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planarization techniques for integrated waveguide detectors MICHAEL BUZBEE, DAVID LOMBARDO, ANDREW SARANGAN, QIWEN ZHAN, Electro-Optics Graduate Program, University of Dayton, Dayton, Ohio 45469, IMAD AGHA, Department of Physics and Electro-Optics Graduate Program, University of Dayton, Dayton, Ohio 45469 — Wafer curvature is a common complication during device processing. A minimal wafer curvature is critical when fabricating 3-dimensional integrated circuits. Chemical mechanical planarization (CMP) is a relatively new process used to planarize topographical surfaces. However, when removing small-scale topographical features CMP is limited by the amount of material to be removed and wafer curvature. We have developed a wet thermal oxidation planarization process to bypass the need for the CMP process. This oxidation process has been implemented in the development of a Si_3N_4 on Si, waveguide on photodetector device.

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