A crystalline film production method and production apparatus

Abstract

Uniform and fine crystals can be efficiently formed during crystallization of an amorphous film.

An amorphous film layer (amorphous silicon film 6a) formed on a substrate 6 is irradiated with a continuous-wave laser beam 1a with a wavelength of 510 to 540 nm in the visible range so that said amorphous film is heated up to a temperature not in excess of the melting point to crystallize said amorphous film. It is preferable that the continuous-wave laser beam laser beam has a power density of 55 to 290 kW/cm^2 and a short axis of 100 μm or less. It is also preferable that the continuous-wave laser beam is relatively scanned at a speed of 50 to 1,000 mm/sec. A fine crystalline film with little variation in the crystal grain diameter can be produced efficiently from an amorphous film without causing damage to the substrate.

Fig. 1