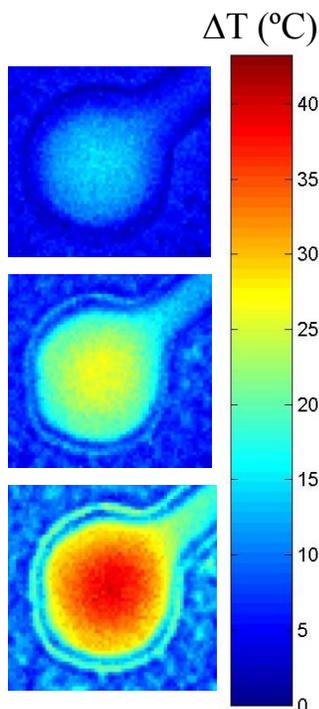


PHYSICS AND ASTRONOMY COLLOQUIUM  
UNIVERSITY OF WISCONSIN – STEVENS POINT  
Thursday, February 27, 2014  
12:00 PM Room D279 SCI

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Optical and Thermal Characterization of  
Photonic Devices



**Abstract:** The adverse effect of excess temperature on electronic devices such as a computer's CPU is evident to almost anyone who has used such a device. The same can be said about the photonic devices such as laser diodes and photonic integrated circuits. By obtaining a thermal map of the surface of the device, we are able to detect the “hot spots” on a small scale. In addition, by combining these thermal maps with a model based on heat exchange mechanisms we can extract optical properties of devices under operating conditions. These efforts can ultimately be used to achieve a better design for the device and cut the manufacturing costs. In this talk I will present the relationship between thermal and optical properties, details of the experimental technique of thermoreflectance microscopy for obtaining thermal maps and its applications in characterization of various micrometer sized devices and structures.

*Maryam Farzaneh is a Lecturer in Physics at UW-Stevens Point. She earned a Ph.D. in Physics at Boston University (2006) and has served as a postdoctoral researcher at Mount Holyoke College and at MIT. Before coming to UWSP, she was an assistant professor at Denison University.*