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ZnO nanostructures growth at low temperature from Zn powder and Zn Acetate MONICA MORALES, B.B. CLAFLIN, WALLY RICE, G.C. FARLOW, D.C. LOOK, Wright State University — In this work we report the synthesis of various types of ZnO nanostructures under two different approaches: Vapor Phase Transport process (VPT) using Zinc acetate as the source material, and simple thermal evaporation of Zinc powder (99.9%). Each process has specific growth parameters. ZnO nanostructures were synthesized on silicon and sapphire wafers at temperatures ranging from 360 ° C to 500 ° C. Comparison of Atomic Force Microscope (AFM) images and of Scanning Electron Microscope (SEM) images show that the precise control of the gas flow (O_2/Ar mixture), as well as the growth time, are key in the formation, size and shape of the nanostructures. Low Temperature Photoluminescence measurements indicate that the depositions are of very good quality.

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