

PHOTOLYSIS OF LIQUID FLUORINE AND NOBLE GASES AT -196°C

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The photolysis of fluorine/noble gas mixtures at -196°C is described. U.V. photolysis for 13 hours gives 28% yield of KrF_2 whilst photolysis with an argon laser gives comparable yields after only 30 minutes.

A 1:1:2 mixture of fluorine, krypton and MF_5 ($\text{M} = \text{As}, \text{Sb}$), photolysed at -196°C using both U.V. and Argon laser radiation, gives KrF_2 . There is no evidence for reaction with MF_5 at this temperature.

Careful warming affords $\text{Kr}_2\text{F}_3^+ \text{SbF}_6^-$, α - and β - $\text{KrF}^+ \text{Sb}_2\text{F}_{11}^-$, α - $\text{KrF}^+ \text{HsF}_6^-$ and $\text{KrF}^+ \text{As}_2\text{F}_{11}^-$ at various temperatures which have been characterised by Raman spectroscopy.