
Sintering Simulation by Means of the Plasticity Theory

© N.G. Burago^{1,2}, I.S. Nikitin³

¹ The Institute of Problems in Mechanics of RAS, Moscow, 119526, Russia

² Bauman Moscow State Technical University, Moscow, 105005, Russia

³ The Institute of Computer Aided Design of RAS, Moscow, 123056, Russia

The paper presents a variant of elastic-plastic porous media theory to calculate powder composites sintering (frigging). Some examples of a finite element calculation of inhomogeneous pressing and sintering are provided. Thermo-mechanical effect on the final form and porosity distribution of a sintered product with regard of mold walls contact interaction is considered.

Keywords: *liquid phase sintering, pressing, complex shape, contact interaction, damage, porosity, elasticity, plasticity.*

Burago N.G., Dr. Sci. (Phys.-Math.), Leading Researcher of the Institute of Problems in Mechanics of the Russian Academy of Sciences, Professor of “Applied Mathematics” Department of Bauman Moscow State Technical University. e-mail: burago@ipmnet.ru

Nikitin I.S., Dr. Sci. (Phys.-Math.), Leading Researcher of the Institute of Computer Aided Design of the Russian Academy of Sciences. e-mail: i_nikitin@list.ru