

UV laser induced photolysis of glycolic acid isolated in argon matrices.

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Rok wydania

2021

Czasopismo

Journal of Photochemistry
and Photobiology A-
Chemistry

Numer woluminu

412

Strony

113236/1-113236/6

DOI

10.1016/j.jphotochem.2021.113236

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The photochemistry of matrix-isolated glycolic acid, induced by UV light, was studied by FTIR spectroscopy and B3LYPD3/6-311++G(3df,3pd) calculations. Several decomposition pathways were found to take place upon 212nm and 226nm wavelengths irradiation. A number of complexes formed between photoproducts were identified, among them those of formaldehyde with water, carbon monoxide and carbon dioxide as well as the H₂O-CO complexes. The structure and spectroscopic assignment of the photoproducts were made comparing the experimental results with the theoretical predictions and available literature data. The observed formation of different complexes indicates various pathways for their formation resulting from UV-induced photodecomposition of different precursor isomers.

Słowa kluczowe

Molecular complexes, Vibrational spectroscopy, Matrix isolation, Carboxylic acid, Computational chemistry

Adres publiczny

<http://dx.doi.org/10.1016/j.jphotochem.2021.113236>

Strona internetowa wydawcy

<http://www.elsevier.com>