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METHOD OF RECYCLING FLUORINE USING AN ADSORPTION PURIFICATION PROCESS

ABSTRACT OF THE DISCLOSURE

A method and apparatus is disclosed for producing fluorine by providing a contained fluorine precursor source located proximate to or remotely from an adsorbent bed, optionally in a replaceable unit that may be a replaceable module comprising both the fluorine source and the adsorbent bed. Fluorine derived preferably from a nitrogen trifluoride source and used to remove deposited silicon-containing impurities in reaction chambers is reclaimed from an adsorbent bed, and made available to the reaction chamber as a supplemental fluorine source to reduce the total required amount of nitrogen trifluoride source gas. The separation column adsorbent is regenerated in cyclical intervals using a reverse flow of inert gas.

Fig. 2