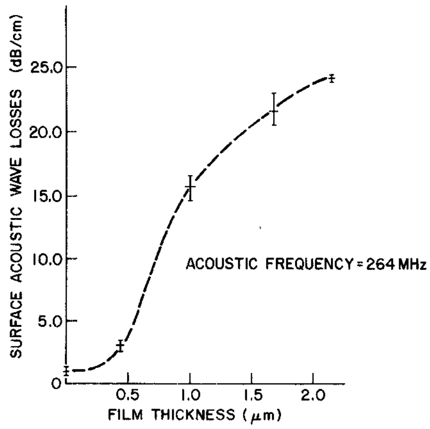

Fig. 3. SAW losses in Ta_2O_5 films on *YX* quartz.

Fig. 2 is the loss curve measured for a 0.42-μm film. Data taken in the unlayered portion are deflected at an angle ϕ, but in the film the deflection angle ϕ' is larger due to a slower velocity as indicated in Fig. 1. The data in Fig. 2 are presented on a semilog plot, and are linear in regions where the probe beam does not overlap in the two areas. Points falling off the curve indicate an overlap region where the probe beam hits both layered and unlayered regions and the beam is deflected into two separate angles. Each IDT is used to launch the SAW and the losses measured to be the same within the experimental accuracy. From Fig. 2, the loss for this particular film thickness is determined to be 2.9 dB/cm in the linear region; using this loss value and a 5.7-mm film width underestimates the total loss in this sample by approximately 1.0 dB. The additional loss could be due to edge imperfections or step discontinuities at the film edge; losses attributed to the edge are never found to be larger than 1.0 dB in these films. In most of the samples measured, the diffraction efficiency increases in the film as shown in Fig. 2; the maximum increase observed is 4.6 and is found in a sample with a 1.67-μm thickness. The increase is due to additional constructive reflections at the film–substrate interface, and a longer interaction length between the optical wave and the SAW. The diffraction efficiency also appears to decrease by a larger amount leaving the film than it increases entering the film. Again, this could be attributed to the step discontinuity but it is interesting to note that the effect is opposite to that observed in a film where the SAW speeds up in the film [9]. Losses for three other thicknesses were measured and the data are shown in Fig. 3 as a function of film thickness. Finally, acoustic wave loss values for polycrystalline Ta_2O_5 have not been measured, but the data presented here indicate that they are greater than 340 dB/cm/GHz² assuming that the quantity for the thickest film is approaching the bulk loss value.

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Comments on "Scattering by a Ferrimagnetic Circular Cylinder in a Rectangular Waveguide"

PRAKASH BHARTIA

In the above paper,[1] the authors have arrived at a general and rigorous solution for the scattering by a demagnetized ferrimagnetic cylinder in a rectangular waveguide. Corrections to the above paper have appeared separately [1], and a proof has been presented to show that the unitary condition on the S matrix is guaranteed for any size of truncation in the formulation of that paper. However, a number of errors still remain and for completeness, they are pointed out here. Thus (7)[1] should read

$$\frac{\partial E^i}{\partial r} + \frac{\partial E^s}{\partial r} = M\frac{\partial E'}{\partial r} - jK\frac{1}{r}\frac{\partial E'}{\partial \theta}, \qquad \text{at } r = R.$$

The second part of (30)[1] should read

$$vJ_p'(v)\sin\left(\frac{\pi x_0}{a} + p\alpha\right) + vJ_p'(v)\sum_{n=-\infty}^{\infty} A_n h_{np} + A_p v H_p^{(2)}(v) = B_p D_p J_p(u).$$

Finally, (33)[1] should read

$$A_p = G_p \sin\left(\frac{\pi x_0}{a} + p\alpha\right) + G_p \sum_{n=-N}^{N} A_n h_{np}.$$

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The author is with the Faculty of Engineering, University of Saskatchewan, Regina, Sask., Canada.
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