

Abstract Submitted
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Improving Robotic Assembly of Planar High Energy Density Targets¹ D. DUDT, Bucknell University, L. CARLSON, N. ALEXANDER, K. BOEHM, GA — Increased quantities of planar assemblies for high energy density targets are needed with higher shot rates being implemented at facilities such as the National Ignition Facility and the Matter in Extreme Conditions station of the Linac Coherent Light Source. To meet this growing demand, robotics are used to reduce assembly time. This project studies how machine vision and force feedback systems can be used to improve the quantity and quality of planar target assemblies. Vision-guided robotics can identify and locate parts, reducing laborious manual loading of parts into precision pallets and associated teaching of locations. On-board automated inspection can measure part pickup offsets to correct part drop-off placement into target assemblies. Force feedback systems can detect pickup locations and apply consistent force to produce more uniform glue bond thickness, thus improving the performance of the targets. System designs and performance evaluations will be presented.

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