The claims.

1. A system for interstitial laser therapy comprising:

a device for interstitial laser therapy comprising:

an optical waveguide having an optical output end; and,

an optical diffuser positioned over the optical output end of the optical waveguide, wherein the optical diffuser is provided with one or more optical diffuser apertures; and,

an irrigation tube positioned over at least part of the optical waveguide, the irrigation tube able to direct a cooling fluid to flow out of an end of the irrigation tube, wherein the optical diffuser is positioned internal to at least part of the irrigation tube.

2. The system of claim 1, wherein the optical diffuser is positioned over at least part of the irrigation tube.

3. The system of any one of claims 1 to 2, wherein the optical diffuser is fixed to at least part of the irrigation tube.

4. The system of any one of claims 1 to 3, wherein the cooling fluid is directed to flow inside of the optical diffuser.

5. The system of any one of claims 1 to 4, wherein the cooling fluid flows out of the optical diffuser via at least the one or more optical diffuser apertures.

6. The system of any one of claims 1 to 5, wherein the cooling fluid is input into the irrigation tube and directed to flow out of the end of the irrigation tube.

7. The system of any one of claims 1 to 6, wherein the cooling fluid is directed to flow outside of the optical diffuser.

8. The system of any one of claims 1 to 7, further comprising a fluid guide tube positioned over at least part of the optical diffuser.

9. The system of claim 8, wherein the fluid guide tube is positioned wholly over the optical diffuser.

10. The system of any one of claims 8 to 9, wherein the fluid guide tube is positioned over at least part of the irrigation tube.

11. The system of any one of claims 8 to 10, wherein the fluid guide tube is provided with one or more fluid guide tube apertures.

12. The system of claim 11, wherein the cooling fluid flows out of or into the fluid guide tube via at least the one or more fluid guide tube apertures.

13. The system of any one of claims 8 to 12, wherein the cooling fluid flows out of at least a distal end of the fluid guide tube.

14. The system of any one of claims 1 to 13, further comprising an outer tube.

15. The system of claim 14, wherein the outer tube is provided with one or more outer tube apertures.

16. The system of claim 15, wherein the cooling fluid flows out of the outer tube via at least the one or more outer tube apertures.

17. The system of any one of claims 14 to 16, wherein return cooling fluid flows along the inside of the outer tube.

18. The system of any one of claims 14 to 17, wherein the outer tube is used for delivering the device for interstitial laser therapy to a treatment region.

19. The system of any one of claims 1 to 13, wherein the optical diffuser is an outer tube.

20. The system of any one of claims 14 to 19, wherein the outer tube includes or is attached to a trocar.

21. The system of claim 20, wherein at least an end portion of the outer tube and/or the trocar is transparent or semi-opaque.

22. The system of any one of claims 1 to 21, wherein a laser ablation zone is limited in extent by the cooling fluid exiting the irrigation tube.

23. The system of any one of claims 1 to 21, wherein a laser ablation zone is limited in longitudinal extent to forward of an end of the irrigation tube towards an end of the device for interstitial laser therapy.

24. The system of any one of claims 1 to 21, wherein a longitudinal length of a laser ablation zone is able to be changed by adjusting a position of the irrigation tube and/or the device for interstitial laser therapy relative to the position of a distal end of the system along a longitudinal axis.

25. The system of any one of claims 1 to 24, wherein a fixed power of laser light is transmitted in the optical waveguide and a rate of ablation is controlled by controlling a flow of the cooling fluid.

26. The system of any one of claims 1 to 24, wherein a fixed flow of cooling fluid is provided in the irrigation tube and a rate of ablation is controlled by controlling a power of laser light transmitted in the optical waveguide.

27. The system of any one of claims 1 to 25, wherein the flow of cooling fluid is controlled by controlling a driving pump that is pumping the cooling fluid, or by controlling a flow regulator in a fluid line of the cooling fluid.

28. The system of any one of claims 25 to 27, wherein at least one temperature measurement from a temperature sensor provides a feedback parameter for controlling the power of laser light and/or the flow of the cooling fluid.

29. The system of any one of claims 14 to 21, further comprising a second fluid guide tube positioned between the fluid guide tube and the outer tube.

30. The system of claim 29, wherein the second fluid guide tube is provided with one or more second fluid guide tube apertures.

31. The system of claim 30, wherein the cooling fluid flows out of or into the second fluid guide tube via at least the one or more second fluid guide tube apertures.

32. The system of any one of claims 1 to 31, wherein the irrigation tube is a metal tube.

33. The system of claim 8, wherein the fluid guide tube is a PTFE (polytetrafluoroethylene) tube.

34. The system of any one of claims 1 to 33, wherein the device for interstitial laser therapy comprises a first temperature sensor.

35. The system of claim 34, wherein the device for interstitial laser therapy comprises a second temperature sensor, and the first temperature sensor and the second temperature sensor are adapted to measure a temperature difference.

36. The system of claim 20 and claim 35, wherein the trocar forms part of the first temperature sensor and is part of a thermocouple.

37. The system of claim 36, wherein an annular ring forms part of the second temperature sensor and is part of a second thermocouple.

38. The system of claim 37, wherein the annular ring is an annular metal ring.

39. The system of claim 38, wherein the annular metal ring is longitudinally positioned at or near a distal end of the optical diffuser or at or near a distal end of the irrigation tube.

40. The system of either claim 38 or 39, wherein the annular metal ring is positioned external to the optical diffuser.

41. The system of claim 14 and claim 38, wherein the annular metal ring is positioned external to or embedded within the outer tube.

42. The system of any one of claims 1 to 41, wherein the device for interstitial laser therapy is steerable.