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**Preliminary Study on Generating Condition of Laser Sustained Plasma using 1 kW CW Diode Laser** KOJI NISHIMOTO, MAMORU KUMITA, MAKOTO MATSUI, Shizuoka University — In the laser sustained plasma of conventional laser driven plasma wind tunnel, CO<sub>2</sub> laser have been used. However, the efficiency of is about 10 %. Recently, the development of diode laser is remarkable and the energy efficiency of it reaches nearly 80 % in laboratory stage. Therefore, in our research group, the generation of laser sustained plasma using diode laser is being tried. In this study, the generation threshold of it was numerically calculated. Assuming that focused laser diameter is 200  $\mu\text{m}$ , in the condition of the pressure of 0.1-1 MPa, it was deduced that the threshold of laser power is about 500 W.

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