



1. Title:	Development of High-peak, High-average-power LD Pumped Solid-State Laser System for EUV Generation
2. Full names of all authors:	Koji Tsubakimoto, Hidetsugu Yoshida, Hisanori Fujita, Masahiro Nakatsuka, Noriaki Miyanaga and Yasukazu Izawa

7. Abstract body:

We are developing kW class (5kHz, several J, 1-10ns) solid state laser system for EUV lithography. The Laser system consists of the fiber oscillator, regenerative amplifier and three amplifier stages. Main amplifier stage is constructed by eight amplifier modules pumped at 3.0kW by CW laser diode. Total pumping power is 24kW. Laser medium of the main amplifier module is Nd:YAG ceramic rod with 10mm diameter, 140mm long. We achieved at 1050W(duty 50%) output power. The repetition rate was 5kHz. The pulse width was 2.4ns. High order phase aberrations including the thermal lens effect is becoming a critical problem. The phase aberration disturbs the propagation of the laser light. We will attempt to insert the phase conjugation mirror into the main amplifier stage in order to compensation of the phase aberration.