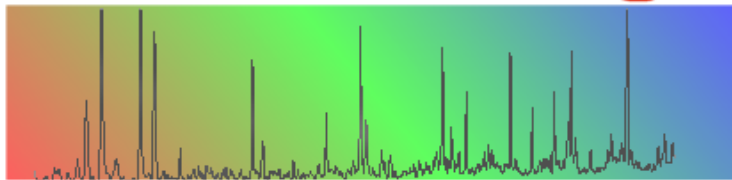




SAS-Chicago



Please visit our linked business cards on the [last page](#) of this flyer.

January Meeting

Tuesday, January 10, 2006

The January 2006 meeting will be held at the Wellington Restaurant, located at 2121 S Arlington Heights Rd, Arlington Heights, IL 60005. See the map on the following page.

Social Hour: 5:30 - 6:30 PM

Dinner: 6:30 PM

Speaker: 7:30 – 9:00 PM

Surface Enhanced Raman Spectroscopy: New Materials, Concepts, Characterization Tools, and Applications

by

Richard P. Van Duyne Ph. D.

Professor of Chemistry at Northwestern University

Surface enhanced Raman spectroscopy is currently experiencing a renaissance in its development driven by the remarkable discovery of single molecule SERS (SMSERS) and the explosion of interest in nanophotonics and plasmonics. Because excitation of the localized surface plasmon resonance (LSPR) of a nanostructured surface or nanoparticle lies at the heart of SERS, it is important to control all of the factors influencing the LSPR in order to maximize signal strength and ensure reproducibility. These factors include material, size, shape, interparticle spacing, and dielectric environment. ALL of these factors must be carefully controlled to ensure that the incident laser light maximally excites the LSPR in a reproducible manner. This article describes the use of nanosphere lithography for the fabrication of highly reproducible and robust SERS substrates for both fundamental studies and applications. Atomic layer deposition (ALD) is introduced as a novel fabrication method for dielectric spacers to study the SERS distance dependence and control the nanoscale dielectric environment. Wavelength scanned SER excitation spectroscopy (WS SERES) measurements show that enhancement factors $\sim 10^8$ are obtainable from NSL fabricated surfaces and provide new insight into the electromagnetic-field enhancement mechanism. Tip enhanced Raman spectroscopy (TERS) is an extremely promising new development to improve the generality and information content of SERS. Finally, the first in vivo SERS glucose sensing study is presented.

Please make your dinner reservations for the upcoming meeting by email at sas.chicago@bigfoot.com, by using the form on our web page < <http://www.sas-chicago.org/Online%20Registration%20at%20Wellington.htm> > or by calling Mary Kaplar at 708-449-5767. Leave your name, company affiliation, a telephone number, the number of reservations and your choice of entree. Please call by noon Friday, Jan. 6th, so that proper arrangements can be made with the LaMirage Restaurant. If you can't attend, cancel by Mon. noon: SAS is charged for no-shows.

Entree choices: London Broil with Bordelaise Sauce, Breast of Chicken with Teriyaki Sauce, or Vegetarian Fettuccine.

Dinner Cost Members: \$25

Students and Unemployed Members: \$10
(No Shows may be Billed)

Non-members: \$30

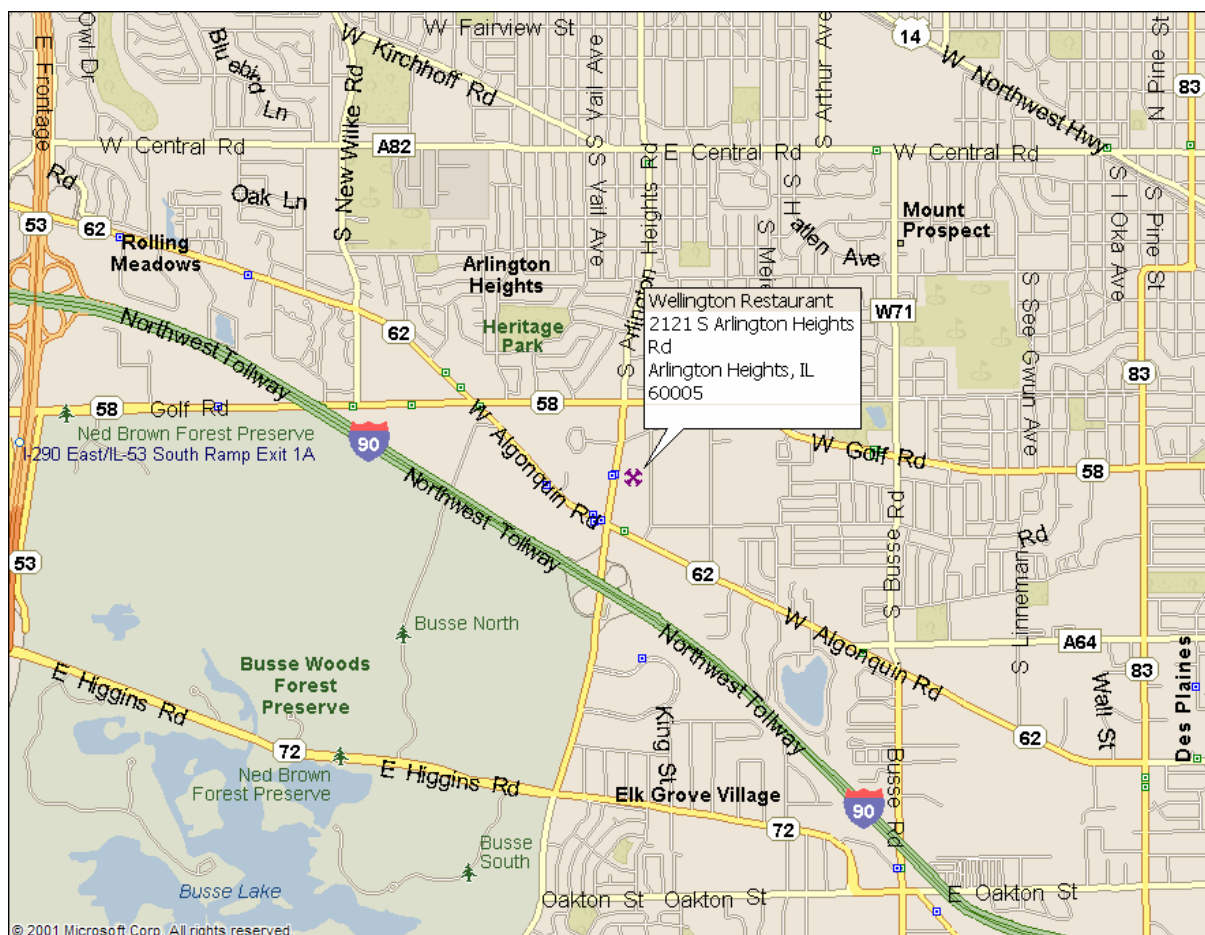
Biography of Richard P. Van Duyne

Richard P. Van Duyne is Charles E. and Emma H. Morrison Professor of Chemistry at Northwestern University. He is the co-discoverer of surface-enhanced Raman spectroscopy (SERS), inventor of nanosphere lithography (NSL), and developer of ultrasensitive nanosensors based on localized surface plasmon resonance (LSPR) spectroscopy. His research interests include surface-enhanced spectroscopy, nanofabrication, plasmonics, combined scanning probe microscopy/Raman microscopy, Raman spectroscopy of mass-selected clusters, ultrahigh vacuum surface science, structure and function of biomolecules on surfaces, and surface-enhanced spectroscopic methods for chemical and biological sensing. Some recent awards and honors include the Nobel Laureate Signature Award for Graduate Education, American Chemical Society (2005), Election to the American Academy of Arts and Sciences (2004), and The Earle K. Plyler Prize for Molecular Spectroscopy, American Physical Society (2004).

DIRECTIONS TO THE WELLINGTON RESTAURANT

From Chicago: Take Interstate 90 (Northwest Tollway) west to Arlington Heights Road exit. Proceed north to the restaurant.

From the southwest: Take 355 north to Route 53 north and exit at Algonquin Road east. Go to Arlington Heights Road. Turn left (north) and proceed to the restaurant.



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