

CLAIMS

1. A device, comprising:
 - an elongated body having a proximal end and a distal end opposite the proximal end, the elongated body extending along a central longitudinal axis;
 - a distal elongated body portion extending from the elongated body and distal to the elongated body along the central longitudinal axis, the distal elongated body portion located adjacent the distal end;
 - an optical fiber spaced from the central longitudinal axis and extending from the proximal end to the distal elongated body portion, the optical fiber being configured to transmit laser energy into a fluid causing a cavitation bubble to propagate a pressure wave; and
 - a fiber positioner at least partially circumferentially surrounding the optical fiber and at least partially circumferentially surrounding the distal elongated body portion, the fiber positioner spaced apart from and distal to the proximal end of the elongated body, the fiber positioner being translationally coupled to the distal elongated body portion such that the fiber positioner can move between a first position and a second position located distal to the first position, and the fiber positioner defining a shape that rotationally fixedly couples the fiber positioner to the distal elongated body portion such that the fiber positioner maintains a substantially fixed angle respective to the distal elongated body portion.
2. The device of Claim 1, wherein the optical fiber is fixedly coupled to the fiber positioner such that each of the optical fiber and the fiber positioner are translationally coupled and rotationally fixedly coupled to the distal elongated body portion.
3. The device of Claim 1, wherein the distal elongated body portion comprises an oval-shaped cross-sectional profile.
4. The device of Claim 1, wherein the distal elongated body portion comprises a longitudinal depression configured to rotationally fixedly couple the fiber positioner to the distal elongated body portion.
5. The device of Claim 4, wherein the longitudinal depression partially surrounds the optical fiber.

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6. The device of Claim 1, wherein the fiber positioner comprises a protrusion at least partially circumferentially surrounding the optical fiber.
7. The device of Claim 1, further comprising a balloon positioned along the distal elongated body portion, the balloon having an interior balloon surface and an exterior balloon surface, the balloon being configured to receive an inflation fluid to inflate the balloon such that the exterior balloon surface contacts a calcified lesion within a vasculature of a patient.
8. The device of Claim 7, wherein the fiber positioner comprises a distal face and a proximal face opposite the distal face, the proximal face and the distal face of the fiber positioner longitudinally located within the balloon.
9. The device of Claim 7,
wherein the fiber positioner comprises a distal face and a proximal face opposite the distal face, the proximal face of the fiber positioner distal to a proximal end of the balloon, and the distal face of the fiber positioner proximal to a distal end of the balloon.
10. The device of Claim 1, wherein the fiber positioner fully circumferentially surrounds the optical fiber.
11. The device of Claim 1, wherein the fiber positioner fully circumferentially surrounds the distal elongated body portion.
12. The device of Claim 3, wherein the fiber positioner comprises a protrusion at least partially circumferentially surrounding the optical fiber.
13. The device of Claim 4, wherein the longitudinal depression extends along a portion of a length of the distal elongated body portion.
14. The device of Claim 13, wherein the fiber positioner is configured to translate along the portion of the length of the distal elongated body portion along which the longitudinal depression extends.
15. The device of Claim 4, wherein the longitudinal depression extends along an entire length of the distal elongated body portion.

16. The device of Claim 4, wherein the fiber positioner comprises a protrusion at least partially circumferentially surrounding the optical fiber.
17. The device of Claim 5, wherein the longitudinal depression substantially prevents the optical fiber from rotating about the distal elongated body portion.
18. The device of Claim 1, wherein the fiber positioner comprises a marker band configured to indicate a location of the fiber positioner within a vasculature of a patient.
19. The device of Claim 1, further comprising:
 - a marker band at least partially surrounding the distal elongated body portion; and
 - a spring coupled to each of the marker band and the fiber positioner, the spring circumferentially surrounding the distal elongated body portion.
20. The device of Claim 19, wherein the marker band is located at a position selected from the group consisting of proximal to the fiber positioner, distal to the fiber positioner, and combinations thereof.