



HAPTIC FEEDBACK WITH FIBER OPTIC SENSING

Most of the surgical interventions are performed via laparoscopic surgery. A hollow tube is inserted through the skin of a patient. Through this hollow tube, surgical tools are inserted toward the affected tissue. This technique results in a quick recovery and low scar tissue for the patient. However, the surgeon is not in direct contact with the tissue; doesn't know how tight to grip and thus creates unintentional damage.

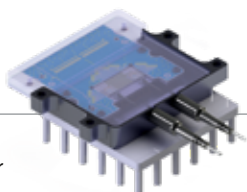
The OptiGrip is a surgical tool with Fiber Bragg Grating imbedded in the tip. These FBGs respond to the stress and strain in the pincher that are translated to haptic feedback on the handle of the tool. In-vivo experiments with this tool resulted 'feeling the heartbeat in the blood vessel through the handle bar'.

OptiGrip



The First Haptic Feedback Grasper

EFIgator



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