

## The growth of $\beta$ -BaB<sub>2</sub>O<sub>4</sub> ( $\beta$ -BBO) crystal fibers by the micro-pulling down technique.

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$\beta$ -BaB<sub>2</sub>O<sub>4</sub> is an interesting material for the generation of VUV sources. It has good physical properties such as a large birefringence, a wide transparent waveband (190 to 3500 nm), a low dispersion, and high damage thresholds. Moreover, BaB<sub>2</sub>O<sub>4</sub> is present in two crystalline solid phases usually indicated as  $\alpha$ -BaB<sub>2</sub>O<sub>4</sub> and  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> distinguished as the high-temperature phase and the low-temperature phase, respectively. The  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> is non-centrosymmetric and important for harmonic generation devices [1]. Traditionally, the crystals of  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> are grown both by top-seeded solution growth and Czochralski melt-growth methods. In this work, we obtain single-crystal fiber of  $\beta$ -BBO by micro-pulling down ( $\mu$ -PD) technique [2]. The crystal fibers are formed from supercooled melt [3], using oriented seed with 0.1 mm/min as pulling rate.

Further, characterizations by Optical microscopy and Raman spectroscopy have been performed to identify the crystal fibers quality.

### References

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