

化学

## 空气脉冲对吹气法测量脉冲萃取柱下澄清段压力的影响

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**摘要** 本工作实验考察在吹气条件下空气脉冲对脉冲萃取柱下澄清段所测量的柱重、有机相密度、两相界面和水相密度的时均压降影响。实验结果表明: 在无空气脉冲且流速为零、有空气脉冲且单相流流速为零和有空气脉冲且单相流流速不为零的条件下, 吹气法所测量的有机相密度、水相密度及两相界面的时均压降是一致的, 而在有空气脉冲且两相流速均不为零的条件下, 吹气法所测量的水相密度、有机相密度和两相界面的时均压降误差依次增大。对于有机相, 吹气法所测量的柱重时均压降随着空气脉冲振幅的增加而减小, 随着流速增加而增大; 对于水相, 由于其流动方向与有机相相反, 柱重时均压降随流速的增加而减小。

**关键词** [脉冲萃取柱](#); [压力测量](#); [吹气法](#); [下澄清段](#); [空气脉冲](#)

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## Effect of Air Pulsation on Pressure Measurement in Bottom Settler of Pulsed Extraction Column by Air Purge Method

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**Abstract** The present research aims to determine the effect of air pulsation on pressure measurements for the column weight, the density of organic phase, the position of two-phase-surface and the density of aqueous phase in the bottom settler of pulsed extraction column by air purge method. It is shown that the time-averaged pressure drops for the density of organic phase, the position of phase surface and the density of aqueous phase remain constant under three conditions such as both the flow rate of fluid and air pulsation are zero, the flow rate of fluid is zero but air pulsation is not zero and neither the flow rate of single fluid nor air pulsation is zero, however, the relative error of these above pressure drop successively increases under the condition that neither the flow rates of two phase fluid nor air pulsation is zero. For both organic and aqueous phase, the time-averaged pressure drop of column weight decreases with the increasing of pulsed amplitude under the condition that the flow rate of fluid is zero but air pulsation is not zero. But for organic phase, the pressure drop increases with the increasing of the flow rate of fluid, however, it is opposed for aqueous phase due to the difference of flow direction.

**Key words** [pulsed extraction column](#) \_ [pressure measurement](#) \_ [air purge method](#) \_ [bottom settler](#) \_ [air pulsation](#)

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