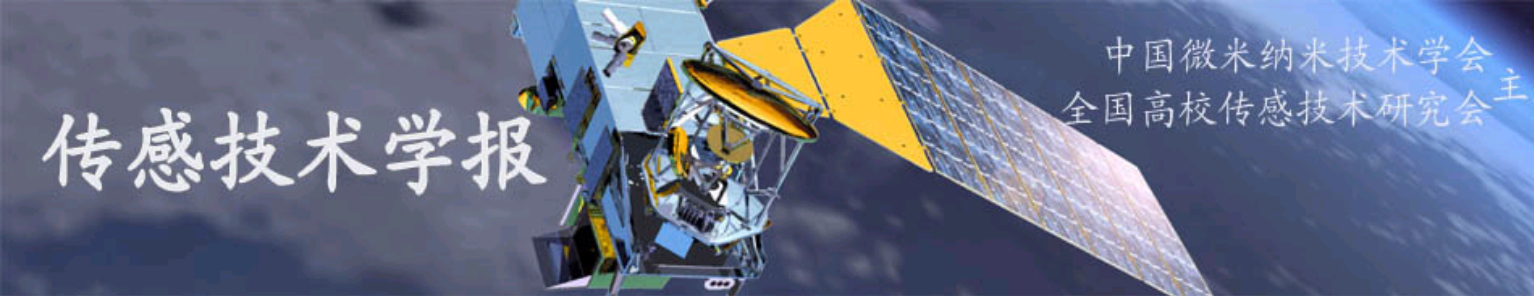

QCM振荡频率检测平台的建立及其稳定性探讨

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摘　要：

压电石英晶体振荡器谐振频率的稳定性是构建晶体微天平检测平台的前提和基础，合适的工作电路和环境是影响传感器输出特性和测量精度的一个主要因素。高稳定度的石英晶体振荡器，环境温度是影响频率稳定性最重要的因素之一；本文通过理论分析,选用了合适晶片和合适振荡电路、采用差频方式构建检验检测台，消除了频率温度系数造成的温漂，提高了微天平的稳定性，使传感器的性能得到明显提高。

关键词：石英晶体微天平；振荡频率；稳定性；差频

Establishment and Stability of the platform for detecting oscillation frequency of QCM

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Abstract:

The stability of piezoelectric quartz crystal oscillator resonance frequency becomes and structures the crystal microbalance prerequisite and foundation of measuring the platform, it is a main factor influencing the sensor to output the characteristic and measure the precision to choose suitable job circuit and environment. For the high-stab quartz crystal oscillator, environmental temperature is the most important frequency stability as one of the factors; Through theoretical analysis, and selection of appropr and suitable chip oscillation circuit, differential mode frequency Construction inspection platform eliminate the frequency temperature coefficient of drift and improve the stability of the microbalance, sensor performance has been markedly enhanced.

Keywords: Quartz crystal microbalance；Oscillation frequency；Stability；difference frequency

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