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Sommario/riassunto	The increasing demand for powerful, reliable, and efficient gyrotron oscillators for Electron Cyclotron Resonance Heating (ECRH) in fusion plasma experiments requires a close look at the various factors in gyrotrons that determine gyrotron performance. In this frame, the influence of emitter surface roughness, emission inhomogeneity, and secondary electron generation on gyrotron operation is presented, with focus on Low Frequency Oscillations (LFOs) and Electron Beam Halo (EBH) generation.