

MIT's George R. Harrison Spectroscopy Laboratory invites you to a celebration -- February 27, 2008

9:30 am – 12:00 m MIT Grier Room, 34-401; 50 Vassar St.

1:00 pm – 3:00 pm Cambridge Marriott, Kendall Square

Come celebrate with us on Wednesday, February 27, 2008. We have moved into our new space with its renovated and up-to-date laboratories, and we're looking toward the future. The theme of the celebration: *MIT Spectroscopy Laboratory: The next 80 years.*

Five outstanding speakers will help us mark the event. Taken together their talks will provide an interdisciplinary perspective especially appropriate given the Spectroscopy Laboratory's longstanding and vigorous tradition as a center for research that crosses discipline boundaries. Materials science, physics, biology, and chemistry will be central in talks by Subra Suresh, Phil Bucksbaum, Xiaowei Zhuang, and Fleming Crim. Teruo Hiruma, Chairman of the Board and CEO of Hamamatsu Photonics, will share his broad vision of how growing mastery and understanding of light will shape the future of all the scientific disciplines.

Reserve the day. Talks will be at MIT between 9:30 am and 3:30 pm. Spectroscopy Laboratory researchers will host tours of the new facilities.

Click on [Celebration Program](#) for exact times and locations of the talks

The speakers:



Subra Suresh is Dean of the School of Engineering and Ford Professor of Engineering at MIT. His research is in the nanomechanics of biological cells and molecules with the goal of finding connections between properties of mechanical structure and the states of diseased human cells. Particular subjects of attention are *P. falciparum* malaria, hereditary blood cell disorders, and cancer. Studies are carried out with high-force optical tweezers and with computational simulations of cellular and molecular deformation and shape thermodynamics. He also studies nanostructured materials, nanoindentation, and microindentation.



Phil Bucksbaum April 2004

Phil Bucksbaum is Professor of Photon Sciences, Physics, and Applied Physics; Director of the Stanford Center for Photon Ultrafast Laser Science and Engineering (PULSE) at Stanford University. He is a member of the National Academy of Sciences; his research focuses on fundamental light-matter interactions and, especially, the control of quantum systems using ultrafast laser fields. He develops new sources of ultrafast laser light in the infrared, visible, ultraviolet, and x-ray regions of the light

spectrum. "The Future of Attosecond Spectroscopy," Philip H. Bucksbaum, *Science* 317, 766 (2007).

Spectroscopy Laboratory Celebration: Speakers (cont.)



Xiaowei Zhuang is Howard Hughes Medical Institute Investigator and Professor of Chemistry and Chemical Biology and Professor of Physics, Harvard University. She is the recipient of the 2008 Coblentz Award, the 2006 Pure Chemistry Award, 2005 Camille Dreyfus Teacher-Scholar Award, and in 2003 a MacArthur Fellowship. The Zhuang lab develops optical imaging techniques to monitor the behavior of individual biological molecules and complexes in vitro and in live cells. Her current research has three major goals: (1) to develop super-resolution optical imaging techniques that allow imaging of cells and tissues with molecular-scale resolution, (2) to use single-molecule approaches to probe how biomolecules function, especially how proteins and nucleic acids interact; (3) to develop live-cell imaging techniques and to investigate virus-cell interactions.



Teruo Hiruma is Chairman of the Board and CEO of Hamamatsu Photonics, K.K. His leadership has made Hamamatsu a major participant in the progress of research that studies light and uses it to advance our understanding of life processes and many other aspects of science.

His is a vision of interdisciplinary work that is creating new technologies and new industries, that is leading to better comprehension of

the essential nature of the photon and its crucial role in tying electrons and atomic nuclei together, that is bringing us to a deeper understanding of matter and of life itself as we learn to manipulate atoms and molecules in any way we like. The prospects for the future are dazzling and challenging; photonics technology promises to make major contributions in a broad spectrum of fields including communications, information processing, metrology, biotechnology, medical care, the mind-brain sciences, energy, robotics, cosmology, physics, and spectroscopy.



Fleming Crim is John E. Willard and Hilldale Professor of Chemistry at the University of Wisconsin, Madison. He is a member of the National Academy of Sciences and the 2006 recipient of the Irving Langmuir Award in Chemical Physics. His research on the molecular dynamics of reactions and photo-dissociation reveals essential features of chemistry in gases and liquids. He uses molecules prepared in vibrationally excited states and spectroscopically monitored with ultrafast laser techniques to trace the flow of energy within a molecule and to study vibrationally driven reactions in liquids. Discovering the controlling aspects of chemical reactions at a fundamental level is the central focus of this research.