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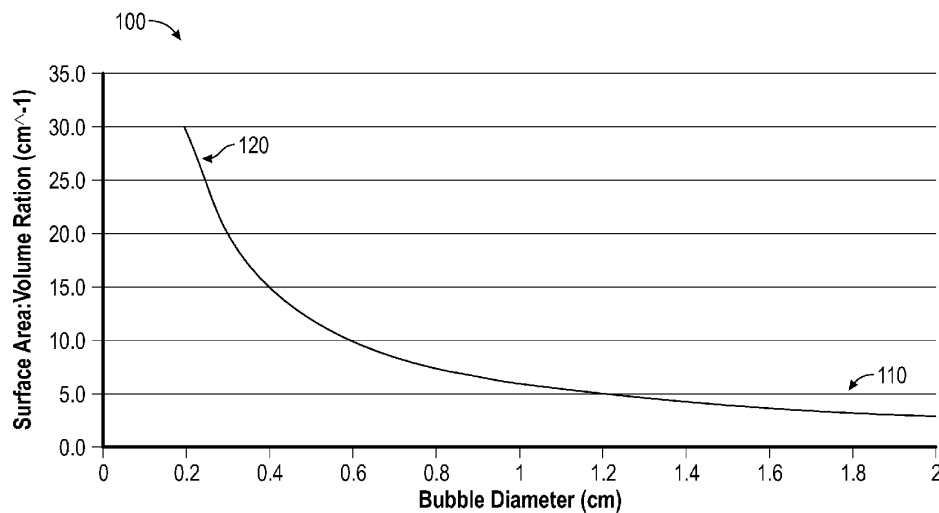


FIG. 1

(57) Abstract: A reactor system includes a reactor vessel configured to contain a process fluid, and a sparger assembly that operably coupled to the reactor vessel and configured to supply a mixture of a gas and a recirculated process fluid to the reactor vessel. The sparger assembly includes a plurality of sparger chambers. Each sparger chamber includes a process fluid conduit fluidly coupled to a process fluid return of the reactor vessel via a process fluid inlet, wherein the process fluid inlet has a first block and bleed valve assembly. Each sparger chamber includes a sparger conduit fluidly coupled to the process fluid conduit and a sparger disposed within the sparger conduit and fluidly coupled to a gas source via a gas inlet. Each sparger chamber also includes a process fluid-gas mixture outlet that fluidly couples the sparger conduit to a sparger outlet of the reactor vessel.

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