

SPACE PROPULSION SYMPOSIUM (C4)

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SUMMARY AND DEVELOPMENT IN RESEARCH ON HIGH-ENERGY LASER PROPULSION

Abstract

As one of most hopeful technologies that seem to be able to replace the traditional propelling types based on chemical propellants, laser propulsion has drawn more and more focus of scientists and engineers in space exploration fields in recent decades, because it has obvious advantages. Such advantages lies in that laser propelling system is easier to realize than other advanced propelling designs, and, the fast-and-high-power laser system, one of main subsystems of laser propelling system, is respectively more mature. In this article, the history and up-to-date research progress are generally introduced at first. And in the following part will show the main conclusion our research team has drawn, including theories in laser propulsion, general methods or principles in selection within laser parameter space, efficiency analyses of different propellants, laser absorbing target structures and general consideration on launching project with support of laser propulsion system.