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Strengthening the Development System for Calcium Fluoride (CaF₂) Single Crystals

Tokuyama Corporation

Tokuyama Corporation (President: Shigeaki Nakahara; “Tokuyama”), a developer of calcium fluoride single crystals for use in semiconductor exposure equipment (stepper) lenses, will seek to strengthen its development system to boost market valuation and performance. Specifically, Tokuyama will transfer a battery of manufacturing equipment including single-crystal growth equipment currently installed in Tokuyama pre-commercial Laboratory to a vacant building at its Tokuyama Factory (Shunan City, Yamaguchi Prefecture), to which it will also add new equipment. Scheduled to begin following approval from appropriate government offices, the construction project is scheduled for completion this September. Total investment is expected to reach one billion yen.

Since its successful achievement in November 2002 of the growth of a CaF₂ single-crystal based on the Czochralski method (CZ method), Tokuyama has worked on various samples to develop and improve technologies for high-precision quality and stable production required for lens materials in stepper. As it expects to achieve quality levels suitable for practical application and stable production fairly soon, Research & Development Div. has shifted the project for new approach to trial commercialization phase. By strengthening its development system and improving production systems, Tokuyama plans to produce and supply approximately 300 lens blanks (discs used for lens production) annually.

Tokuyama will continue to advance production technologies in response to the needs of stepper manufacturers for calcium fluoride single crystals while exploring new applications of the crystal product by using its feature of high transparency and broad spectrum from infrared to deep-ultraviolet.