

Parallel Robotic Manipulators and Their Applications

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Abstract - Due to the potential high rigidity, high accuracy, and high loading capacities of parallel manipulators, research and development of various parallel mechanism applications in engineering are now being performed more and more actively in every industrial field, and it is considered a key technology of robot applications in industry in the future.

In this talk, the rational of using parallel robots for parallel robotic machines is discussed and explained. A comparative study is carried out on some successful parallel robotic machines and conventional machine tools. Meanwhile, the latest research activities of parallel manipulators in the Laboratory of Robotics and Automation of UOIT are introduced, they are: parallel robotic machines, reconfigurable robotic manipulators, web-based remote manipulation as well as the applications of parallel manipulators in micro-motion device, MEMS (parallel robot based sensors), wearable power assist hip exoskeleton, and rescue robot.