Richard E. Russo, PhD

Experience:

Executive Chairman: Applied Spectra, Inc. (2017 - present)
President & CEO: Applied Spectra, Inc. (2004 – 2017)
Affiliate: Lawrence Berkeley National Laboratory (2019 – present)
Scientist: Lawrence Berkeley National Laboratory (1982 – 2019)
Department Head: Lawrence Berkeley National Laboratory (2002 – 2011)
Affiliate: Lawrence Livermore National Laboratory (1984 – 2017)

Education

BS – Chemistry: University of Florida, Gainesville
PhD – Chemistry, Laser Spectroscopy: Indiana University, Bloomington

Applied Spectra, Inc: Founded and ran the company using DOD, DOE and NASA SBIR grants, with successful transition of SBIR funding into commercial products. The company has become a world leader for analytical spectroscopic instruments addressing applications of laser ablation spectrochemical analysis based on LIBS and ICP-MS. Core expertise is R&D and manufacture of laser ablation spectrochemical analysis instrumentation and analytical measurement services. The company now employs 36 staff, including 9 PhD scientists, engineers and manufacturing personnel. Applied Spectra has transitioned Berkeley research into state-of-the-art analytical instruments that are sold worldwide. Our LIBS and Laser Ablation instruments are utilized in national and international markets, including academia, National Laboratories, industry, energy, environmental and security applications.

Lawrence Berkeley National Laboratory: Established and directed the analytical laser spectroscopy group that pioneered the development of laser ablation (LA) as an innovative technology for real-time chemical analysis, with applications in nuclear nonproliferation, safeguards and forensics, industrial, energy and environmental analyses. Studied fundamental physics and chemistry of laser material interactions using optical and mass spectroscopy. Discovered and patented a new technology using laser plasmas for real-time measurement of isotope ratios in the laboratory or field (industrial standoff, remote sensing). These technologies have been adopted by Department of Energy National Laboratories, government stakeholders, academia and industry. Co-inventor of world's smallest nanowire laser (patent and license), and a standoff laser ultrasonic sensor used by the paper industry for real-time process monitoring. Co-inventor of a patented technology for nano-texturing thin-films which produced world record High Temperature Superconductor. Each of these technologies has been adopted by R&D and commercial entities.

Served as Department Head of the Energy Technologies Division for 9 years. Responsibilities included program development, management and laboratory logistics for over 200 staff members. Department programs included batteries, physical sciences, combustion, sensors, materials and analytical chemistry. Other duties included staff development, evaluation, safety and liaison to the Division Director.

Held several joint appointments at LLNL in analytical chemistry, lasers (including NIF), nuclear chemistry and non-proliferation. Established the laser spectroscopy laboratory for the Seaborg

Institute, developed laser ablation for the Forensics Science Center, and contributed to programs in High Temperature Superconductor Materials development and NNSA nonproliferation.

Professional:

Lawrence Berkeley Laboratory Career Achievement 2017
American Chemical Society Division of Analytical Chemistry, Analytical Spectroscopy Award 2016
Society of Applied Spectroscopy Strock Award 2013
Society of Applied Spectroscopy Strock Award 2005
Fellow of the Society of Applied Spectroscopy
R&D100 Award: 2006 (Laser Ultrasonic Sensor)
R&D100 Award: 2012 (LAMIS)
Short Courses on Laser Ablation, LIBS, LAMIS at National and International meetings
Organizer for 21st Century LIBS Symposium (Pittcon)
Organizer of the 4th International Conference on Laser Ablation
FACSS/SciX, Pittcon: Workshop Organizer and Presenter
Winter Plasma Conferences – plenary, invited and short courses
International Committee Member for Conference on Laser Ablation
International Committee Member for Laser Induced Breakdown Spectroscopy Society
Associate Editor: Applied Spectroscopy, Spectrochimica Acta B
Reviewer: NSF, DOE, DOD, NIH
Advisor to DOE on nuclear non-proliferation
Advisor to DOD on stand-off explosives detection
Consultant: New Wave Research (9 years), Tyco (2 years), LaserScope (1 year),
Expert witness patent infringement case
32 Patents
Publications >340 peer-reviewed scientific manuscripts