

P05 THE EFFECT OF TEMPERATURE DEPOSITION AND CONCENTRATION ON THE VIBRATIONAL SPECTRA OF THE WATER-METHANE CRYOFILMS

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One of methods of physical modeling of formation of methane clathrates in the nature is a process of co-condensation of a mixture of water vapor and various methane concentrations on the cooled to low temperature substrates. This allows on the basis of obtained information, such as the IR spectra of formed films, their refractive indices, density, etc. to make certain conclusions about the methane clathrate formation processes, the impact on these process temperature, pressure, concentration and other parameters. Results of an experimental study of dependence of the vibrational spectra of water vapor and methane thin films at different temperatures of condensation and concentration are given in this work. Condensation temperature varied in the range 16-200 K at a pressure of gas phase 10^{-4} Torr. The film thickness was 5 micrometers. Based on analysis of the obtained data are being made the conclusions about the formation of methane clathrates, and temperature ranges of their existence.