

DOE/NIH WORKSHOP ON THERMOGRAPHIC APPROACHES TO MEDICAL DIAGNOSIS AND THERAPY

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Executive Summary

A joint DOE/NIH Workshop on Thermographic Approaches to Medical Diagnosis and Therapy was held at the Hyatt-Bethesda Hotel on December 3-4, 2001. Approximately 30 researchers and program staff from academia, DOE headquarters and national laboratories, and NIH intramural and extramural programs participated in this 1 ½ day meeting. Objectives of the workshop were to (1) identify applications of thermographic approaches to medical diagnosis and therapy using optical, acoustic, and magnetic resonance (MR) modalities; (2) facilitate communication and research collaborations among DOE laboratory, NIH intramural, and academic investigators; and (3) communicate opportunities for funding related research. The program consisted of (1) presentations from invited academic experts, DOE laboratory researchers, and NIH intramural investigators on current research and problems; (2) presentations from DOE and NIH extramural program staff on funding opportunities and related agency programs; and (3) discussions on how problems in medical diagnosis and therapy can be addressed using represented capabilities and programs.

General research areas that need to be investigated to facilitate the potential benefits of thermographic approaches to disease diagnosis include instrumentation (basic technology development and equipment for specific clinical applications), computational modeling and analysis (especially models that predict high temperature effects and consider anisotropic properties of tissue), materials toxicity and nano/micro-particle applications, multi-modality approaches to thermography, animal models and testing, and spatial and temporal resolution (especially motion compensation, artifacts, and instrument design). Possible actions to enhance communication and collaborative research among the represented organizations include support of DOE and NIH research staff interagency assignments and details, establishment of a DOE office at the NIH, and future small, technically-focused workshops at DOE and NIH facilities.