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(54) Title: REMOVAL OF ATMOSPHERIC POLLUTANTS FROM GAS, RELATED APPARATUS, PROCESSES AND USES THEREOF

(57) Abstract: Methods related generally to the removal of atmospheric pollutants from the gas phase, are provided, as well as related apparatus, processes and uses thereof. A single-stage air scrubbing apparatus is provided that includes at least one reaction vessel, at least one introduction duct, and a turbulence component, wherein a residence time is sufficient to allow the conversion of at least one atmospheric pollution compound to at least one other compound, molecule or atom. In some embodiments, the at least one atmospheric pollution compound comprises nitrogen oxide, sulfur oxide or a combination thereof. Additionally, methods of removing atmospheric pollution compounds from a waste gas stream are disclosed that include introducing a waste gas stream and at least one additional gas stream, mist stream, liquid stream or combination thereof into a single-stage air scrubbing apparatus at a flow rate sufficient to allow for conversion of the at least one atmospheric pollution compound.