



Materials for Quantum Computing - How to build a full stack hardware solution for superconducting qubits.

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The field of quantum computing has grown at a fairly unexpected pace in the past decades. Superconducting quantum computing, in particular, has emerged as one of the leading platforms for building scalable, fault-tolerant quantum processors. However, the true challenge lies not only in identifying the most suitable qubits—those that exhibit long coherence times and low error rates—but also in overcoming the engineering complexities required for large-scale integration. In this talk, we will provide a comprehensive overview of the material platforms that are at the heart of superconducting quantum technologies. We will discuss the current state-of-the-art materials used in qubit fabrication, with a focus on their impact on coherence times, and overall device performance. Finally, we will outline a roadmap for building a full-stack hardware solution for superconducting quantum computing.

Keywords: Quantum Computing; Cryogenics; Superconducting;

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