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(54) Title: FLUID BED REACTOR

(57) Abstract: Fluidized bed reactor systems for producing high purity silicon-coated particles are disclosed. A vessel has an outer wall, an insulation layer inwardly of the outer wall, at least one heater positioned inwardly of the insulation layer, a removable concentric liner inwardly of the heater, a central inlet nozzle, a plurality of fluidization nozzles, at least one cooling gas nozzle, and at least one product outlet. The system may include a removable concentric sleeve inwardly of the liner. In particular systems the central inlet nozzle is configured to produce a primary gas vertical plume centrally in the reactor chamber to minimize silicon deposition on reactor surfaces.



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