

INSERTION TOOL FOR INSPECTION

Abstract of the Disclosure

An insertion tool for inspection includes a tube with a flexible section having at least two joints for articulating the flexible section into different shapes, the flexible section selectively configurable between an unrigidized state and at least a first rigid state having a first non-linear shape. The tool includes an end effector coupled to the tube with a sensor head to direct a beam toward a target area to perform a profilometry operation. The tool includes a waveguide extending through the tube, to transmit the beam from an electromagnetic source to the end effector and transmit electromagnetic signals from the end effector to a profilometry detecting device, and an end effector actuator to move the beam at the target. The end effector is axially spaced from an insertion axis of the tool when the flexible section is in the first rigid state to obtain off-axis profilometry measurements at the target.

[Figure 4]