Abstracts

Optoelectronic RF harmonic generation and mixing in high-T/sub c/ superconducting film

A.H. Majedi, S.K. Chaudhuri, R. Mansour and S. Safavi-Naeini. "Optoelectronic RF harmonic generation and mixing in high-T/sub c/ superconducting film." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1989-1992 vol.3.

We demonstrate for the first time the possibility of RF harmonic generation and signal mixing in HTS thin films by optoelectronic technique. Using HTS photoresponse, the inductance of the HTS film is modulated by an RF carrier frequency, which is the envelope of the optical signal. In the presence of a DC or sinusoidal current, second harmonic generation and RF signal mixing are achieved respectively using YBaCuO thin film by temporal and frequency analysis. This novel device can be useful for low-noise/low-power HTS microwave-photonic systems and interconnects.

❑ Return to main document.