

分离工程

## 介微称重技术测定药物在超临界流体和被掺杂聚合物间的分配

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摘要

关键词

[石英晶体微天平 \(介微称重技术\)](#) [超临界流体掺杂](#) [药物](#) [聚合物](#) [分配](#)

分类号

## Sub-microweighing technique for measurement of partitioning of drugs between supercritical fluid and impregnated polymer

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### Abstract

A high-pressure quartz crystal microbalance (QCM) apparatus was developed to investigate the absorption of carbon dioxide in two glassy polymer films—polystyrene (PS) and polyvinylpyrrolidone (PVP) at 40°C and pressure up to 9.0 MPa. PVP was shown to have better CO<sub>2</sub> absorption and chosen as the representative for supercritical impregnation of two model drugs—*o*-aminobenzoic acid and ibuprofen at 40°C and pressure up to 8.0 MPa. It was found that the two impregnants were embedded into the polymer with a partition coefficient as high as 10<sup>4</sup> order of magnitude. Since the sub-microweighing technique established and utilized in this study was simple, convenient and accurate, it was believed that the technique could have wide and effective applications in supercritical impregnation processes.

### Key words

[quartz crystal microbalance \(sub-microweighing\)](#) [supercritical fluid impregnation](#) [drug](#) [polymer](#) [partitioning](#)

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