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Single-crystal diamond growth with sub-millisecond-pulsed discharge of microwave plasma[1] HIDEAKI YAMADA, AKIYOSHI CHAYAHARA, YOSHIAKI MOKUNO, AIST, Japan — Single-crystal diamond was homoepitaxially grown by pulse modulated microwave plasma chemical vapor deposition, where pulse-on time was varied into the order of sub-millisecond. Measurements of the optical emission spectra indicate remarkable increase of atomic hydrogen, which is an important radical to maintain the crystal quality. Preliminary growth was conducted and relatively higher growth rate than preceding works was obtained.

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