

Abstract Submitted  
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**Growth and characterization of aligned ZnO nanorods** T. WILLIAMS, K. ZHANG, D. HUNTER, K. LORD, A.K. PRADHAN, Center for Materials Research, Norfolk State University — We report the growth of aligned ZnO nanostructures on pulsed-laser deposited ZnO epitaxial film-substrates synthesized by vapor transport of the evaporation of pure Zn metal powders followed by subsequent condensation. Remarkable arrangements of uniform ZnO nanorods were found on ZnO film by varying the synthesis conditions. The nanorods grow preferentially from a hexagonal ZnO base. High-density aligned nanorods of 60-100 nm diameter and 10-20  $\mu\text{m}$  in length grew at the center of the substrate over a large area. Structural and spectroscopic properties clearly indicate that the nanorods are of superior and defect-free in quality. The ZnO nanorods have also been grown on Si and sapphire substrates. Details of the results will be presented.

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