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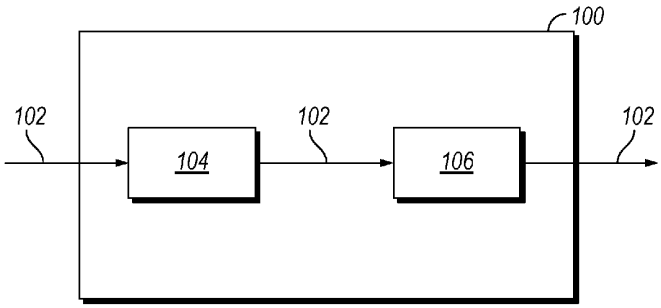


FIG. 1

(57) Abstract: A method for improving lifespan of a methane oxidation catalyst employed in a methane reduction step. The method comprises: providing a feed gas stream (102) comprising methane (CH4) and at least one sulfur-containing compound to a methane abatement unit (100) comprising a guard bed (104) upstream of a methane oxidation bed (106). The guard bed (104) comprises hopcalite to capture an amount of the at least one sulfur-containing compound from the feed gas stream (102), and the methane oxidation bed (106) comprises a methane oxidation catalyst to remove an amount of the methane.

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