**Photochemical reactions of Polygermanes by steady-state and matrix isolation**

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**Abstract**

Photochemical reactions of substituted tris(trimethylgermyl)germanes **I-III** in cyclohexane has been studied by steady-state and matrix isolation techniques. Photolysis of trigermanes **I-III** involved both extrusion of (trimethylgermyl) germylenes and formation of germyl radicals via homolytic fission of germanium-germanium bond. The reaction of trigermanes **I-III** with CHCl3 and 2,3-dimethyl-1,3-butadiene as trapping agents gave the corresponding 1-germacyclopent-3-enes. The UV absorption bands of germylenes in matrix at 77 K were also observed. A possible suitable mechanism has been suggested to account for the identified products.

1. [↑](#footnote-ref-1)