LASER ANNEALING METHOD AND SEMICONDUCTOR DEVICE FABRICATING METHOD

ABSTRACT

When the second harmonic of a YAG laser is irradiated onto semiconductor films, concentric-circle patterns are observed on some of the semiconductor films. This phenomenon is due to the non-uniformity of the properties of the semiconductor films. If such semiconductor films are used to fabricate TFTs, the electrical characteristics of the TFTs will be adversely influenced. A concentric-circle pattern is formed by the interference between a reflected beam 1 reflected at a surface of a semiconductor film and a reflected beam 2 reflected at the back surface of a substrate. If the reflected beam 1 and the reflected beam 2 do not overlap each other, such interference does not occur. For this reason, a laser beam is obliquely irradiated onto the semiconductor film to solve the interference. The properties of a crystalline silicon film formed by this method are uniform, and TFTs which are fabricated by using such crystalline silicon film have good electrical characteristics.