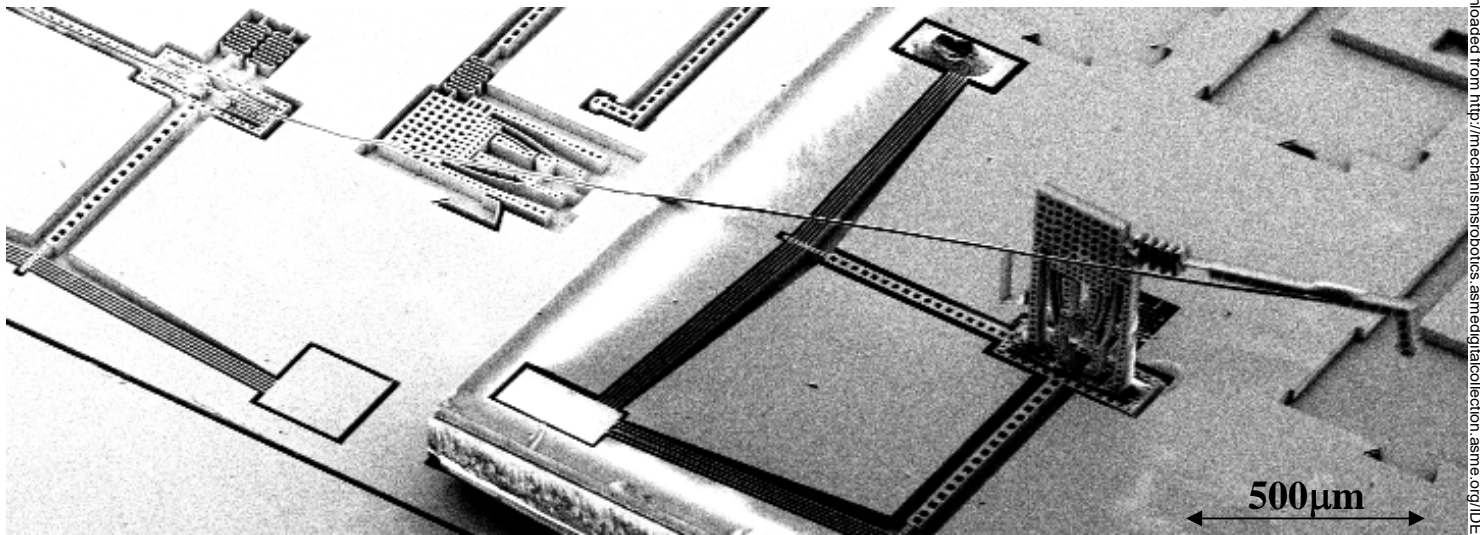


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Articulated Four Axis Microrobot

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The picture shows a unique MEMS robot. It is highly dextrous with four degrees of freedom (two in-plane and two out-of-plane) and has the largest work volume of $50\mu\text{m} \times 50\mu\text{m} \times 75\mu\text{m}$ amongst MEMS based positioners. The robot incorporates novel cable based transmission systems to couple in-plane actuators with out of plane bi-directional flexure joints. Constructed out of Deep Reactive Ion Etching and microassembly, this robot is designed to transmit upto 200mN of force along all four axes, precise to ten's of nanometers and configured to carry a variety of end-effectors such as Atomic Force Microscope probe tip arrays and microgrippers. The microrobot presents the dawn of next generation in top down manipulation systems.