

Title	On the Absorption Spectra of $C^{12}H \ O^1$ at the 6-mm. and 4-mm. Wave Length
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bana type" and the cathode is a simple spiral of pure tungsten wire, and the total input power at 10 KV anode voltage and without magnetic field is 4 KW. We have attained the oscillation at 9 KV anode voltage and 700 Gauß magnetic field, and the continuous output power 500 W at 146 cm. length. We have obtained the expectation that the output power higher than 1 KW is possible with the same construction. For the simplification and the improved efficiency we have constructed a dipole antenna within the magnetron, so that the feeders need not penetrate the wall of the magnetron.

4. On the Absorption Spectra of $C^{12}H_2O^{16}$ at the 6-mm. and 4-mm. Wave Length

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The authors have derived the second and the third harmonic waves from the fundamental wave of the klystron 2K33A whose wave length is 1.2-cm., by using the frequency multiplier which we devised and reported at the Annual Meeting of the Physical Society of Japan in 1951.

We have observed the absorption lines of $O^{16}C^{12}S^{32}$ ($J=3 \rightarrow 4$, $\nu=48,651.64$ Mc/s, $\alpha=4.4 \times 10^{-4} \text{cm}^{-1}$), and several lines of $C^{12}H_2O^{16}$.

Though R.B. Lawrance and M.W.P. Strandberg have made measurements on the spectra of CH_2O , there are yet unobserved lines in millimeter range of this sample. We have detected the line corresponding to $J_{K-1}^{K=11}$, $K=11$, $2,10 \rightarrow 11$, $2,9$ ($\nu=48,600$ Mc/s $\alpha=8 \times 10^{-5} \text{cm}^{-1}$), and now are observing the lines $12 \rightarrow 12$ (6-mm. range) and $19 \rightarrow 19$ (4-mm range), to compare these $2,11$ $2,10$ $3,17$ $3,16$ with the theoretical values obtained by Heiner *et al.*

5. X-Ray Studies on Cast Structure of 4% Si-Steel in the Light of Anisotropy of the Velocity of Crystal Growth

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It was found by one of the authors that the growing velocity of [001] was far larger than that of others in the preparation of Si-steel single crystals. On the other hand, it is well known that the growing direction of cast structure of metals which have the cubic structure, is always parallel to [001].