Photoreactivity of β , γ , ϵ -alkyl azide derivatives in crystals

Rajkumar Merugu and Anna Gudmundsdottir*

Department of Chemistry, University of Cincinnati, 2600 Clifton Ave., Cincinnati, OH 45221, merugurr@mail.uc.edu

Upon irradiation, β , γ , ϵ -alkyl azides formed triplet ketones and triplet nitrenes as the intermediates. The lifetimes of these triplet ketones and triplet nitrenes are longer in the solid state than in the solution. Water suspension solid state laser flash photolysis shows that the lifetimes of these triplet ketone azides and triplet nitrenes have increased in solid state. It has been proposed that the crystal lattices can control the stability of these intermediates.