

KINETIC ENERGY OF A MONOLAYER OF DUST PARTICLES IN GAS DISCHARGE PLASMA

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S u m m a r y

The influence of internal reactions on the characteristics of high-temperature heat and mass transfer and the critical conditions for the ignition and the extinction in gas suspensions of carbon particles are researched. It is found that the internal reactions lead to a significant decrease in the ignition delay and critical diameters, which determines the ignition and the extinction of particles of a gas suspension. It is proven that the porous particle extinguishes when its mass achieves some critical value. The intervals of initial diameters and mass concentrations of particles are determined corresponding to the most complete burnout of carbon fuel.