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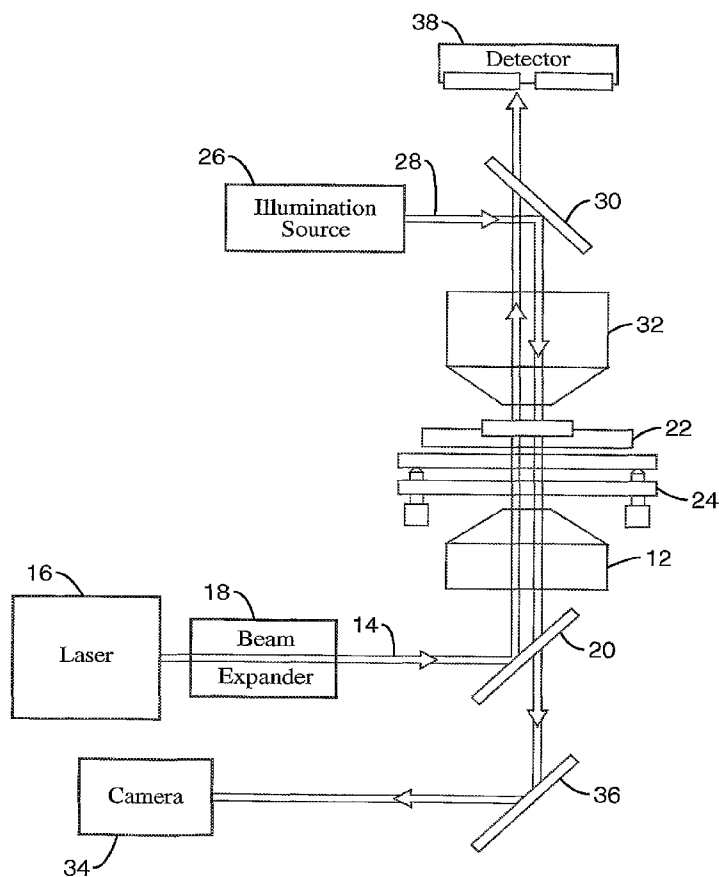
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(54) Title: ALIGNMENT, TRANSPORTATION AND INTEGRATION OF NANOWIRES USING OPTICAL TRAPPING



(57) Abstract: Individually trapping, transferring, and assembling high-aspect-ratio semiconductor nanowires into arbitrary structures in a fluid environment. Nanowires with diameters as small as 20 nm and aspect ratios of above 100 can be trapped and transported in three dimensions, enabling the construction of nanowire architectures which may function as active photonic devices. Moreover, nanowire structures can now be assembled in physiological environments. In one aspect, nanowires are positioned to direct light to remote samples, reducing exposure of the overall sample to intense source illumination. A tunable nanowire probe for subwavelength imaging is also described utilizing efficient second harmonic generation (SHG) whose optical frequency conversion allows implementing subwavelength microscopes.

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