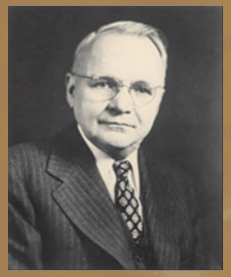
Yale SCHOOL OF ENGINEERING & APPLIED SCIENCE



The lectureship is named in honor of Harry Nyquist, Ph.D. '17, an important contributor to stability theory and information theory. Nyquist received the IRE Medal of Honor in 1960 for "fundamental contributions to a quantitative understanding of thermal noise, data transmission and negative feedback." In October 1960, he was awarded the Stuart Ballantine Medal of the Franklin Institute "for his theoretical analyses and practical inventions in the field of communications systems during the past forty years including, particularly, his original work on the theories of telegraph transmission, thermal noise in electric conductors, and in the history of feedback systems." In 1969, he was awarded the National Academy of Engineering's fourth Founder's Medal "in recognition of his many fundamental contributions to engineering."

This lectureship was made possible through a generous gift from J. Robert Mann, Jr., B.E. '51, Chairman of E-J Electric Installation Co., founded in 1899. He is the sponsor of the J. Robert Mann, Jr., Engineering Student Center and a recipient of the Yale Medal, Yale's highest award to honor outstanding individual service to the University.

THE DEPARTMENT OF ELECTRICAL ENGINEERING PRESENTS:

The 2017 NYQUIST LECTURE IN ELECTRICAL ENGINEERING

Stephen Forrest

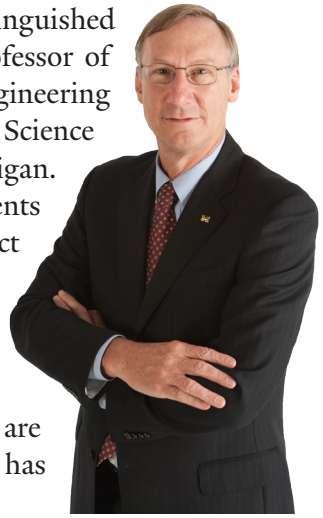
Peter A. Franken Distinguished University Professor and Paul G. Goebel Professor of Engineering

Departments of Electrical Engineering & Computer Science, Physics, and Materials Science & Engineering

University of Michigan

Made possible through a generous donation from J. Robert Mann, Jr. '51

Stephen Forrest, Peter A. Franken Distinguished University Professor and Paul G. Goebel Professor of Engineering, is a professor of Electrical Engineering and Computer Science, Physics, and Materials Science and Engineering at the University of Michigan. He is director of the Optoelectronic Components and Materials Group. He and his group conduct research on photovoltaic cells, organic light emitting diodes, and lasers & optics. His investigations in these areas span decades, and have resulted in five startup companies, 305 issued patents, and key technologies that are pervasive in the marketplace. In addition, he has graduated 56 Ph.D. students.



In 1985, Forrest joined the Electrical Engineering and Materials Science Departments at USC. In 1992, Forrest became the James S. McDonnell Distinguished University Professor of Electrical Engineering at Princeton University. He served as director of the National Center for Integrated Photonic Technology, and as Director of Princeton's Center for Photonics and Optoelectronic Materials (POEM), and from 1997-2001, he chaired Princeton's Electrical Engineering Department. In 2006, he rejoined the University of Michigan as Vice President for Research, and returned to research and teaching full time in 2014. Forrest has authored more than 565 papers in refereed journals, with an h-index of 148 and over 107,000 citations.

Forrest is an elected member of the National Academy of Engineering, the National Academy of Sciences and National Academy of Inventors and a Fellow of the APS, IEEE, and OSA. He has received numerous additional distinctions throughout his career, including the IEEE/LEOS Distinguished Lecturer Award, the IPO National Distinguished Inventor Award (co-recipient), the Thomas Alva Edison Award, the MRS Medal, the IEEE/LEOS William Streifer Scientific Achievement Award, the Jan Rajchman Prize from the Society for Information Display, and the 2007 IEEE Daniel Nobel Award. Forrest has been honored by Princeton University establishing the Stephen R. Forrest Endowed Faculty Chair in Electrical Engineering in 2012. He was most recently awarded the 2017 IEEE Jun-ichi Nishizawa Medal.

The 2017 NYQUIST LECTURE IN ELECTRICAL ENGINEERING

"Organic Light Emitting Devices (OLEDs): The Revolution in Displays and Lighting"

Stephen Forrest

University of Michigan

Organic light emitting devices, or OLEDs, are very thin (nanometer) devices made primarily with carbon-containing dye compounds. They are extremely attractive due to their simplicity, flexibility, light weight, and ultrahigh efficiency. Following their invention 30 years ago, OLEDs are now exploding into the marketplace, with prospects of ultimately replacing liquid crystal displays for mobile applications, virtual and augmented reality systems, as well as monitors and in televisions. Equally exciting is their imminent entry into the world of lighting. Yet before this revolutionary technology can dominate these applications, there are still several challenges that must be overcome. These challenges include improving their useful lifetime, improving light outcoupling using cost effective and simple methods, and finding very low cost and rapid methods to pattern very high resolution and low cost pixelated displays. While considerable progress has been made, there is much that remains to be discovered, engineered and implemented. This talk will focus on the "grand challenges" faced in perfecting OLED technology, and will provide a perspective about the future of display and lighting technology based on advances yet to come.

Tuesday, April 25, 2017
2:30 p.m.
Sheffield-Sterling-Strathcona Hall
1 Prospect Street, New Haven, CT