People News

Gordon E. Moore Named
ECS Honorary Member

GORDON E. MOORE (at left in photo below), Chairman Emeritus of Intel Corporation and long-time ECS member, was recently awarded with Honorary Membership status, an award granted to only a few ECS members. ECS President MARK ALLENDORF (at right in photo below) presented Dr. Moore with a scroll commemorating his election to Honorary Membership in ECS, and said, “Moore’s tremendous achievements in this field have had a strong and lasting influence on ECS, its members, and the work that they perform.”

Moore co-founded Intel in 1968 and is widely known for “Moore’s Law”: In 1965 he predicted that the number of transistors the industry would be able to place on a computer chip would double every year. In 1975, he updated his prediction to once every two years. While originally intended as a rule of thumb in 1965, it has become the guiding principle for the industry to deliver ever-more-powerful semiconductor chips at proportionate decreases in cost.

Dr. Moore has been the subject of a number of stories in Interface, including coverage of his delivering the ECS Lecture at two ECS meetings (1981 and 1997), as well as the cover story for the spring 1997 issue of Interface. Moore has been a member of ECS for 48 years. In recognition of his accomplishments and contributions to the solid state science and technology that the Society’s covers, in 2006, ECS established the Gordon E. Moore Medal for Outstanding Achievement in Solid State Science and Technology. Originally the Society’s Solid State Science and Technology Award, the newly-named Medal was made possible by a $150,000 endowment from Intel Corporation in honor of its co-founder.

ECS is proud to hail Dr. Moore as an Honorary Member and to continue its relationship with this important scientist.

In Memoriam

Bruce E. Deal
1927-2007

“Give me a large enough furnace
and a place to stand
and I’ll oxidize the world.”

— BRUCE DEAL

BRUCE E. DEAL passed away on April 17, 2007, in Palo Alto, California. He was born in Lincoln, Nebraska on September 20, 1927 to parents Roy W. Deal and Edith Fiddock Deal. Dr. Deal received an AB degree from Nebraska Wesleyan University in 1950, and MS and PhD degrees in physical chemistry from Iowa State University in Ames, Iowa in 1953 and 1955 respectively. He served in the 392nd Army Band at Camp Lee, Virginia from 1946 to 1947.

In 1950, Dr. Deal married Rachel V. Birmingham. They had three children: Donald (born 1954 in Ames, IA), Michael (born 1957 in Spokane WA), and Diane (born 1961 in Palo Alto CA). Deal joined Kaiser Aluminum and Chemical Corporation’s Department of Metallurgical Research in Spokane, WA in 1955 as a Research Chemist. In 1959, Deal and family moved to Palo Alto, CA and he spent the rest of his career in Silicon Valley. He first conducted semiconductor research at Rheem Semiconductor in Mountain View, the first spin-off of Fairchild Semiconductor. In 1963, he joined Fairchild’s R&D Laboratory in Palo Alto, initially as a Member of Technical Staff and later as a Research Manager/Department Director.

Dr. Deal was known throughout the world for his research involving silicon oxidation and passivation. In the 1960s, he worked at Fairchild with Andy Grove, Gordon Moore, and other scientists in developing processes leading to the manufacture of stable MOS semiconductor devices and circuits and the explosive growth of the MOS integrated circuit industry in the early 1970s. A specific paper published
Deal was an accomplished French horn player, a stamp collector and genealogist, and was active in the Boy Scouts. He was a member of the Menlo Park Presbyterian Church. Survivors include Rachel, his wife of 56 years; children Donald Deal of Chanhassen, MN, Michael Deal of Palo Alto, and Diane Paulson, also of Palo Alto; eight grandchildren; brothers Ervin Deal of Fort Collins, CO, and Marvin Deal of Florida; and a sister, Aletha Deal, of Fort Collins, CO.

This notice was prepared by the family of Bruce Deal, with additional input from Howard Huff. The fall 2007 issue of Interface will commemorate the 50th anniversary of the epochal Frosch and Derick paper (September 1957, Journal of The Electrochemical Society) on the silicon-dioxide protective (electrically passivating) layer and its impact on the semiconductor industry. The issue will be dedicated to the memory of Bruce Deal and will also contain Dr. Deal’s last published article.

In Memoriam

**Hans Thurnauer 1908-2007**

Hans Thurnauer, a long-time ECS member, died this past February. Dr. Thurnauer became a member of the Society in 1935. His interests were in technical ceramics both for dielectric and high temperature applications. He served on the Finance and Perkin Medal committees of the Society, and he was elected Vice-President of the Society in 1953 and President in 1956. Dr. Thurnauer graduated from the Royal Technical College of Charlottenburg, now called the Technical University Berlin, in chemical engineering. He attended the University of Illinois as an exchange student from Germany in 1930. After completing his master’s degree, he returned to Germany where he worked in the ceramics industry, pursuing a PhD. After one year, he had to leave Germany for England because of the Nazi regime. In 1935 he was invited to join the American Lava Corporation in Chattanooga, Tennessee, and thus immigrated to the U.S. in 1935. In turn, he was able to assist a number of people to immigrate to the U.S.

Hans Thurnauer had a distinguished and productive career at the American Lava Corporation. He authored many patents and publications on ceramics for high-temperature, wear-resistant, and electronic applications. During 1935-54 he served as a ceramic engineer, research director, vice-president and director of the company. He consulted for several U.S. government agencies and was sent to investigate ceramic plants in Germany in 1945 after World War II.

In 1955, when 3M Corporation acquired American Lava Corporation, Dr. Thurnauer moved to St. Paul, Minnesota to head the inorganics section of the 3M Central Research Laboratory. In 1958, he was granted his delayed PhD from the Technical University of Berlin.

He retired from 3M in 1964 and took a United Nations position as director of the Israel Ceramic and Silicate Institute of Haifa. He spent two years in the U.N. post and then moved to Boulder in 1967 to work as consultant for Coors Porcelain Company, Golden, CO. He retired again in 1972 and began a new career as a consultant and volunteer executive for the International Executive Service Corps, furthering ceramic endeavors in South Korea, Indonesia, and Turkey.

His professional honors include Fellow of the American Ceramic Society, ACerS (1945); ACerS Edward Orton Jr. Memorial Lecture (1977); the Alumni Award for Distinguished Service in Engineering from the University of Illinois (1987); and ACerS Distinguished Life Member (1996).

Hans Thurnauer was a resident of Boulder for 40 years. He was an avid hiker and cross-country skier. An active member of the Colorado Mountain Club, he joined club members to climb Mt. Kilimanjaro well into his second retirement. His dedicated service to the community included volunteering as consultant for SCORE and Boulder Meals on Wheels, and serving on the Board of Directors of Attention Homes and Mary Sandoe House. He supported
Dolores Benedict Thurnauer (d. 2001); and his son, Peter Thurnauer (d. 1976). He is survived by his daughters: Dorothy Kaplan and husband Donald (Kensington, CA), Marion Thurnauer and husband, Alexander Trifunac (Boulder); six grandchildren: Thomas, Eric, Monica, and Marita Thurnauer, and Andrew and Timothy Kaplan; two great-grandchildren: Frances and Cole Thurnauer-Montesano; and daughter-in-law Milena Renshaw.