deliver microwave energy into the treatment region, and a conduit for conveying liquefied fat away from the treatment region; and a suction pump connected to the conduit; a detector arranged to detect forward microwave power delivered to the probe; and a controller for adjusting the controllable power level of microwave radiation, wherein the detector is arranged to detect microwave power reflected back from the treatment region; the controller is arranged to select an energy delivery profile from a plurality of predetermined energy delivery profiles based on changes in the detected reflected microwave power based on the detected forward and reflected microwave power to deliver microwave energy according to a predetermined energy delivery profile; and the apparatus further comprises: a variable attenuator controlled by the controller for varying the amplitude of the microwave radiation from the microwave energy source according to the selected energy delivery profile; and a switch controlled by the controller for modulating the microwave radiation from the microwave energy source to enable pulsed or continuous wave operation according to the selected energy delivery profile, wherein the plurality of predetermined energy delivery profiles include energy delivery profiles wherein the frequency of the microwave radiation and the controllable power level are selected such that the emitted microwave radiation field automatically adopts a first configuration when emitted into fat and a second configuration when emitted into blood, the microwave energy delivered by first configuration being for liquefying the fat and the microwave energy delivered by the second configuration being for coagulating the blood.

Herein, microwave radiation means electromagnetic radiation having a frequency greater than 300 MHz, e.g. between 1 GHz and 300 GHz. In particular embodiments, narrower frequency bands may be used. Thus, microwave radiation may also mean electromagnetic radiation having a frequency within any one or more of the following bands: 2.4 GHz to 2.5 GHz, 5.725 GHz to 5.875 GHz, 14 GHz to 14.5 GHz, 24 GHz to 24.25 GHz, 30 GHz to 32 GHz, 45 GHz to 47 GHz, 60 GHz to 65 GHz, and 74 GHz to 78 GHz. Even more specifically, microwave radiation may also mean electromagnetic radiation having a spot frequency of any one of more of the following frequencies: 2.45 GHz, 5.8 GHz, 14.5 GHz, 24 GHz, 31 GHz, 46 GHz and 61.25 GHz.

The microwave energy source may be any device or group of components capable of delivering a stable supply of microwave radiation. Preferably the source includes a stable oscillator (e.g. voltage controlled oscillator or a dielectric resonator oscillator) whose signal is amplified by a suitable power amplifier (e.g. one or more MMIC amplifiers, an arrangement of GaAs or GaN devices or the like). The oscillator may include a phase locked loop to minimise drift in the output frequency. The source may include a variable attenuator connected between the oscillator and the amplifier to control the output power level. A switch, e.g. a PIN diode switch, may be connected between the oscillator and the amplifier to permit the source signal to be modulated, e.g. to operate in a pulsed fashion or another modulation format, i.e. monopulses, ramps, etc. If the variable attenuator is suitably responsive, it may also perform the function of the switch.