INFRARED SPECTRA AND PHOTOISOMERIZATION OF HSO_2 AND HOSO TRAPPED IN SOLID NEON

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When a Ne:H_2:SO_2 mixture is codeposited at 4.2 K with a beam of neon atoms that have been excited in a microwave discharge, the resulting solid deposit has infrared absorptions characteristic of several neutral and ionic products. Among these are HSO_2 and *cis*-HOSO, recently identified among the products of the reaction of photoproduced H atoms with SO_2 in the heavier rare gas matrices [a] . The assignments and the photoisomerization behavior reported in the earlier study are supported by the neon-matrix observations, which include studies of the sulfur-34 and oxygen-18 substituted species. After photodestruction of the HSO_2 and *cis*-HOSO, slight warmup of the deposit to induce H-atom migration leads to regeneration of HSO_2.

[a] E. Isoniemi, L. Khriachtchev, J. Lundell, and M. Räsänen, Phys. Chem. Chem. Phys. 4, 1549 (2002).