Selected Microwave Papers

Based on technical merit and timeliness, microwave papers in journals published outside the United States have been selected and compiled below, many with annotations. Reprints of the papers may be obtainable by writing directly to the author. The papers are in English unless otherwise noted.

—K. TOMIYASU

23

The Travelling-Wave Ruby Maser by S. Yoshida, S. Takahashi, M. Nojima, and M. Takena (Central Research Laboratory, Tokyo Shibaura Elec. Co., Ltd., Komukai, Kawasaki, Japan); *Toshiba Review*, vol. 19, November 1964, pp. 1226–1231.

The newly developed 4 Gc-band maser has a gain of 40 dB, bandwidth of 25 Mc, tuning range of 120 Mc and a noise temperature of 5° K. (In Japanese, English abstract.)

24

Oscillation Phenomena in Bulk Semiconductors by J. Okada, H. Machino, I. Kura, K. Hataya, and H. Ikoma (Central Research Laboratory, Tokyo Shibaura Elec. Co., Ltd., Komukai, Kawasaki, Japan); *Toshiba Review*, vol. 19, December 1964, pp. 1262–1266.

Low frequency and microwave oscillation was observed of CdS, GaAs and InSb crystals under a strong electric field. (In Japanese, English abstract.)

25

Spectral Characteristics of Semiconductor (GaAs) Lasers by S. Iida and T. Kushida (Central Research Laboratory, Tokyo Shibaura Elec. Co., Ltd., Komukai, Kawasaki, Japan); *Toshiba Review*, vol. 19, December 1964, pp. 1266–1271.

Measurements were made of emission spectra and transient behavior of oscillation of GaAs lasers at 77° K. (In Japanese, English abstract.)

26

The Progress in Precise Measurement of Surface Wave Field Distribution by Small Probes and Rotary Reflectors by H. Hata (Nagano Technical College, Nagano, Japan), K. Suetake (Tokyo Institute of Technology, Tokyo, Japan) and R. Ishii (Radio Regulatory Bureau, Tokyo, Japan); *J. Inst. Electrical Comm. Engineers of Japan*, vol. 47, October 1964, pp. 1471–1477.

Design of equipment and experimental results. (In Japanese.)

27

Fresnel Gain of Aperture Antenna with Parabolic Tapered Illumination by S. Takeshita (Tohoku Electric Power Co., Ltd., Sendai, Japan); *J. Inst. Electrical Comm. Engineers of Japan*, vol. 47, October 1964, pp. 1478–1485.

Theoretical analysis. (In Japanese.)

28

Non-reciprocity in Plasma Loaded Waveguide by M. Ohkubo (Faculty of Engineering, Gumma Univ., Kiryu, Gumma Pref., Japan); *J. Inst. Electrical Comm. Engineers of Japan*, vol. 47, November 1964, pp. 1795–1800.

Theoretical analysis of the electromagnetic fields of a parallel-plane waveguide loaded with a magneto-plasma sheath. (In Japanese.)

29

Microwave Reflection of Plasma in the External Magnetic Field by T. Takamoto and K. Terayama (Dept. of Elec. Engr., Faculty of Engr., Kansai Univ., Suita, Osaka, Japan); *J. Inst. Electrical Comm. Engineers of Japan*, vol. 47, November 1964, pp. 1846–1852.

Experimental results of microwave power reflected from a magneto-plasma confined in a rectangular waveguide. (In Japanese.)

30

Research on Ceramic-to-Metal Sealing for Millimeter Wave Traveling Wave Tubes by I. Mitsufuji and S. Machida (Electrical Comm. Laboratory, NT&T, Musashino-shi, Tokyo, Japan); *Electrical Comm. Lab. Tech. J.*, vol. 13, November 1964, pp. 1673–1690.

Report on an active alloy method applicable to sealing the collector of a millimeter wave T W T. (In Japanese.)

31

Measurement of Microwave Nanosecond Pulses by K. Miyauchi (Electrical Comm. Laboratory, NT&T, Musashino-shi, Tokyo, Japan); *Electrical Comm. Lab. Tech. J.*, vol. 13, November 1964, pp. 1691–1726.

Report on measurements of ultra-high speed microwave pulses. (In Japanese.)

32

The Helix Type Traveling-Wave Tubes with a Metal Envelope for the Millimeter Band; ECL-1224, by J. Ikeuchi, I. Mitsufuji, M. Mishima, M. Kashiwabara, H. Ogino, and I. Takasaki (Electrical Comm. Laboratory, NT&T, Musashino-shi, Tokyo, Japan); *Electrical Comm. Lab. Tech. J.*, vol. 13, December 1964, pp. 1923–1950.

Report on a helix type traveling wave tube for millimeter wave repeater equipment. Saturation power is about 0.5 watt in the 48 Gc region. (In Japanese.)