

Abstract Submitted
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MBE Growth for Qubit Devices ANTHONY MEGRANT, ALEX KOZHANOV, LUDWIG FEIGL, MARTIN WEIDES, JIAN ZHAO, YI YIN, JAMES WENNER, ANDREW CLELAND, CHRIS PALMSTROM, JOHN MARTINIS — A major component of the UCSB research program is to find and understand proper growth conditions and procedures for epitaxial Re and sapphire thin films. Separately, we are taking what we have learned from this research and applying it to develop growth-optimized procedures in our dedicated MBE chamber for qubit devices. I will report on important parameters that need to be adjusted to obtain optimum growth, some of which include: temperature, deposition rate and surface preparation. Measurement tools such as in-situ RHEED and ex-situ XRD and AFM are used to characterize the quality of the films, as well as the fabrication of resonators to measure the quality factor.

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