

Dr. George G. Wicks '63

George Wicks graduated from Bay Shore High School in 1963 and with the solid educational foundation provided at BSHS, attended Florida State University (FSU) where he played on the tennis team and did his undergraduate work. After graduating from FSU, he continued his education and received his advanced degrees at Harvard University (MS in Applied Physics), and at MIT (PhD in Materials Science and Engineering).

Dr. Wicks then accepted a research position at the Savannah River National Laboratory where he worked for 40 years and was involved in many areas of science and engineering. This included vitrification and management of high-level radioactive wastes, in which he is “considered an international expert”. Among his many contributions was development of the first ‘*Slurry Feeding System*’ for vitrification of the 34 million gallons of high-level radioactive waste at the Savannah River Site (SRS) in the more than billion-dollar Defense Waste Processing Facility, currently in production. He was also active in leaching studies of nuclear glasses and in assessing chemical durability and long-term performance of products and systems. He is co-author of the *SRL Kinetic Leachability Model* [Wallace-Wicks Model] describing leaching behavior of complex 40-component nuclear waste glasses and also, he designed, developed and coordinated, the *first major international in-situ testing program in the US*, involving burial of simulated nuclear waste systems. This supplemented his other international field-testing programs conducted in four geologies in four countries, with participants from France, Germany, Belgium, the UK, Japan, Sweden and the U.S. Dr. Wicks is also co-inventor of *Sol-Gel Indicators*, a new class of composite materials that can be fabricated into sensors, and integrated into important fiber optic, analytical monitoring devices for environmental measurements and other uses. He is co-inventor of *Sol-Gel Metal Hydrides*, composites which have the ability to store unusually large amounts of hydrogen, both reversible and very effectively, for hydrogen-based vehicles. He is co-inventor of a new *Hybrid Microwave Technology*, with the ability to remediate hazardous components and reclaim reusable metals, and also conduct decontamination of C&B agents on law enforcement equipment and materials, while retaining forensic signatures. He is also co-inventor of *Porous-Walled Hollow Glass Microspheres*, referred to by others as “...a breakthrough technology.... opening new realms for Energy, Environment, Medicine and Security”.

In 2013, after working four decades at the 300 sq. mile DOE Savannah River Site, Dr. Wicks retired at the position of Consulting Scientist, the highest technical level in the organization. Since retiring, he has been active in many additional undertakings and as he has stated, "flunked retirement 101". He has his own consulting company, was recruited to be CTO of the Applied Research Center in SC, is an adjunct professor to several universities, and is VP of a third biotech spin-out company. Since retirement he has provided invited lectures at a number of US universities (ex. Ohio State, VA Tech, Univ. of CA- Irvine, etc.), international universities and organizations (ex. in India, China, Italy, France), and also gave keynote addresses at several international meetings, including the recent ICACC conference attended by more than 1000 participants from 40 countries, this past year. He also continues to conduct research and publish in various forums, including a recent chapter in a bio ceramics textbook.

Dr. Wicks has published a considerable amount of work during his career, including authoring or co-authoring more than 200 publications, 7 books and 9 invited chapters in texts and encyclopedias. He has served as co-chairman for more than a dozen international conferences and has almost two-dozen patents, issued or in prosecution. In 2012-11, he served as President of the American Ceramic Society and its more than 10,000 members in 80 countries. He has also served as past President of the National Institute of Ceramic Engineers, been a member of the U.S. Materials Review Board, been Adjunct Professor to a number of universities (Clemson, Univ. of Florida, VA Tech, Medical College of GA., etc.) as well as serving on Advisory Boards to various universities and organizations (including the DuPont Corporate Ceramics Board and an EU nuclear oversight committee). He has also testified on technical aspects of nuclear management and weapons dismantlement activities for various groups, including those of the National Academy of Sciences. He was also part of a NATO delegation that met with fellow scientists in St. Petersburg, Russia on 'Disposal of Weapon Plutonium'.

Among his many awards and honors include an R&D 100 Award, Alpha Sigma Mu (International Honorary Society) Distinguished Life Member Award, SC Governor's Award for Excellence in Scientific Research, ACerS Distinguished Life Member Award, member of the SC Academy of Science, CNTA Distinguished Scientist of the Year, the Joan Hodges Queaneau Palladium Medal, George Westinghouse Gold Corporate Award as well as the Westinghouse Innovators Award, the Greaves Walker Award, Arthur L. Friedberg Memorial Lecturer, Academician of the World Academy of

Ceramics, D.T. Rankin Award and this past year was the James Mueller Memorial Lecturer and award recipient. He also served on the Board of Directors of the Ronald McDonald House of Augusta GA and was a Board Member to the CSRA Wounded Warriors Care Project.