基于ANSYS的秸秆类生物质冷成型仿真分析 Simulation Analysis of Compressing Molding under General Condition for Straw Biomass Based on ANSYS

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关键词： 生物质 冷成型 ANSYS 模拟 分析

摘 要： 运用ANSYS有限元理论对秸秆类生物质成型徐变过程进行模拟分析，根据其生物机理和化学成分建立生物质徐变有限元模型，生成接触对，通过非线性大变形分析得到成型徐变规律和成型压力-变形关系。结果表明生物质冷成型徐变过程包括松散、压紧、固化3个阶段，是塑性变形和粘性变形的结合。

Simulation analysis of molding process for straw biomass was carried based on ANSYS. The mechanics mold was established according to its biology mechanism and chemical component, along with contact pairs. Then molding rules and relations between pressure and deformation were obtained through nonlinearity analysis. The analysis results showed that biomass molding under general condition process included three stages: loose, compaction, solidification, which combined the plastic deformation with the viscous deformation. The obtained results are well in agreement with experiment data.

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