



## IN-VIVO DETECTION OF SKIN CANCER USING THE DYNAMIC INFRARED IMAGING TECHNIQUE

C. Herman and M. Pirtini Çetingül

Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD 21218

The first row of images illustrates the imaging steps for the detection of skin cancer, starting from the digital white-light image of the shoulder area of the patient with a cluster of pigmented lesions (one of them being the melanoma), followed by the color-coded reference IR image at steady state conditions (skin exposed to ambient air), the color-coded infrared image of the same area after removing the cooling stress (2 s into the thermal recovery) and the magnified area of the lesion. A temperature difference is observed during the thermal recovery only at the location of the melanoma lesion. In the second group of images we compare the dynamic thermal responses of healthy skin, a melanoma lesion (Clark's level II), and a squamous cell carcinoma.

**Acknowledgments:** This research was supported by the National Science Foundation Grant No. 0651981 and the Alexander and Margaret Stewart Trust through the Cancer Center of the Johns Hopkins University.