A crystalline film production method and a crystalline film production apparatus

Abstract

The method comprises irradiation of an amorphous film layer formed on a substrate with 1 to 10 shots of a pulsed laser beam with a wavelength of 340 to 358 nm and an energy density of 130 to 240 mJ/cm^2 so that said amorphous film is heated and crystallized at a temperature not in excess of the crystalline melting point. The pulsed laser beam is preferably adjusted to have a pulse width of 5 to 100 ns, a frequency of 6 to 10 kHz, and a short axis width of 1.0 mm or less, and the pulsed laser beam is relatively scanned at a scanning speed of 50 to 1,000 mm/sec. Uniform and fine crystalline film with small variation in the crystal grain size can be efficiently produced from an amorphous film without causing damage to the substrate.

Fig. 1