

水杨叉间溴缩苯胺光发色反应瞬态

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摘要 用时间和波长分辨微微秒荧光光谱研究了低温激发烯醇式水杨叉间溴缩苯胺的荧光辐射光谱,证明该荧光由可以拆分的两组分荧光组成。与烯醇式缩苯胺的长波 λ_{max} 值相比,观察到大约 $10,000\text{cm}^{-1}$ 的Stark红移。所以,这两个组分都不是标题化合物的烯醇式。光激发将首先生成Mobius式过渡态,它再迅速转变为烯酮式缩苯胺完成1,5异面氢迁移的时间为 $5 \times 10^{-11}\text{s}$ 。并提出了一个两条途径到达烯酮缩苯胺的反应机理。

关键词 [苯胺 P](#) [光化学反应](#) [反应机理](#) [溴代烃](#) [水杨酸 P](#) [荧光分光光度法](#)

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Transient in the photocolouration of salicylidene m-bromoanil

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Abstract The fluorescence produced by excitation of the enol form of salicylidene m-bromoanil has been investigated with time- and wave-resolved picosecond fluorescence spectrum. The fluorescence is composed of two resolvable components. Due to the observation of around 1000cm^{-1} Starkes red shift from the long wavelength λ_{max} of the enol anil, both species could not be assigned to the excited enol anil. The initially formed species, the Moebius-like transition, is rapidly converted into the keto-anil form. Since the lifetime of the latter species is 121 times longer than that of the former, the total emission spectrum is dominated by the longer lived species. Thus, the time required to complete the 1,5 antarafacial H transfer is equal to the rise time of the keto-anil fluorescence, i.e. $5 \times 10^{-11}\text{s}$. A reaction mechanism with two possible pathways to the ground state of the keto-anil has been suggested.

Key words [BENZAMINE P](#) [PHOTOCHEMICAL REACTION](#) [REACTION MECHANISM](#) [BROMOHYDROCARBON](#) [SALICYLIC ACID P](#) [FLUOROSPECTROPHOTOMETRY](#)

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