# Abstracts

## Guest Editors' Overview (May 1992 [T-MTT])

*G.M. Rebeiz and M.A. Frerking. "Guest Editors' Overview (May 1992 [T-MTT])." 1992 Transactions on Microwave Theory and Techniques 40.5 (May 1992 [T-MTT]): 793-794.*

The terahertz frequency band spanning the spectral range from 100 GHz to 10 THz is one of the last major windows in the electromagnetic spectrum to be explored. The primary applications for terahertz technology has been basic scientific research including astrophysics, atmospheric physics, plasma diagnostics, and laboratory spectroscopy. The rotational emission lines of the simpler molecules occur in this band. Measurements of these spectra allow the determination of abundances, distributions, and kinematic properties of the medium in which the molecules are located. More recently radar and communications systems are employing this spectral range to combine the frequency resolution and agility available in the microwave regime with the high spatial resolution using modest apertures typical of optical technology. Because the earth's atmosphere is opaque except for a few discrete windows in this frequency range, much of the technology development is being directed toward space qualifiable components. Achieving the full potential of the terahertz region has been limited by the lack of suitable technology. The design of high performance receivers and transmitters present a major challenge to the scientific and technical community.

❑ Return to main document.