

## 结合金属膜的YZ-LiNbO<sub>3</sub>压电基片上声表面波陀螺效应分析

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摘要:

在声表面波陀螺效应作用过程中, 由于哥氏力的作用比较微弱, 导致现有的声表面波陀螺仪的检测灵敏度极低。为了改善哥金属点阵以增加质量负载, 将有可能获得良好的灵敏度性能。本文结合研究层状介质中声波传输特性的方法对YZ-LiNbO<sub>3</sub>压做了理论计算。对比分析有无金属膜层的压电基片中陀螺效应的大小, 以及不同金属材料对陀螺效应的影响作用, 验证了声表面波陀螺仪检测灵敏度的可行性, 从而为高性能行波模式声表面波陀螺仪的研制奠定理论基础。

关键词: 声表面波; 陀螺效应; 陀螺仪; 金属点阵

## The analysis on SAW gyroscopic effect of YZ-LiNbO<sub>3</sub> combining with metallic lay

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**Abstract:**

The weak Coriolis force leads to low sensitivity of the surface acoustic wave (SAW) gyroscope. To enhance the Coriolis force, a me propagation path of the SAW, and it is possible to develop a new progressing wave-based gyroscope with higher sensor sensitivity transmission properties analysis in layered structure was used to calculate the SAW gyroscopic effect of YZ-LiNbO<sub>3</sub> combining wi gyroscopic effect of two different structures that with and without metallic layer on piezoelectric substrate was analyzed to verify th by distributing metallic dot array. This laid the theoretical foundation for the development of progressing wave-based gyroscope wi

**Keywords:** SAW ; gyroscopic effect ; gyroscope; metallic dot array

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