

Abstracts

A History of Microwave Heating Applications

J.M. Osepchuk. "A History of Microwave Heating Applications." 1984 Transactions on Microwave Theory and Techniques 32.9 (Sep. 1984 [T-MTT] (Special Centennial Issue Historical Perspectives of Microwave Technology)): 1200-1224.

The development of microwave heating applications is reviewed. This field has followed the earlier application of lower RF frequencies to induction and dielectric heating. Serious activity began after World War II, directed towards a microwave oven for commercial and residential use. The broadening of interest to include scientific and industrial applications followed in the early sixties as new markets for microwave power sources were sought. The creation of the International Microwave Power Institute was one result. The marketing of a countertop microwave oven for consumers gave birth to the economically important oven business in the sixties. The growth of this field has been marked, perhaps slowed, by a series of sociotechnical events questioning the safety of microwave exposure near high-power microwave systems. Although some of this has receded, a problem of public education remains for those who will expand this field. The future development of this field will exploit a broader number of operating frequencies and will be ultimately limited by environmental regulations related to electromagnetic compatibility (or RFI), rather than safe exposure of biological tissue.

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