CLAIMS

1. A nozzle (50; 50B) for conveying a plasma stream from a plasma generator to a reaction chamber, said nozzle comprising:

a conduit extending between

an inlet (51A) arranged to receive said plasma stream and

an outlet (53B) arranged to fluidly couple with said reaction chamber, said plasma stream being conveyed by said conduit between said inlet and said outlet in an axial direction, characterised in that ~~wherein~~ said nozzle is thermally-conductive and is arranged to receive liquid water and to use the hot temperature at which the nozzle (50) is running to convert liquid water into water vapour ~~for heating by said nozzle~~, said nozzle having

a plurality of ~~at least one~~ aperture(s) (54B) therein, said aperture(s) being positioned circumferentially around at least one of said nozzle and said conduit and arranged to deliver said ~~heated~~ water vapour in said axial direction for mixing with said plasma stream (90).

2. The nozzle of claim 1, wherein said conduit is defined by a wall (52) defining said aperture(s) therein and said aperture(s) ~~is~~ are arranged to deliver said ~~heated~~ water vapour into said conduit for mixing with said plasma stream when transiting therethrough.

3. The nozzle of claim 1 or 2, wherein said aperture(s) ~~is~~are arranged to deliver said ~~heated~~ water vapour for mixing with said plasma stream when transiting into said reaction chamber.

4. The nozzle of any preceding claim, wherein said aperture(s) ~~is~~are orientated to deliver said ~~heated~~ water vapour axially ~~at least one of radially and tangentially~~ into at least one of said conduit and said reaction chamber.

~~5. The nozzle of any preceding claim, wherein said aperture is orientated to deliver said heated water axially into at least one of said conduit and said reaction chamber.~~

~~6. The nozzle of any preceding claim, comprising a plurality of said apertures.~~

~~7. The nozzle of claim 6, wherein said plurality of said apertures are positioned circumferentially around at least one of said nozzle and said conduit.~~

~~8. The nozzle of claim 6 or 7, wherein said plurality of said apertures are fluidly coupled with a gallery concentrically surrounding said conduit, said gallery being arranged to receive said water for delivery to said plurality of said apertures.~~

~~9. The nozzle of claim 8, wherein said gallery comprises an inlet for receiving said water.~~

~~10.~~5. The nozzle of any preceding claim, wherein said conduit comprises a restriction operable to generate turbulent flow to mix said ~~heated~~ water vapour with said plasma stream.

~~11. The nozzle of any preceding claim, wherein said water comprises water droplets.~~

~~12.~~6. The nozzle of any preceding claim, wherein said inlet is arranged to receive said plasma stream together with an effluent stream.

~~13. The nozzle of any preceding claim, comprising a process inlet arranged to deliver said effluent stream to said inlet.~~

~~14.~~7. A plasma abatement apparatus comprising the nozzle as claimed in any ~~proceeding~~ preceding claim.

~~15.~~8. A method for ~~comprising~~:

conveying a plasma stream from a plasma generator to a reaction chamber using a nozzle according to claims 1 to 6, ~~said nozzle comprising a conduit extending in an axial direction between an inlet arranged to receive said plasma stream and an outlet arranged to fluidly couple with said reaction chamber, wherein said nozzle is thermally conductive and~~ said method comprises

heating ~~said~~ liquid water with said nozzle to convert the liquid water into water vapour, ~~said nozzle having at least one aperture therein~~ and ~~said method comprises~~

delivering said ~~heated~~ water vapour through said plurality of aperture~~s~~ in said axial direction for mixing with said plasma stream.