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Building 99, meeting room O3.112

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Super-nonlinear optical crystal $\text{KBe}_2\text{BO}_3\text{F}_2$

In this talk, the $\text{KBe}_2\text{BO}_3\text{F}_2$ (KBBF) crystal has been demonstrated to be a super-nonlinear optical crystal in the deep-UV region. Firstly, KBBF has excellent optical properties including a widest phase-matching wavelength region, widest temperature bandwidth and highest damage threshold in all nonlinear optical crystals. Secondly it has superior capability to produce deep-UV lasers by second harmonic generation. For example, it can produce 153nm with 0.5mW output power, more than 120mW 177.3nm as well as 191nm cw laser at mW level. Finally some important applications for deep-UV lasers are introduced especially in the advanced instrument, like the angle- and spin-resolved photoemission spectrometer and photon electronic emission microscope et.al.