SYNTHESIS OF 1,2,4-TRIARYLPYRIDINIUM SALTS FROM 2-CARBOXYLPYRYLIUM PERCHLORATES

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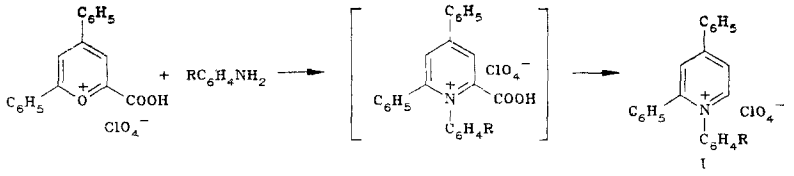
1,2,4-Triarylpyridinium salts are of considerable theoretical interest for the study of the mechanisms for the photocyclization of polyarylpyridinium cations [1, 2], whose availability is limited by the complexity of the synthesis of the original 2,4-diarylpyrylium salts [3].

In this communication we propose a simple preparative for the synthesis of 1,2,4-triarylpyridinium salts (I) with 50-100% yields, which involves the heating of equimolecular quantities of 2-carboxy-4,6-diphenylpyrylium perchlorate and arylamines in ethanol for 1 h.



I

The reaction probably proceeds with the decarboxylation of the intermediate carboxypyridinium salt. The evolution of carbon dioxide was detected during the reaction.

R, mp, °C (from a 1:1 ethanol–acetonitrile mixture): H, 250-253; o-CH_3, 145-147; p-CH_3, 284-250; o-OCH_3, 177-180; p-OCH_3, 235-236; p-NO_2, 183-184. The IR and PMR spectra correspond to the proposed structure of I. Compound I with R = p-CH_3 was obtained by a back synthesis from 2,4-diphenylpyrylium perchlorate and p-toluidine. The data from the elemental analysis for C, H, Cl, and N correspond to the calculated values.

LITERATURE CITED

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