CLAIMS

1. A method of optimising operating conditions in an abatement apparatus configured to treat an effluent stream containing perfluorinated compound (PFC) from a processing tool, said method comprising:

changing an operating parameter from an initial operating parameter to an adjusted operating parameter which controls an operating condition comprising one of an operating temperature and oxidising/reducing environment of said abatement apparatus of said abatement apparatus;

determining a change in a PFC concentration comprises determining an initial PFC concentration present in said exhaust stream and a resultant PFC concentration present in said exhaust stream in response to said adjusted operating parameter; and

determining whether to retain said operating parameter based on said change in said PFC concentration, wherein, when said adjusted operating parameter increases said operating temperature and said resultant PFC concentration is below said initial PFC concentration, but said resultant PFC concentration is above a threshold concentration, said determining comprises retaining said adjusted operating parameter.

2. The method of Claim 1, wherein, when said adjusted operating parameter decreases said operating temperature and said resultant PFC concentration is above said initial PFC concentration, but said resultant PFC concentration is above said threshold concentration, said determining comprises one of rejecting said adjusted operating parameter and preventing further changing of said operating parameter to decrease said operating temperature, preferably wherein, when said adjusted operating parameter increases said operating temperature and said resultant PFC concentration is below said initial PFC concentration, but is below said threshold concentration, said determining comprises one of rejecting said adjusted operating parameter and preventing further changing of said operating parameter to increase said operating temperature, preferably wherein, when said adjusted operating parameter decreases said operating

temperature and said resultant PFC concentration is above said initial PFC concentration, but is below said threshold concentration, said determining comprises retaining said adjusted operating parameter.

3. The method of any preceding claim, wherein said abatement apparatus comprises an abatement chamber and said operating parameter comprises at least one of a power supplied to heat said abatement chamber, a plasma supplied to said abatement chamber and a oxidant/fuel amount supplied to said abatement chamber, preferably wherein, when said operating parameter comprises said oxidant/fuel amount, said changing comprises increasing said oxidant/fuel amount and said resultant PFC concentration is above said initial PFC concentration, said determining comprises reducing said oxidant/fuel amount while said resultant PFC concentration passes through a minimum value, or wherein, when said operating parameter comprises said oxidant/fuel amount, said changing comprises increasing said oxidant/fuel amount, said resultant PFC concentration is above said initial PFC concentration and said resultant PFC concentration is above said threshold amount, said determining comprises reducing said oxidant/fuel amount while said resultant PFC concentration passes through a minimum value, or wherein, when said operating parameter comprises said oxidant/fuel amount, said changing comprises decreasing said oxidant/fuel amount and said resultant PFC concentration is below said initial PFC concentration, said determining comprises reducing said oxidant/fuel amount while said resultant PFC concentration passes through a minimum value.

4. The method of claim 3, wherein, when said operating parameter comprises said oxidant/fuel amount, said changing comprises decreasing said oxidant/fuel amount, said resultant PFC concentration is below said threshold concentration and said resultant PFC concentration is less than said initial PFC concentration, said determining comprises reducing said oxidant/fuel amount while said resultant PFC concentration passes through a minimum value.

5. The method of any one of claims 2 to 4, wherein said rejecting comprises changing said operating parameter back to said initial operating parameter, and/or wherein said rejecting comprises changing said operating parameter to a value between said initial operating parameter and said adjusted operating parameter, and/or wherein, when said operating parameter comprises said oxidant/fuel amount and said abatement apparatus is supplied by an enriched air source augmented by at least one of an oxygen and nitrogen source, said changing comprises adjusting at least one of said oxygen and nitrogen source to adjust said oxidant/fuel amount.

6. The method of any preceding claim, comprising iteratively repeating said steps of changing and determining.

7. The method of any preceding claim, wherein said determining comprises determining said initial PFC concentration in response to an indication being received which indicates that PFC is present in said effluent stream.

8. The method of any preceding claim, comprising identifying a PFC concentration profile of a processing cycle prior to said changing.

9. The method of claim 8, comprising, when said PFC concentration profile deviates by greater than a maximum deviation amount, said changing occurs in subsequent processing cycles.

10. The method of claim 8 or 9,comprising, when said PFC concentration profile deviates by greater than said maximum deviation amount, selecting a time within each processing cycle to determine said change in said PFC concentration present in said exhaust stream.

11. An abatement apparatus configured to treat an effluent stream containing PFC from a processing tool, comprising:

a controller operable to change an operating parameter according to any preceeding claim;

a sensor operable to determine a change in a PFC amount present in an exhaust stream of said abatement apparatus, wherein said controller is operable to determine whether to retain said operating parameter based on said change in said PFC amount present in said exhaust stream determined by said sensor.