量測液體介電參數之終端開路同軸探棒的分析與設計

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摘 要

終端開路同軸傳輸線普遍應用於液體介電特性的量測，這些應用是依據終接於探棒之物質的不同，因而在開口產生不同特性之反射訊號的原理。然後，藉由同軸探棒孔徑導納與物質介電常數之特定公式來求得物質樣本的介電參數。本篇論文利用常見之直徑3.6mm的半硬式同軸傳輸線，再搭配向量網路分析儀來量測不同的液體樣本。最後，再利用終端開路同軸探棒之準靜態近似分析，來求出待測液體的介電參數。

關鍵詞 : 介電特性 ; 同軸探棒 ; 孔徑導納 ; 準靜態近似分析

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