

EXPERIMENTAL AND THEORETICAL STUDY
OF CHARGING OF CARBON NANOPARTICLES
IN SHOCK-HEATED PLASMA DURING PYROLYSIS
OF CARBON-CONTAINING MOLECULES

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S u m m a r y

This work is devoted to the experimental and theoretical study of charged carbon nanoparticles formed at the pyrolysis of various carbon-containing substances behind shock waves. The experimental results and the computer simulation of the electrical charging of carbon nanoparticles produced during the pyrolysis of C_3O_2 , CCl_4 , and C_6H_6 in shock waves are presented. The measurements of the nanoparticle charge by electric probes, as well as their temperature by emission-absorption spectroscopy and size by LII, were performed simultaneously. The results of simulation show a satisfactory agreement with the experimental data.