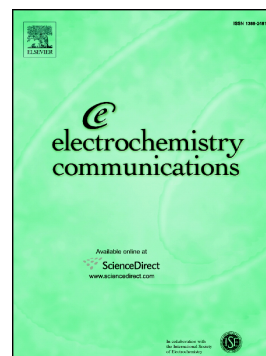


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Substituent Effect on Redox Potential of Terephthalate-based electrode materials for lithium batteries

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Abstract

The substituent effect on the redox potential of lithium terephthalate was studied using symmetrical dilithium disubstituted-terephthalate incorporating bromo, methoxy and amino groups. All the terephthalate derivatives have been synthesized and evaluated as anode material for lithium-ion batteries. The electrochemical results revealed an increase in the reduction potential in the case of bromo and methoxy groups and almost the same in the case of amino group compared to unmodified dilithium terephthalate. In addition, a very first tendency between the ¹³C chemical shifts and FTIR signal of the carbonyl and the reduction potential of the studied disubstituted-terephthalates was formulated.

Keywords: Organic anode materials, substituent effect, structure-property relationships, lithium batteries.

1. Introduction

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