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POSTER

PLATFORM PRESENTATION

Microwave Oven Leakage Radiation Measurement To The Working Staffs With Personal Dosimeter In Superstores Of Taiwan

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The obvious instant heating advantages provided by the microwave oven ensured that its uptake would be rapid and extensive with up to almost every household in Taiwan currently owning one. There is public concern in Taiwan over leakage from microwave ovens with believing that radiation leakage is similar to ionizing radiation that could lead to serious health problems, including cancer. The above concern is even more severe in superstores in Taiwan. There are approximately more than 10,000 superstores in Taiwan, and 60,000 staffs working in very congestive spaces with an average less than 30 square meters. The congestive spaces confine the staff working very near (less than 1 metre) to the microwave ovens. The frequencies of customers visiting superstores, especially having habits of buying food boxes, are high, and therefore the chances of using microwave ovens to heat the frozen foods are also extraordinarily high; this resulting in the working staff potentially receiving high RF leakages from the ovens. The question has been raised over the possibility that leaky ovens may pose a health risk to workers. The purpose of the study is thus to measure accumulated dosages to the working staffs, and to know if the current guidelines are applicable to such working conditions.

30 working staff participated in the study, and the participants were instructed to wear a personal dosimeter (EME SPY 140, SATIMO) at arm position, 8 hours a day for one week. The dosimeter is set to read the measurement every 90 seconds, and the band frequency is tuned to 2,400-2,500 MHz (± 1.4 dB).

The current guidelines to leakages from microwave ovens are 5 mW/cm² at 5 cm emission standard, which are adopted in US and Australia. The measured average leakages from the microwave ovens in this study basically met the guideline requirements, with only one exception that the worker accidentally placed the dosimeter adjacent to the door of the oven, which is conceivable that the staff's arm may rest on the oven if the oven is located on the edge of a table or counter top.