Claims

1. A method for protecting a target pump interior, the method comprising:

providing a target pump inlet with an inlet manifold and a target pump outlet with an exhaust line by attaching the inlet manifold to the target pump inlet and attaching the exhaust line to the target pump outlet;

exposing the target pump interior to sequential self-saturating surface reactions by sequential inlet of reactive gases via the inlet manifold into the target pump interior and outlet of reaction residue via the exhaust line while the target pump is kept running; and

detaching the inlet manifold from the target pump inlet and detaching the exhaust line from the target pump outlet.

2. The method of claim 1, comprising pumping reaction residue and purge gas from the target pump interior by a vacuum pump attached to the exhaust line.

3. The method of claim 1, comprising providing a required processing temperature by keeping the target pump running without using other heating means.

4. The method of claim 1, wherein the inlet manifold comprises one or more in-feed lines with their controlling elements controlled by a computer-implemented control system.

5. The method of claim 1, comprising forming a flow channel via target pumps placed in a row, and providing simultaneous protection of the interiors of the target pumps by using the flow channel.

6. The method of claim 5, comprising forming the flow channel by attaching the exhaust line of a previous pump to a pump inlet of the following pump in the row.

7. The method of claim 1, comprising exposing the target pump interior to sequential self-saturating surface reactions within a temperature range extending from ambient temperature to 150°C.

8. The method of claim 1, wherein the target pump is a vacuum pump.

9. A method for protecting a target pump interior, the method comprising:

providing a target pump inlet with an inlet manifold and a target pump outlet with an exhaust line by attaching the inlet manifold to the target pump inlet and attaching the exhaust line to the target pump outlet;

exposing the target pump interior to sequential self-saturating surface reactions by sequential inlet of reactive gases via the inlet manifold into the target pump interior and outlet of reaction residue via the exhaust line while the target pump is not running; and

detaching the inlet manifold from the target pump inlet and detaching the exhaust line from the target pump outlet.

10. An apparatus for protecting a target pump interior, comprising:

an inlet manifold designed to be attached to a target pump inlet; and

an exhaust line designed to be attached to a target pump outlet, the apparatus, when being used, carrying out the method as defined in claim 1.

11. The apparatus of claim 10, wherein the apparatus, when being used, is configured to expose the target pump interior to sequential self-saturating surface reactions by sequential inlet of reactive gases via the inlet manifold into the target pump interior and outlet of reaction residue via the exhaust line while the target pump is kept running.

12. The apparatus of claim 10, wherein the inlet manifold comprises precursor vapor and purge gas in-feed lines and their controlling elements.

13. The apparatus of claim 10, wherein the exhaust line comprises a vacuum pump.

14. The apparatus of claim 10, wherein the inlet manifold comprises a target pump-specific attachment part configured to attach the inlet manifold into the target pump inlet.

15. The apparatus of claim 10, wherein the apparatus is mobile.

16. The method of claim 1, wherein the method is implemented by a mobile pump protection apparatus comprising the inlet manifold and exhaust line.