

Infrared Sensing and Thermography at ORNL

Background

Infrared detectors and infrared cameras are used to detect temperature changes in a variety of materials and processes. The temperature maps obtained by an infrared camera have applications in process monitoring, property measurements, non-destructive evaluation and medical imaging. The high-speed thermography technique developed at ORNL has been used in capturing thermal transients in power transmission, microelectronics, automotive braking system and metal casting.

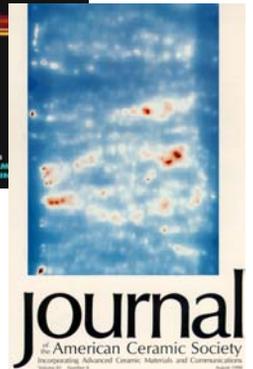
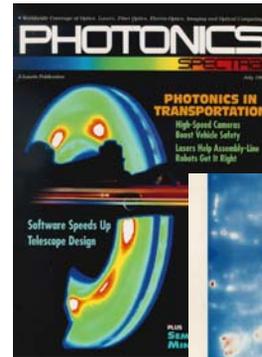
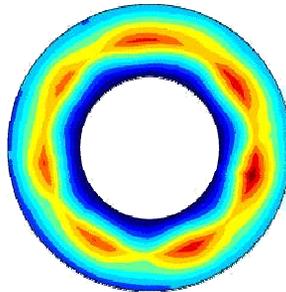
Features:

•High-Speed IR Camera

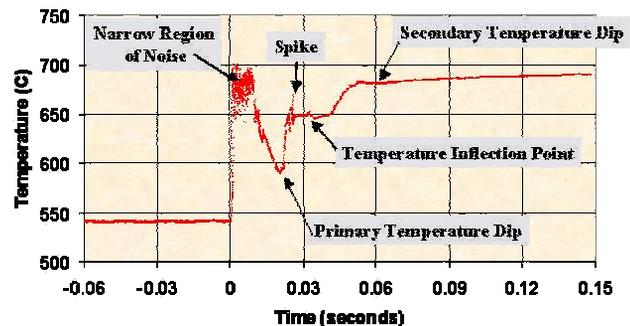
- Full frame rate = 142 Hz, small area = 6100 Hz
- Temperature sensitivity = 0.015 °C
- Wide angle, telephoto, and microscope lenses

•Fiber Optic Coupled 2-Color IR Detector

- Up to 100,000 Hz



Die Cast Test at 75 KHz



Point of Contact:

Hsin Wang
 High Temperature Materials Laboratory
 Oak Ridge National Laboratory
 P.O. Box 2008
 Oak Ridge, TN 37831-6064
 Phone: 865-576-5074
 FAX: 865-574-3940
 E-mail: wangh2@ornl.gov

