

# Magnetic Field Effects upon Photochemistry of Benzophenonecarboxylate Esters\*

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## *Photochemistry / Hydrogen abstraction / External magnetic field / Biradical intermediate / Benzophenonecarboxylate esters*

Magnetic field effects have been studied on the photochemistry of 4-benzophenonecarboxylate (4-benzoylbenzoate) esters. The decay time of a biradical intermediate was found to be lengthened in the presence of external magnetic fields.

Magnetfeldeffekte auf die Photochemie von 4-Benzophenoncarboxylate (4-Benzylbenzoat)-Estern wurden untersucht. In Gegenwart eines Magnetfeldes wurde eine Verlängerung der Abklingzeit eines Biradikal-Intermediats gefunden.

## 1. Introduction

Photochemistry involving biradical intermediates has been studied for a variety of polymethylene-linked chain molecules [1–4]. Remarkable magnetic field effects have been observed on biradical lifetimes and on photoproduct yields. The biradical consisting of xanthenyl and xanthone ketyl radicals, shown in Fig. 1, has been investigated by means of laser photolysis [2], CIDEP and CIDNP [5]. It has been established that the primary process is hydrogen abstraction from the xanthone moiety by the xanthone chromophore in the excited triplet state.

The present paper describes the photochemistry of a benzophenonecarboxylate esters which contain a 1-phenylethanol moiety and a straight chain alkyl group. Magnetic field effects on the biradical decay times and the product yields were studied by the laser flash photolysis and steady-state photolysis, respectively.

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