[Document Title] Abstract

In laser annealing, uniformity of crystallization is to be secured regardless of a fluctuation in a laser output. In a laser annealing method of irradiating pulsed laser light on a non-single-crystal semiconductor film to apply annealing, energy control for the pulsed laser light is performed so that the maximum peak height of a pulse waveform of the laser light reaches a predetermined height, and the control can be performed by a laser annealing device including a laser oscillator (1) that outputs the pulsed laser light, an optical system (4) that leads the pulsed laser light to a non-single-crystal semiconductor film, a maximum peak height measurement unit that measures the maximum peak height of the pulsed laser light, and a control unit (8) that receives a measured result by the maximum peak height measurement unit, and controls an output energy of the pulsed laser light of the laser oscillator or a variable attenuator (2) that adjusts an attenuation rate of the pulsed laser so that the maximum peak height reaches the predetermined height.