

12) The apparatus of claim 1 wherein each proximal face of said fiber of the second layer includes a diffuser to scatter laser light out of the row fiber.

13) The apparatus of claim 12, wherein the diffusers each comprise at least one of a random, two dimensional Bragg grating carved into the proximal face of said row fiber and a random, two dimensional undulations etched into a proximal face of each fiber of said row fiber.

14) The apparatus of claim 1 wherein said third layer is coupled optically and mechanically to said second layer.

15) The apparatus of claim 2 wherein said optical switching element comprises a refraction index matched transparent fluid.

16) The apparatus of claim 15 wherein said index matched transparent fluid is to be actuated by at least one of electrostatic force, an air compressor, and an electromechanical actuator, a piezoelectric bulk acoustic wave actuator.

17) The apparatus of claim 16 wherein said electromechanical actuator is one of a piezoelectric bimorph actuator,

an electret actuator, a MEMS actuator, a shape memory alloy actuator, a thermal mechanical actuator, a piezoelectric SAW actuator, a piezoelectric bulk acoustic wave actuator, a piezoelectric bimorph flexural acoustic wave actuator.

18) The apparatus of claim 17 wherein said piezoelectric SAW actuator comprises one of an inter-digitated drive, a SAW repeater, a plurality of inter-digitated transducers.

19) The apparatus of claim 17 wherein said piezoelectric bulk acoustic wave actuator comprises one of an inter-digitated drive, a bulk acoustic wave repeater, a plurality of inter-digitated transducers.

20) The apparatus of claim 17 wherein said piezoelectric flexural acoustic wave actuator comprises one of an inter-digitated drive, a bulk acoustic wave repeater, and a plurality of inter-digitated transducers.

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