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Plused Laser Deposition growth of iron chalcogenide with tunable structural and physical properties WANGDONG KONG, JUN MA, LEI YAN, HONG DING, Institute of Physics, CAS — Since the discovery of iron superconductor in 2008, plenty of spectroscopic experimental and theoretical works have been done to explore the mechanism of superconductivity. In parallel, much effort is devoted to thin film growth with the aim to fabricate high quality samples with tunable structural and physical properties, as well as for the development of new functional devices. Here we apply the Plused Laser Deposition (PLD) method to obtain iron chalcogenide superconductor thin films. By adjusting the growth parameters and procedure, we can modulate the structure and properties of the thin films. One of the main results is the enhancement of T_c . We are constructing a new system combining ARPES and PLD for in-situ measurements which will surely shed interesting light on the mechanism of superconductivity.

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