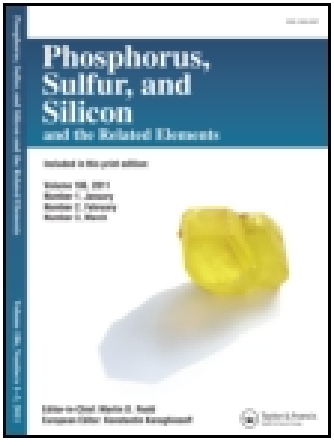

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The Effects of Electron Donating Groups on the Photoisomerization of Tetrasubstituted 4H-Thiopyrans

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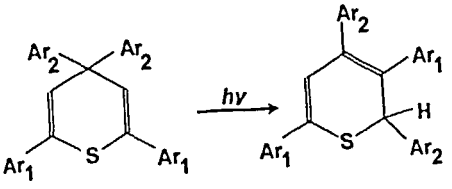
The relative yields of photoisomerization products of 4,4- and 2,6-dianisyl isomers **1** and **2** were compared with that of the unsubstituted model compound **3** under the identical experimental conditions.

INTRODUCTION

Following our studies on the photoisomerization of tetra- and hexasubstituted 4H-thiopyrans[1], recently it has been shown that the substitution of electron donating groups on the para position of the migratory 4-aryl group increase the relative rates of photoisomerization[2]. The present investigation was undertaken to determine the effect of electron donating groups on the aryl substituents attached to 2,6-positions of tetrasubstituted 4H-thiopyrans.

RESULTS AND DISCUSSION

To compare the effects of 2,6-positions with 4-position, the new 4,4-dianisyl-2,6-diphenyl-4H-thiopyran **1** and 2,6-dianisyl-4,4-diphenyl-4H-thiopyran **2** were synthesized and their relative yields of photoisomerization products compared with that of the unsubstituted 2,4,4,6-tetraphenyl-4H-thiopyran model compound **3** under the identical experimental conditions. Yields were determined by ^{1}H-NMR



1. Ar_1 = Ph, Ar_2 = p-$MeOC_6H_4$;
2. Ar_1 = p-$MeOC_6H_4$, Ar_2 = Ph
3. Ar_1 = Ar_2 = Ph

spectroscopy using the ratios of characteristic signals of 4H-thiopyrans to the corresponding 2H-thiopyran isomers.

The results showed that on irradiation of thiopyrans **1**, **2** and **3** with a low-pressure mercury lamp at a wavelength λ=254 nm in benzene solutions under an argon atmosphere at room temperature, compound **1** gives the corresponding 2H-thiopyran isomers with a relative yields higher than the model compound **3**, whereas the relative yields is lower for compound **2**.

ACKNOWLEDGMENT

Support of this investigation by the Research Council at the University of Tehran through Grant No. 213/1/514 is gratefully acknowledged.

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