

# MASS-SPECTROMETRIC ANALYSIS OF LASER-INDUCED EVAPORATION OF PYROGRAPHITE UP TO 4400 K

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The investigation of a carbon sublimation at extremely high temperatures is possible only in a quasi-Langmuir evaporation regime. Formerly the vapor composition during the sublimation was investigated in [1] up to 4100 K only for a basal plane of a pyrographite. Taking into account the anisotropic structure of a graphite crystal it was very important to do a comparison study of evaporation from different planes of graphite. In the present work the results on evaporation both from c and ab- planes of graphite taken as a model of an ideal crystal are presented. For analysis of a vapor composition the time-of-flight mass-spectrometry with laser heating with millisecond pulses was used. The comparison of the evaporation of different molecular components was made using the data on evaporation coefficients [2], measured at temperatures up to 2500 K. It was confirmed that usage of relative evaporation coefficients given in [2] gives adequate results on a vapor composition during graphite evaporation up to 4400 K.

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1. Pflieger. R., Sheindlin M., Colle J.-Y. Advances in the mass spectrometric study of the laser vaporization of graphite. *J. Appl. Phys.* 2008. V. 104, P. 054902.
  2. Burns R.P., Jason A.J., Inghram M.G. Evaporation Coefficient of Graphite. *J. Chem. Phys.* 1964 V. 40. P. 1161