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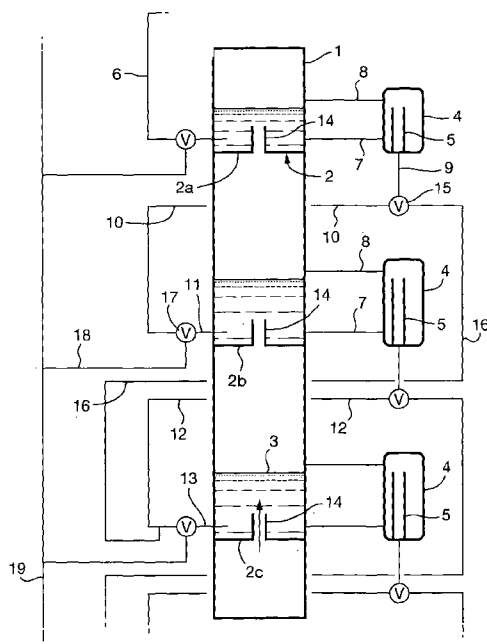
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(54) Title: APPARATUS AND METHOD

Fig. 1



(57) Abstract: An apparatus for use in heterogeneous catalytic reactions comprising a column reactor comprising a plurality of trays mounted one above another, each adapted to hold a predetermined liquid volume and a charge of particles of a solid catalyst thereon; means for introducing a liquid phase reactant above the uppermost tray; means for introducing a vapour phase reactant below the lowermost tray; means for removing a liquid phase post-reaction stream from below the lowermost tray; means for removing a vapour phase post-reaction stream from above the uppermost tray; vapour up-comer means associated with each tray adapted to allow vapour to enter that tray from below; underflow means associated with each tray adapted to remove liquid from that tray and the column reactor before being introduced into the column reactor at a lower tray; means for temporarily directing said liquid removed from a tray to bypass at least one lower tray and be reintroduced to the column reactor at a tray located below said at least one bypassed tray; means for removing the liquid and catalyst from said at least one bypassed tray; and means for replacing a liquid and catalyst inventory on said at least one bypassed tray.



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