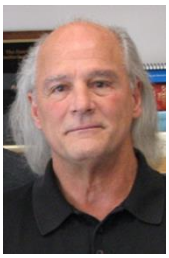
Richard E. Russo, PhD



Senior Scientist: Lawrence Berkeley National Laboratory (July 1982 – current)
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Founder and President: Applied Spectra, Inc (August 2004 – current)
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Education

BS – Chemistry: University of Florida, Gainesville (1976-1978)
PhD – Chemistry, Laser Spectroscopy: Indiana University, Bloomington (1978 to 1981)

Lawrence Berkeley National Laboratory

In 1982, Russo established the laser spectroscopy group at the Lawrence Berkeley National Laboratory; he continues to be the scientific director of this group. The research addresses fundamental physics and chemistry of laser ablation (LA) as the basis of this technology for real-time spectrochemical analysis. Studies include understanding light emission from the surface plasma induced at the ablation site (as the basis for LIBS - Laser Induced Breakdown Spectroscopy), and ablated aerosol mass transport for analysis by ICP-MS. Most recently, his group demonstrated and patented the use of laser plasmas for real-time measurement of isotopes. The new technology named LAMIS (Laser Ablation Molecular Isotopic Spectroscopy) won 2012 R&D100 and 2013 Strock Awards, as well as best paper of the year in Spectrochimica Acta B in 2001 and 2014. The LAMIS technology is a real-time atmospheric pressure method to measure isotope abundance ratios. The technology has advanced to show precision of isotope abundance ratios close to that measured with laboratory based mass spectrometers.

Other research by Russo at Berkeley includes co-inventor of a nanowire laser that led to a Science article and patent. He also is co-inventor of a patented process for nano-texturing (ITEX process) thin-films, lead-inventor of the patented ion-assisted pulsed laser deposition (IBAD process) which produced a world record critical current for HTSC (High Temperature Superconductor) materials. Russo has over 300 Scientific Publications, over 250 Invited Lectures, 10 Book Chapters and 21 Patents. Fourteen students have received their PhD degree under Russo's direction at the University of California, Berkeley. Over 25 international students have performed part of their PhD research in his Berkeley Laboratory. Several scientific visitors and faculty sabbatical members are hosted in his research group every year.

Applied Spectra, Inc

Russo is founder and president of Applied Spectra, Inc. (ASI). The company is a world leader for analytical spectroscopic instruments addressing commercial applications of laser ablation based on LIBS and ICP analysis. He has grown the company to include core expertise is research, development and manufacture of laser ablation instrumentation and analytical measurement services. With Russo's leadership, Applied Spectra has transitioned Berkeley research into state-of-the-art analytical instruments that are sold worldwide. ASI instruments are utilized in national and international markets, including academia, national laboratories, industry, energy, environmental and security applications.