

CURRENT ADVANCES IN MICROWAVE PROCESSING OF METALS, AND RELATED EMERGING TECHNOLOGIES

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At the Oak Ridge Y-12 National Security Complex, we have developed and applied microwave metal processing techniques to a wide variety of metal and alloy systems. This presentation is a detailed discussion of the current state of the art, and emerging technologies. The topics that will be covered are: melting, casting, and heat treating of metals, CerMets, and metal matrix composites as well as the fabrication of several novel nano-structures and nano-structured materials. Process atmospheres, equipment and set ups will be covered as well as safety considerations and thermal and microwave energy management techniques.