CLAIMS

1. An electrolytic brush assembly comprising:

a handle assembly having an electrical connection to receive an electrical cable;

a shroud extending from the handle assembly, the shroud having an aperture at a distal end thereof;

a brush connecting assembly for releasably connecting a brush to the handle assembly whereby the brush extends through the aperture of the shroud, wherein the handle assembly comprises an adjustment sub-assembly for selectively moving the brush connecting assembly and a brush connected thereto relative to the handle assembly and the aperture of the shroud;

a sensor configured to sense any one or more input conditions, selected from: a temperature of a brush connected to the connecting assembly, an amount of fumes contained in a volume defined by the shroud, electric current flowing through the brush, electric voltage developed across the brush, pressure source, flow parameter and operator input setting; and

an electrolytic fluid delivery assembly, whereby electrolytic fluid from an external source or reservoir is delivered to the proximity of an electrolytic brush by a pressure source, wherein the electrolytic fluid delivery assembly further comprises a fluid controller configured to automatically control a rate of electrolytic fluid delivery to the brush in response to the one or more input conditions sensed by the sensor.

2. An electrolytic brush assembly according to claim 1 wherein the adjustment sub-assembly comprises:

a sheath;

a rod slidably received within the sheath, the rod being connected to the brush connecting assembly; and

an actuator for moving the rod within the sheath, thereby moving the brush connecting assembly and a brush connected thereto relative to the handle assembly and the aperture of the shroud.

3. An electrolytic brush assembly according to claim 2 wherein the actuator comprises a rotatable sleeve having an inner thread functionally connected to the rod, whereby rotation of the rotatable sleeve causes linear movement of the rod within the sheath, thereby moving the brush connecting assembly and a brush connected thereto relative to the handle assembly and the aperture of the shroud.

4. An electrolytic brush assembly according to any one of claims 1 to 3 wherein the brush is releasably connectable to the brush connecting assembly by a quick release mechanism.

5. An electrolytic brush assembly according to claim 4 wherein the quick release mechanism comprises a female quick-connect coupler for receiving an end of the brush, the female quick-connect coupler comprising an outer sleeve slidable relative to an inner body, the outer sleeve being biased in a direction in which the brush is gripped within the female quick-connect coupler, the female quick-connect coupler releasing the brush when the outer sleeve is urged in an opposite direction.

6. An electrolytic brush assembly according to claim 5 wherein the shroud comprises an obstruction, the obstruction being arranged to contact the outer sleeve of the female quick-connect coupler upon the brush connecting assembly being moved towards the aperture of the shroud thereby urging the outer sleeve in the opposite direction and releasing the brush from the female quick-connect coupler.

7. An electrolytic brush assembly according to any one of claims 1 to 6 wherein the handle assembly further comprises a pistol grip handle.

8. An electrolytic brush assembly according to any one of claims 1 to 7 wherein a brush connected to the connecting assembly is fluidly connected to the handle assembly for receiving a fluid from the handle assembly, the fluid being deliverable to filaments of the brush during operation.

9. An electrolytic brush assembly according to any one of claims 1 to 8 wherein a volume defined by the shroud is fluidly connected to conduits in the handle assembly, wherein the conduits are fluidly connectable to an external extraction pump, thereby allowing fumes created within the volume to be extracted during operation.

10. An electrolytic brush assembly according to claim 2 further comprising:

at least one brush extent sensor for sensing an extent to which a brush connected to the brush connecting assembly extends through the aperture of the shroud;

a driver for driving the actuator; and

a controller for controlling the driver based upon input from the at least one brush extent sensor.

11. An electrolytic brush assembly according to claim 1 wherein the fluid controller includes an anti-siphon module connected to the external source or reservoir.

12. An electrolytic brush assembly according to any one of claims 1 to 11 wherein the fluid controller varies the rate of electrolytic fluid delivery so as to maintain constant a calculation derived from the value of one or more input conditions.

13. An electrolytic brush assembly according to any one of claims 1 to 12 wherein, in response to the electrolytic brush assembly being switched off, the fluid controller reverses the rate of electrolytic fluid delivery to the brush.

14. An electrolytic brush assembly according to any one of claims 1 to 13 wherein, in response to the electrolytic brush assembly being switched on, the pressure source pressurises the electrolytic fluid delivery assembly for a finite period.

15. An electrolytic brush assembly comprising:

a handle assembly;

a shroud extending from the handle assembly, the shroud having an aperture at a distal end thereof;

a brush releasably connected to the handle assembly and extending through the aperture of the shroud;

a sensor configured to sense any one or more input conditions, selected from: a temperature of a brush connected to the connecting assembly, an amount of fumes contained in a volume defined by the shroud, electric current flowing through the brush, electric voltage developed across the brush, pressure source, flow parameter and operator input setting;

an electrolytic fluid delivery assembly whereby electrolytic fluid from an external source is delivered via a conduit to the proximity of an electrolytic brush by a pressure source;

wherein the handle assembly comprises an adjustment sub-assembly for selectively moving the brush relative to the handle assembly and the aperture of the shroud; and

wherein the electrolytic fluid delivery assembly further comprises a fluid controller configured to automatically control a rate of electrolytic fluid delivery to the brush in response to the one or more input conditions sensed by the sensor.

16. An electrolytic brush assembly according to claim 15 wherein the fluid controller varies the rate of electrolytic fluid delivery so as to maintain constant a calculation derived from the value of one or more input conditions.

17. An electrolytic brush assembly according to claim 15 or claim 16 wherein, in response to the electrolytic brush assembly being switched off, the fluid controller reverses the rate of electrolytic fluid delivery to the brush.