

ABSTRACT

A laser annealing apparatus for annealing a silicon wafer placed on a wafer stage is disclosed which includes: a laser light source for generating a light beam; a first optical unit, configured to convert the light beam generated by the laser light source into a polarized light beam of a first type; and a second optical unit, including a light guiding element and a first reflecting element. The light guiding element is configured to make the polarized light beam of the first type incident on and reflected by a surface of the silicon wafer for a first time along a first optical path, and the light beam reflected from the surface of the silicon wafer is further reflected by the first reflecting element and is thereby incident on the surface of the silicon wafer for a second time along a second optical path symmetrical to the first optical path and reflected by the surface to the light guiding element.