

Abstract Submitted
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Fabrication of transmon qubits embedded in superconducting whispering gallery mode resonators¹ K. SERNIK, Z.K. MINEV, I.M. POP, L. FRUNZIO, R.J. SCHOELKOPF, M.H. DEVORET, Department of Applied Physics, Yale University — Superconducting whispering gallery mode resonators (WGMRs) can confine up to 98% of two high quality modes in lossless vacuum [APL 103, 142604]. We have fabricated new WGMR-based devices using standard lithography techniques and in which transmon qubits were integrated. The advantages of this transmon-resonator configuration are i) the possibility to perform a targeted study of thin-film quality factor across different methods and steps of fabrication and ii) precise control of the Hamiltonian parameters.

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