

INNOVATIVE PRODUCTS | AUGUST 2006

Manufacture: Sawyer Technical Materials LLC

Quartz Growth

A hydrothermal quartz growth technique for manufacturing large-diameter wave plates and other kinds of polarizing optics from cultured quartz crystal has been developed by Sawyer Technical Materials LLC. The process uses X- rather than Z-plate seeds, because wave plates are typically X-cut orientations. Wave plates of up to 150 mm in diameter can be manufactured, providing a large light application surface. The hydrothermal growth process involves recrystallization from solution onto seed plates under high-temperature (350 °C), high-pressure (13,000 lb psi) conditions. Nutrient material is placed in the dissolving chamber of the autoclave, and quartz seed crystals are hung in the growing chamber.

"Quartz Growth." Photonics Spectra August 2006: