Abstracts

Open-Ended Coaxial Exposure Device for Applying RF/Microwave Fields to Very Small Biological Preparations

R.L. Seaman, E.C. Burdette and R.L. DeHaan. "Open-Ended Coaxial Exposure Device for Applying RF/Microwave Fields to Very Small Biological Preparations." 1989 Transactions on Microwave Theory and Techniques 37.1 (Jan. 1989 [T-MTT]): 102-111.

An easily fabricated open-ended coaxial exposure device for applying RF/microwave energy to very small biological preparations is described. The device utilizes the fringing fields of a coaxial cable opening into a ground plane. Operation of the device is easily integrated into standard laboratory procedures to observe a biological specimen; monitor temperature; regulate temperature, pH, and pO/sub 2/; and record cellular membrane potentials. The electromagnetic field configuration of the device leads to elimination of detectable interaction with microelectrodes. Measured patterns of electric field and specific absorption rate (SAR) are given for a device built with quarter-inch semirigid coaxial cable and operating at 2450 MHz. Comparison is made with previous exposure devices for small biological preparations.

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