

Dissociative photoionization and pyrolysis of Diazomeldrum's acid: A threshold photoelectron spectroscopy study

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Diazomeldrum's acid (DMA) is a molecule used in the investigation of the photoinduced and thermal induced Wolff rearrangement reaction and therefore of importance in photolithography.

We investigated DMA in an imaging photoelectron photoion coincidence study with the (iPEPICO) setup at X04DB VUV Beamline at the Swiss Light Source.

The threshold photoelectron spectrum (TPES) of DMA will be shown and the vibrational structure of the DMA cation will be presented. The dissociative photoionization and the fragmentation upon pyrolysis will be analyzed in detail. We identified the major fragmentation pathways in the DMA cation. Furthermore several reactive intermediates were thermally produced from DMA. Here we present the threshold photoelectron spectra of two particularly interesting pyrolysis products 2-diazoethenone $N=N=C=O$ and E-formylketene $O=C(CH)=O$.

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