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

**Abd El-Aal M. Gabera[[1]](#footnote-1)\* and Layla A. Taibb**

*aChemistry Department, Faculty of Science, Assiut University, Assiut 71516, Egypt*

*b*Chemistry Department, Faculty of Science, King Abdulaziz University, 21589 Jeddah*, Saudia Arabia*

**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)