis process is safe and easily controlled.

Key words [Simons process](#) [Lithium ion secondary cell](#) [Electrolyte](#)

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