## PLASMA FORMING BY SPREADING OF PULSED ELECTRON BEAM IN HIGH PRESSURE GASES

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Presently, the forming of chemical active plasma under the action of pulsed high current electron beam attracts attention of many experimental and theoretical groups. Interest of the studies is possibility to employ of results for synthesis of nanoparticles. One of the possible ways of a nonequilibrium plasma formation is the action of pulsed electron beam with the power flow of  $10^6-10^9$  W/cm<sup>2</sup> on a high pressure gas medium. In this case the chemically active plasma is formed which allows to synthesize the nanoparticles and nanooxides.

Our theoretical investigation is devoted to analyze of the spreading of the pulsed electron beam with the power flow of  $10-10\,000$  MW/cm<sup>2</sup> in the oxygen-hydrogen gas mixture. The time evolution of the electron distribution function is described within the framework of Boltzmann equation. The plasma conditions for the synthesis of the nanoparticles and nanooxides are discussed.

Keywords: electron beam, plasma, modeling, nanooxides, Boltzmann equation.