

Call for Papers

IEEE Transactions on Microwave Theory and Techniques Special Issue

on

Microwave Applications of Superconductors

The Nobel-prize-winning discovery of superconductors with transitions above the 77 K temperature of liquid nitrogen has sparked a worldwide research and development effort. The initial results on bulk ceramic samples are being supplanted by the thin films appropriate for microwave applications. Techniques are emerging for fabricating films whose microwave loss is at least an order of magnitude lower than that of copper up to 10 GHz. As the technology continues to improve, losses that are orders of magnitude lower are theoretically possible. This can have a tremendous impact on microwave circuits and systems, especially when combined with the fact that the cost of refrigerating at liquid nitrogen temperatures is one thousandth that of refrigerating at the liquid helium temperatures previously required. In addition, large savings in size and weight appear possible. High-temperature superconductors could also lower the noise of microwave receivers and widen the bandwidth of signal processors.

Papers are solicited for a special issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES on *Microwave Applications of Superconductors*, to be published in September 1991. The purpose of this special issue is to highlight the diverse applications of superconductors to microwave/millimeter-wave circuits and systems. Relevant topics of interest include, but are not restricted to, the following areas:

- High- Q Superconducting Filters
- Delay Lines
- Signal Processors
- Receivers and Mixers
- Antenna Systems and Phase Shifters
- Stable Oscillators
- Systems Applications
- CAD of Transmission Lines
- RF Sensors and Squids
- High Power Circuits and Cavities

Authors are requested to submit four (4) copies of their manuscripts by October 15, 1990, to:

Paul H. Carr
Guest Editor, MTT Special Issue
Rome Air Development Center
ATTN: RADC/EEAC
Hanscom AFB, MA 01731

C. K. Jones and B. R. McAvoy
Guest Editors, MTT Special Issue
Westinghouse Science and Technology Ctr.
1310 Beulah Road
Pittsburgh, PA 15235

Manuscript requirements for submitted papers are outlined on the outside back cover of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. A comparison with conventional or competing technologies is desirable, together with attention to such practical issues as packaging and refrigeration.