



Session I: Functional Colorants

Coumarin Dyestuffs for New Photo Technologies



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Abstract

Development of methodologies for the directed synthesis of coumarin dyestuffs exhibiting photochemical activity and required spectral characteristics is a key element in improving optical recording systems, monitoring of biochemical reactions and designing of modern sensor systems. Such dyestuffs include photogenerators of acidity – compounds that are capable being transformed with the release of H⁺ acid during irradiation. This presentation will describe our finding that the acid photogenerated by pyrazolinylcoumarins is sufficient to open the lactone ring in Rhodamine laser dyes thereby activating their fluorescence. We have developed new media for optical information recording based on this phenomenon. We have also found that coumarin 6 dihydro form derivatives are photosensitive substrates that are directly converted into highly fluorescent laser dye Coumarin 6 under irradiation. The presentation will describe synthesis of coumarin dyestuffs that behave as photogenerators of acidity that provide two photons absorption and therefore can be photoactivated in the IR-region thereby facilitating the degradation of a biological object.