

**OPPORTUNITIES AND CHALLENGES OF WORKING  
IN THE THz REGION OF THE ELECTROMAGNETIC  
SPECTRUM: A CRITICAL ANALYSIS OF  
APPLICATIONS AND SOURCES\***

Carter M. Armstrong

*L-3 Communications Electron Devices, 960 Industrial Road,  
San Carlos, CA 94070 USA*

With the turn of the century came a worldwide resurgence in interest in all things THz - review papers were written, popular press articles published, and numerous technology reviews held. To that end, the author had the opportunity, a few years ago, to co-chair a review on the state of compact THz source technology for the DoD. THz was taken in the review as covering the classical submillimeter frequency band from 300 GHz to 3 THz, with source technologies in the general 100  $\mu$ W to 1W average power range being the primary focus.

During the preparation of the final report it became apparent to the author that a rudimentary analysis of applications and device physics was needed to help put the THz technical pursuit into proper context - to help elucidate, as it might be, the opportunities and challenges of working in this demanding region of the electromagnetic spectrum.

The main results and conclusions of the study will be presented in this talk.

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