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THE EXPOSURE DEPENDENCE AND EMISSION SPECTRUM OF CHEMILUMINESCENCE PRODUCED DURING THE OXIDATON OF Si(111) BY O_2

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ABSTRACT

Chemiluminescene produced during the low pressure oxidation of a Si(111) surface by O_2 has been investigated. Carefully cleaned and annealed samples yield chemiluminescence at pressures as low as 6×10^{-7} torr, corresponding to a peak chemiluminescence yield of 2.2×10^{-7} photons per incident molecule and comparing favorably with the value of 1×10^{-7} measured by Bruce and Comas (ref.1). The evolution of the emission shows a hyperbolic decrease in time at pressures above 1×10^{-4} torr but becomes more complex at the lowest exposures studied The spectrally broad chemiluminescence was dispersed at medium resolution and recorded with an Optical Multichannel Analyzer in an attempt to identify and characterize the energy content of the emitt'ng species.

REFERENCES

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