

Supplementary Figure for: High-Performance 4H-SiC Optomechanical Resonators in the Sideband-Resolved Regime

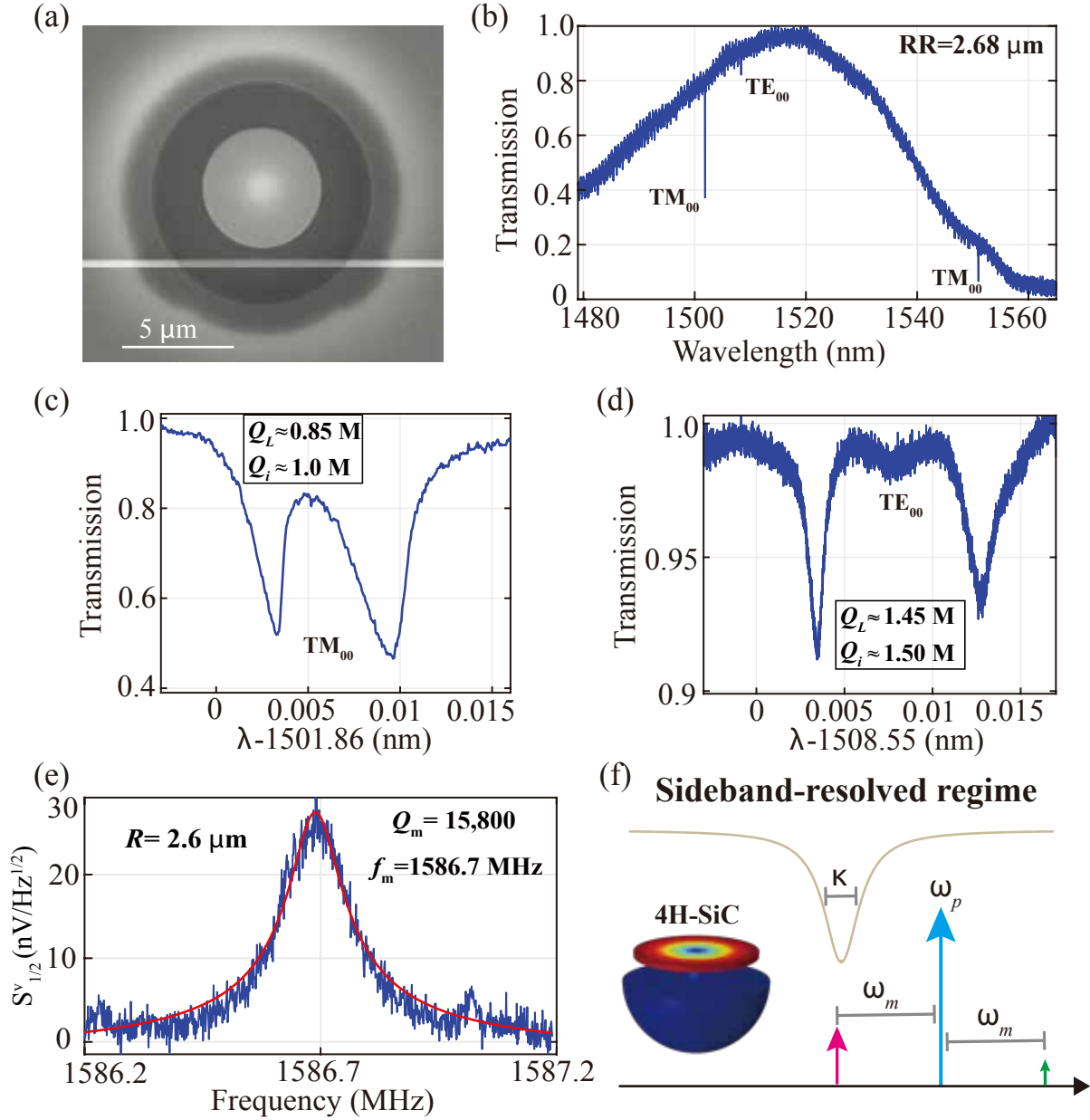


Figure 1: Optical and mechanical characterization of fabricated 4H-SiC microdisk resonators. (a) SEM image of a microdisk resonator with an undercut ratio of approximately 65%. (b) Optical transmission spectrum of a 2.68 μm -radius microdisk, with zoom-in views of the fundamental TM and TE resonances shown in (c) and (d), respectively. (e) Measured electrical spectrum corresponding to the first-order radial breathing mode, showing a mechanical frequency of 1.586 GHz and a mechanical Q-factor of 15,800 at room temperature. (f) Schematic of a microdisk resonator operated in the sideband-resolved regime, where the mechanical frequency exceeds the optical cavity linewidth.