# PHOTOCHEMICAL VARIATION OF α-SUBSTITUTED α-(*o*-TOLYL)ACETOPHENONES

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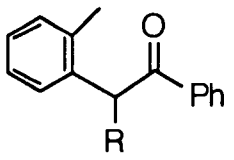
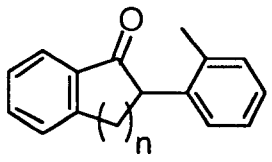
The correlation between structure and reactivity has been major interests for many years in studies of photochemical reactions. For the photochemical reactions having several possible decay pathways, the product distribution of the reaction depends upon each decay rate for the excited state and barrier for conformational changes. When the molecule has high barrier for the conformational change, the reaction occurs mainly in the highly populated conformer in the ground states, assuming that it is the reactive one.

We have studied photochemical reactions of several α-substituted α-(*o*-tolyl)acetophenones, **1**, in order to understand structure/reactivity relationship on this system. Some of these compounds showed remarkable selectivities on their photoreactivities, which seemed to be controlled by the conformational prejudice in the ground states. Furthermore, structural changes led to various decay pathways of biradical intermediates. Our preliminary findings on this system will be described in this seminar.




R = ethylidene, cyclopropane or oxirane




n = 1 or 2

**1**