

Analysis of Powder Compaction through Equal Channel Angular Extrusion

By Kaushik, Anshul

Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | A parametric study | Equal Channel Angular Extrusion(ECAE) is a method of creating fine-grained materials through Severe Plastic Deformation. Recently it has been shown as a viable method of consolidating metallic powders for creating nano-crystalline materials. But, not much is understood about the process by which the compaction occurs. Due to this, it has been extremely difficult to control the deformation process in order to achieve grain morphologies in a repeatable manner. This work focuses on modeling the process in order to understand the effect of parameters involved in the process through simulation. Two powder compaction models are used to test their efficacy in modeling the process. The thermodynamic framework is applied to derive the constitutive equations of one of them. A modeling setup is created which represents the experimental setup for the process and results obtained from these simulations are presented. | Format: Paperback | Language/Sprache: english | 156 pp.



Reviews

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