

研究简报

无隔膜电解槽中四醋酸铅间接电有机合成研究

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摘要 醋酸铅可以在Pt电极上被氧化生成四醋酸铅, 循环伏安法和计时电流法研究表明其初始动力学过程存在三维连续成核机理. 在该醋酸电解液中加入一定量的苯, 控制一定的电流密度、温度等条件可以阻化铅在对电极上的析出, 实现了无隔膜电解槽中四醋酸铅的电解生成, 并应用于间接有机电合成. 本工作分别将其应用于苯乙酮和苯乙烯的间接有机电氧化反应, 得到苯乙酮的乙酰氧基化产率为68.2%以及苯乙烯的氧化产率为35.6%.

关键词 [四醋酸铅](#) [间接有机电合成](#) [无隔膜电解](#) [苯乙酮](#) [苯乙烯](#)

分类号

Lead Tetraacetate Mediated Electrochemical Synthesis in Undivided Compartment

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Abstract Initial stage of oxidation of lead acetate on Pt electrode in glacial acetate acid was studied using cyclic voltammetry and chronoamperometry. Results show that the initial oxidation kinetics corresponded to a model including progressive nucleation. With addition of benzene and under certain current density and temperature, the indirect organic electrosynthesis using lead tetraacetate as media could be carried out in one compartment and no lead metal was deposited on the counter electrode. Acetoxylation of acetophenone and oxidation of styrene were performed in this system and the yields are 68% and 35.6% respectively.

Key words [lead tetraacetate](#) [indirect electrochemical organic synthesis](#) [undivided compartment](#) [acetophenone](#) [styrene](#)

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