

The mechanism of spark plasma sintering of ceramics

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Keywords: *mechanism of spark plasma sintering of ceramics, thermal diffusion fluxes, local temperature gradients.*

Abstract

We propose a mechanism of spark plasma sintering of ceramics, which is based on the thermal diffusion flux of atoms that occur in the material due to local temperature gradients. The phenomena lead to the formation of a ceramic frame and intensive treatment of pores. Based on the obtained formulas calculated there was calculated the time of spark plasma sintering, which is in satisfactory agreement with experimental data.