Abstracts

A microwave gyro amplifier with a ferroelectric cathode

M. Einat, E. Jerby and G. Rosenman. "A microwave gyro amplifier with a ferroelectric cathode." 2002 Transactions on Microwave Theory and Techniques 50.4 (Apr. 2002 [T-MTT]): 1227-1230.

A ferroelectric cathode is employed for the first time as the electron-beam source in a microwave amplifier tube. A PLZT 12/65/35 ferroelectric ceramic with a high dielectric constant (/spl epsiv//sub r//spl sim/4000) is used in a form of a hollow cathode. The tube is operated in poor vacuum conditions (2/spl times/10/sup -5/ Torr) at room temperature, in a mechanism of a cyclotron-resonance maser amplifier. The device operates near the waveguide cutoff frequency at 6927 MHz. A 22-dB electronic gain and a 25-W output power are measured in this experiment.

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