Abstracts

Characteristic of Leaky Surface Acoustic Wave Propagating Along Liquid/SiO/sub 2//LiNbO/sub 3/ and its Application to Liquid Sensor

S. Furukawa, R. Nishimura, M. Obana, T. Nomura and T. Yasuda. "Characteristic of Leaky Surface Acoustic Wave Propagating Along Liquid/SiO/sub 2//LiNbO/sub 3/ and its Application to Liquid Sensor." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 517-520.

We propose polystyrene / (36° rot.Y-X) LiNbO/sub 3/ and SiO/sub 2/ (fused silica) / (36° rot.Y-X) LiNbO/sub 3/ structures for the viscosity sensor, in which the shear horizontal (SH) component of the leaky surface acoustic wave (LSAW) becomes larger than that of the case without polystyrene and/or SiO/sub 2/. For glycerin/SiO/sub 2/(40μm) / (36° rot.Y-X)LiNbO/sub 3/, the propagation loss of LSAW due to the viscosity of glycerin is four times larger than that for glycerin/ (36° rot.Y-X) LiNbO/sub 3/ (30 MHz). Therefore, the viscosity coefficient of liquids is well estimated from the propagation loss of LSAW.

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