

## **PULSED LASER DEPOSITION TECHNIQUE FOR THE SYNTHESIS OF NANOSTRUCTURES**

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Pulsed laser deposition (PLD) technique has been extensively used to fabricate thin films of various materials. Good controllability of the deposition conditions is expected to be beneficial to the controlled growth of nanowires. Therefore, the effect of the PLD conditions on the structures of the deposited films or nanowires was investigated in this study. ZnO and Fe<sub>3</sub>O<sub>4</sub> were used as target materials. The ambient pressure, substrate temperature, and laser pulse power were varied resulting in the various structures such as continuous thin film, nanowires, and nanoparticles deposited on the substrates. Small window of conditions for the direct growth of nanowires was identified. On the other hand, for the continuous film, the texture of the film was found to be controllable. It is demonstrated that these films can be used as templates for the subsequent growth of nanowires in epitaxy with the textured films.