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著者	OKU Masaoki, HIROKAWA Kichinosuke
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## The Spectroscopic Observation of the Selective Volatilization of Metal Solid Samples in a Nitrogen Plasma Flame\*

Masaoki OKU and Kichinosuke HIROKAWA

*The Research Institute for Iron, Steel and Other Metals*

### Abstract

Some metal solid samples were burned in a nitrogen plasma flame, and the spectrum intensity-time curves were spectrographically observed. The curves indicated that the fractional distillation of alloying elements was caused by the reactions of the solid alloy sample and nitrogen gas. The fractional distillation was explained in terms of the difference in the stabilities of the metal nitrides. The distribution of the emission species and the temperature of the flame suggested that there were few chemical reactions in the flame or that the chemical reactions in the flame had little effect on the spectrum intensities. In an appendix, the method of line-pair selections for obtaining the correct temperature is considered.

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