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Patent Search

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Abstract:

The present subject matter discloses a Rotary Evaporator (RE) integrated with a Batch Glass Reactor (BGR). The RE integrated with the BGR includes a condenser configured to provide a reflux to the BGR, a chiller configured to provide cooling to contents of the BGR, a vacuum pump, characterized in that a bottom flask with a plurality of necks configured to be attached to the condenser of the RE via a neck amongst the plurality of necks, a stirrer configured to mix contents of the bottom flask, a heating unit to heat the contents of the bottom flask, and a plurality of interconnected valves forming a network of interconnected valves, configured to provide an inert gas inside the bottom flask. The inert gas provides a purging and maintains an inert environment inside the bottom flask and the bottom flask attached to the condenser operates as the BGR published with [FIGS. 4c]

Complete Specification

Description: A ROTARY EVAPORATOR INTEGRATED WITH A BATCH GLASS REACTOR

[0001] The present subject matter, in general, relates to a Rotary Evaporator (RE) integrated with a batch glass reactor (BGR), in particular, the present subject matter relates to the RE integrated with BGR and a provision of purge, reflux condenser, heating, cooling and mixing.

BACKGROUND

[0002] Currently one has to purchase a rotary evaporator (RE) and a batch glass reactor (BGR) with reflux condenser, external heating, cooling mixing through external agitator and with a provision of purge with inert gas separately. This costs a lot in terms of both money and space. While both RE and BGR have some common features like condenser with a glass flask below it (acting as reactor), there is no reported way to use condenser and collection section of RE as reactor assembly.

[0003] Currently, glass reactor of several sizes (few ml to several liters), shapes (spherical, conical, cylindrical etc.) and designs (jacketed, baffled, multiport etc.) are available without or with- purge (batch or continuous), heating (hot plate or water or oil bath), cooling (jacket, water or oil bath) mixing (agitator from top or magnet stirrer at bottom), and reflux condenser.

[0004] There may be drain in the reactor, especially large ones, to empty the reactor without opening from top. This requires jacket for heat transfer from sides. In absence of such drain line and valve, heating can be provided from bottom through hot plate or bath comprising water or oil using thermostat.

[0005] Similarly mixing can be provided using overhead agitator with various types and number of impellers and baffles based on total reactor volume, shapes, a desired mixing. Magnetic stirring at the bottom of reactor is also used for mixing in absence of drain valve.

[0006] In some glass reactors, condensers of various sizes and numbers are also used to condense the volatile components. This condensate may or may not be

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