SAR測試探棒特性校正之研究與設計

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摘 要

近年來由於無線通訊科技的蓬勃發展，SAR（Specific Absorption Rate）已成為行動通訊與人體健康關係的重要議題，然而SAR量測系統幾乎都是使用E-probe進行量測SAR值，而E-probe經過長時間的使用會慢慢的失去它的精確度與準確性，所以我們所使用的E-probe每年都需要拿回原廠校正，才能夠再次使用。有鑑於此，我們嘗試研究發展一套國內也能自行校正的系統，如此不僅節省時間、也省下了龐大的校正費用。 本論文在兩種情況下校正SAR測試探棒特性，第一種為在空氣中校正，另一種則在組織液中校正。此兩種校正皆必須先製作一個該頻段的波導管。在空氣中校正時，將E-Probe放置在波導管開口端中央位置慢慢向內延伸，紀錄下所量測到的電場值。而在組織液中校正時，波導管的內部上端放置有一Teflon容器，且Teflon容器的內部裝有模擬組織液體，在校正時將E-Probe放置在模擬組織液體中，而且要放在Teflon容器正中央的位置上，E-Probe由Teflon容器底部慢慢上升，計算且紀錄下由E-Probe所量測到的SAR值。本論文目前已完成波導管內部電場量測以及加上Teflon容器的波導管內部電場量測，在未來我們將持續執行在電波暗室內校正探棒以及在盛裝組織液後校正探棒等等，主要將會著重於使用數值方法來驗證我們所模擬及量測結果的準確性。

關鍵詞 : 波導管 ; 模擬組織液

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