

THE LIQUID DROPLETS EVAPORATION  
FOR LOW PRESSURE'S VALUES  
UNDER LOW-POWER IRRADIATION  
WITH DIFFERENT FREQUENCIES  
AT THE OPTICAL RANGE

*A.V. Brytan, G.M. Verbinska, V.M. Sysoev,  
V.L. Karbouskiy, T.V. Cleshchonok*

Taras Shevchenko National University of Kyiv,  
Faculty of Physics  
(4-b, Prosp. Academician Glushkov, Kyiv 03022,  
Ukraine; e-mail: a\_brytan@ukr.net)

S u m m a r y

The results of experimental researches concerning the influence of optical radiation with various frequencies (wavelengths of 390, 565, and 625 nm) on the droplet evaporation rate in the atmosphere of dry nitrogen at pressures of 30, 50, and 100 mm Hg and the temperature of a vapor-gas mixture of 20 °C, which were obtained for a number of liquids, are reported. A substantial increase of the evaporation rate for water (up to 25%), nitrobenzene (up to 40%), and iodobenzene (up to 60%) droplets at a constant droplet temperature during the evaporation has been detected. The evaporation rates for ethyl benzene and isoamyl alcohol droplets in the dark regime and under radiation are found invariable within the limits of experimental errors. The red threshold of this effect is observed.