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(54) Title: ADSORBENT SELECTION METHOD, PRESSURE SWING ADSORPTION METHOD, AND SYSTEM THEREFOR

(54) 发明名称: 吸附剂的选择方法、变压吸附方法及其系统

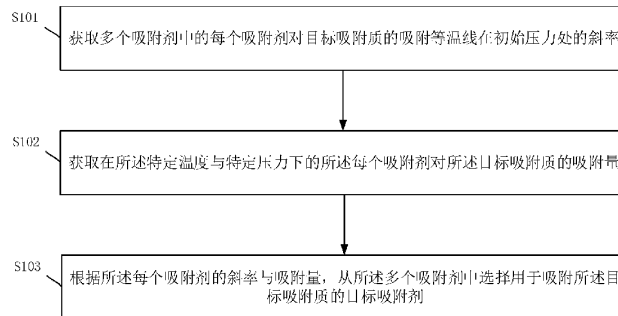


图 1

- S101 Obtain slope at initial pressure of adsorption isotherm with respect to target adsorbate of each adsorbent among plurality of adsorbents
- S102 Obtain adsorption capacity of each adsorbent on target adsorbate under specific temperature and specific pressure
- S103 Select target adsorbent for adsorbing target adsorbate from plurality of adsorbents according to slope and adsorption capacity of adsorbent

(57) Abstract: An adsorbent selection method, a pressure swing adsorption method, and a system therefor. The selection method comprises: obtaining the slope at an initial pressure of an adsorption isotherm with respect to a target adsorbate of each adsorbent among a plurality of adsorbents, wherein each adsorption isotherm is a curve representing adsorption capacity varying with pressure at a specific temperature; obtaining the adsorption capacity of each adsorbent on the target adsorbate under the specific temperature and a specific pressure; and selecting a target adsorbent for adsorbing the target adsorbate from the plurality of adsorbents according to the slope and the adsorption capacity of each adsorbent. In a pressure swing adsorption process, a pressure swing adsorption cycle can be optimized, the amount of an adsorbent used can be reduced, and operation and production costs of pressure swing adsorption can consequently be reduced.

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本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种吸附剂的选择方法、变压吸附方法及其系统。选择方法包括: 获取多个吸附剂中的每个吸附剂对目标吸附质的吸附等温线在初始压力处的斜率, 其中, 吸附等温线为在特定温度下吸附量随压力变化的曲线; 获取在所述特定温度与特定压力下的每个吸附剂对所述目标吸附质的吸附量; 以及根据每个吸附剂的斜率与吸附量, 从多个吸附剂中选择用于吸附目标吸附质的目标吸附剂。在变压吸附过程中可优化变压吸附周期, 减少吸附剂的用量, 进而降低变压吸附运行与生产成本。