

The Dasari Lecture is an annual event sponsored by the G.R. Harrison Spectroscopy Laboratory to honor a scientist associated with the Spectroscopy Laboratory or its staff who has made important contributions to the field of spectroscopy.

**SPECIAL CONTRIBUTORS TO THE DASARI ENDOWMENT FUND:**



The Dasari Family



Past Awardees:

Charles Townes 2007

Takeshi Oka 2008

Changhuei Yang 2009

John E. Thomas 2010

Yukihiro Ozaki 2011

Robert Field 2012

Moungi Bawendi 2013

Massachusetts Institute of Technology

The George R. Harrison Spectroscopy Laboratory  
cordially welcomes you to the

## 8th Annual Dasari Lecture

by

**Katrin Kneipp**

on

## Exploring the hottest hot spots of plasmonic nanostructures and their spectroscopic potential



Tuesday, October 14, 2014 12:00 Noon  
MIT, Grier Room (34-401)

Refreshments served following the lecture

*Katrin Kneipp* was born in a small town in the south of the former East Germany in Thuringen. She grew up in the former German Democratic Republic and studied physics at the Friedrich Schiller University in Jena.

Katrin received her Diploma, Ph.D. degree and Dr.sc. from the Friedrich-Schiller University in Jena, and she received the *Facultas Docendi* in experimental physics from the Humboldt University Berlin. She was appointed at German universities in Jena and Berlin, in industry and at the Academy of Sciences Berlin.

Katrin came with a Heisenberg fellowship of the DFG to MIT in 1993 and continued to collaborate and to work there as Rockefeller-Mauze visiting professor.

Between 2003 and 2009 she was appointed as associate professor at Harvard University Medical School and at the Harvard-MIT Division of Health Sciences and Technology. She is currently professor at the department of Physics of the Danish Technical University in Copenhagen-Lyngby.

Katrin is known for her pioneering work in the fields of surface-enhanced Raman spectroscopy, plasmonic spectroscopy, and biophotonics.

During her work at MIT, she proposed and demonstrated the novel concept of vibrational pumping based on a strong non-resonant Raman process in the local optical fields of silver- and gold nanostructures.

Together with her colleagues from the Spectroscopy Lab, Katrin measured first single molecule Raman spectra in 1995. In collaboration with Mildred Dresselhaus, she reported first SERS studies on single wall carbon nanotubes.

Katrin received the Meggers award of the Society for Applied Spectroscopy. She is fellow of the American Physical Society and of the Society for Applied Spectroscopy.

Katrin is married to Harald Kneipp who is also one of her favorite colleagues. They have two daughters and three grand sons.

*Ramachandra Rao Dasari* was born in the Krishna district of Andhra Pradesh in India. He obtained his B.S. degree from Andhra University in 1954, his Master's degree from Benaras Hindu University in 1956, and his Ph.D. degree from Aligarh Muslim University in 1960, all in physics. Ramachandra joined the Physics faculty at the Indian Institute of Technology-Kanpur in 1962. He came to MIT as a fellow for two years beginning in 1966 to work in the newly formed group of Charles Townes and Ali Javan. He subsequently returned to IIT Kanpur, where he collaborated with Putcha Venkateswarlu to establish one of the largest laser laboratories for university research in India. During his 17 year tenure there, Ramachandra trained a large number of Ph.D. students and established relationships between IIT Kanpur and several national and industrial laboratories. In 1978, Ramachandra, his wife Suhasini and his children moved to Canada, spending a year each at the National Research Council, Ottawa, and the University of British Columbia, Vancouver. In 1980 he returned to MIT as a Visiting Professor in the Spectroscopy Laboratory. From 1992 to 2007 he served as its Associate Director. He retired in 2007 and continues to work part time.

Ramachandra's research contributions at IIT Kanpur include obtaining the first electronic spectrum of NSe and devising a new method for obtaining laser emission in copper vapor. His iodine vapor research foreshadowed laser emission in that molecule. As a physics panel member of India's University Grants Commission, he helped initiate new programs to improve undergraduate education, including teacher training workshops. IIT Kanpur has established the Dasari Ramachandra Rao distinguished lecture series in his honor.

In his work at MIT with Ali Javan, Ramachandra pursued the first measurements of laser frequencies in the far-infrared and, with Joel Parks, conducted a very high resolution study of N<sub>2</sub> laser transitions. Working with Takashi Oka at the National Research Council, he observed Dicke narrowing of infrared transitions for the first time. Working with Michael Feld, his numerous contributions include development of novel laser optical pumping techniques and, with Charles H. Holbrow and Daniel Murnick, studies to detect gamma ray anisotropy in optically pumped rubidium vapor. He is also largely responsible for development of the Spectroscopy Laboratory's Raman facilities for biomedical and physical science research.

Ramachandra is confidante to Spectroscopy Laboratory graduate students and professors, project organizer and troubleshooter. As Associate Director, he coordinated project and facility development at the MIT Laser Biomedical Research Center, an NIH National Institute of Biomedical Imaging and Bioengineering.

The Dasari Spectroscopy Laboratory Lectureship has been established in honor of Ramachandra's contributions to the Spectroscopy Laboratory. The proceeds of this endowed fund will provide support for an annual event at which a prominent scientist associated with the Spectroscopy Laboratory or its staff presents a lecture at MIT.