

基于干燥动力学特性的冷冻干燥过程判别 Judgment of Freeze-drying Process Based on Drying Dynamical Characteristics

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关键词: 冷冻干燥 干燥动力学特性 升华 解吸 判别

摘要: 判断冷冻干燥过程的升华干燥结束点和解吸干燥结束点, 对冷冻干燥过程的优化控制有重要意义。以富士苹果为试验材料, 在JDG-0.2型真空冻干试验机上进行了冷冻干燥动力学特性试验。采用自制的物料水分在线测量系统, 实时测量和绘制苹果块在冷冻干燥过程中的含水率及其变化曲线, 根据测量数据分析了物料冷冻干燥动力学特性, 提出了升华干燥结束点和解吸干燥结束点的判别方法, 便于冷冻干燥过程参数的优化控制。 It is of great significance for optimal controlling the freeze-drying process to determine the end of sublimation drying and desorption. The drying dynamical characteristics test for Fuji apple were carried out using the JDG-0.2 type vacuum freeze-drying machine. Based on the homemade real-time online measurement system, the moisture content of apple blocks was measured, and the changing curve was drawn during the freeze-drying process. According to the measured data, the freeze-drying dynamical characteristics were analyzed, the judgment method for the end of sublimation drying and desorption was proposed. It provides the means for optimal controlling parameters during the freeze-drying process.

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