

化学

脉冲萃取柱中两相界面的新型自动控制原理

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摘要 根据脉冲萃取柱界面移动速度和界面位移的特征, 以及界面移动速度与控制器输出量之间单值映射规律, 提出了以初始界面位置和目标位置之间的中点作为调节首要阶段, 利用运动学对称性特点, 实现了对界面位置的调节, 同时确定了界面移动速度为零时控制器输出量的大小。当接近目标位置时, 采用模糊控制来调节界面位置。计算机仿真实验和真实实验验证了上述控制模式的正确性。

关键词 [脉冲萃取柱](#) [两相界面](#) [吹气法](#) [在线测量](#) [自动控制](#)

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New Auto-control Principle of Phase Interface for Pulsed Extraction Column

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Abstract Based on the characteristics of the distance and moving velocity of the phase interface and the single-valued mapping between the moving-velocity and the output of controller, a new auto-control principle of the phase interface was presented. Firstly, the center between the initial position and target position of phase interface was chosen, then the position of phase interface was adjusted by means of the symmetry of the moving velocity of the phase interface, and finally the output value of the controller was determined at the moving velocity of zero. When the target position was nearly reached, the fuzzy control was chosen to adjust the position of phase interface. The principle was proved by both simulating and real experiment.

Key words [pulsed extraction column](#) [phase interface](#) [air purge](#) [online measurement](#) [auto-control](#)

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