

CLAIMS

1. A bronchoscope (300) comprising:

a body (302); and

5 a flexible instrument cord (304) for non-percutaneous insertion to a patient's lungs, the instrument cord (304) extending from the body (302) and having a longitudinally extending hollow instrument channel (314) formed therethrough, wherein the body (302) includes:

10 a power input port (305) that is connectable to receive microwave energy, and

an optical port arranged to receive optical signals from a distal end of the instrument cord (304), and

15 wherein the instrument cord (304) comprises a coaxial transmission line (316) formed around the instrument channel (314), the coaxial transmission line (316) being connected to the power input port (305) to convey microwave energy to the distal end of the instrument cord (304).

20 2. A bronchoscope (300) according to claim 1 having a radiator (306) mounted at a distal end of the instrument channel (314), the radiator (306) being electrically connected to the coaxial transmission line (316) to receive microwave energy therefrom and emit a microwave field.

25 3. A bronchoscope (300) according to claim 2, wherein the radiator (306) comprises any one of:

an expandable balloon (334),

a radially expanding tube (340),

30 a forceps structure (350), and

a paddle structure (364).

4. A bronchoscope (300) according to any one of claims 1 to 3, wherein the body (302) includes a fluid input port, the
35 fluid input port being in communication with the instrument channel (314).

5. A bronchoscope (300) according to any one of claims 2 to 4, wherein the body (302) includes a control actuator (312) connected to one or more guide wires (332), the guide wires (332) extending through the instrument cord (304) to the radiator (306), wherein the control actuator (312) is operable to move the guide wires (332) within the instrument cord (304) to control movement of the radiator (306).

6. A bronchoscope (300) according to any one of claims 1 to 5, wherein the body (302) includes an illumination port (311), and wherein the instrument cord (304) including one or more optical channels (326) in optical communication with the illumination port for conveying an illumination signal to the distal end thereof to illuminate a treatment region.

7. A bronchoscope (300) according to claim 6 including a light source (310) mounted to the body (302) to generate the illumination signal.

8. A bronchoscope (300) according to any one of claims 1 to 7 including an imaging element for conveying an imaging signal to permit visualisation of a treatment region at the distal end of the instrument cord (304).

9. A bronchoscope (300) according to claim 8, wherein the imaging element includes a fibrescope comprising a bundle of optical fibres.

10. A bronchoscope (300) according to claim 8, wherein the imaging element comprises an image sensor mounted at the distal end of the instrument cord (304) and a communication cable for conveying a signal from the image sensor to the proximal end of the instrument.

11. A bronchoscope (300) according to any one of claims 1 to 10 including a temperature sensor (374) at the distal end thereof.

5 12. An electrosurgical apparatus for delivering microwave energy into lung tissue, the electrosurgical apparatus comprising:

 a generator for generating microwave energy; and

 a bronchoscope (300) according to any one of claims 1 to

10 11,

 wherein the power input port (305) is connected to the generator to convey the microwave energy to the coaxial transmission line (316).

15 13. An electrosurgical apparatus according to claim 12, wherein the generator is arranged to pulse the microwave energy with a duty cycle between 1% and 50%.