

**Title**     **The Remarkable Optical Properties of Single-Walled Carbon Nanotubes**

**Speaker**   **Prof. R. Bruce Weisman**  
 Department of Chemistry  
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 USA



**Date & Time**   Monday, November 14, 2016   11:00 a.m.  
**Place**           I<sup>2</sup>CNER Hall, Ito campus, Kyushu University

### Abstract

Single-walled carbon nanotubes (SWCNTs) are a family of artificial nanostructures with unique physical and chemical properties. They are the subject of intense interest in basic and applied research. Each SWCNT consists of carbon atoms covalently bonded into a tubular structure with long-range order and a specific diameter, roll-up angle, and electronic band structure. Most SWCNTs are semiconducting and show band gap photoluminescence (fluorescence) at characteristic wavelengths in the short-wave infrared. The discovery, interpretation, and properties of SWCNT fluorescence will be described. Some examples will also be presented showing how nanotube spectroscopy is used to characterize samples and to study structure-dependent physico-chemical processes.

### About the Speaker

Dr. R. Bruce Weisman is a Professor of Chemistry and of Materials Science and NanoEngineering at Rice University, where he is also a member of the Smalley-Curl Institute and the Institute of Biosciences and Bioengineering. He has held fellowships from the National Science Foundation, the Hertz Foundation, and the Alfred P. Sloan Foundation. Prof. Weisman's current research involves basic and applied studies of carbon nanotubes, and he has served as Chair of the Nanocarbons Division of The Electrochemical Society. Weisman is the founder and president of Applied NanoFluorescence LLC. He is a former Co-Editor of the journal Applied Physics A and is an elected Fellow of the American Physical Society, The Electrochemical Society, and the American Association for the Advancement of Science.

**Host:** Prof. Naotoshi Nakashima

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