Abstracts

A High Performance mm-Wave Electron Spin Resonance Spectrometer

G.M. Smith, J.C.G. Lesurf, R.H. Mitchell and P.C. Riedi. "A High Performance mm-Wave Electron Spin Resonance Spectrometer." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1677-1680.

We describe a novel millimetre-wave electron spin resonance (ESR) spectrometer designed to operate in the frequency range 90-200GHz and in the temperature range 1.5K - 270K. The spectrometer uses a bmodal reflection cavity coupled to a circular corrugated guide and uses Gaussian quasi-optics are used for most of the front-end signal processing. This technique has very low insertion loss and allows a number of sophisticated measurement techniques to be employed including induction operation and illumination by both circular polarisation states.

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