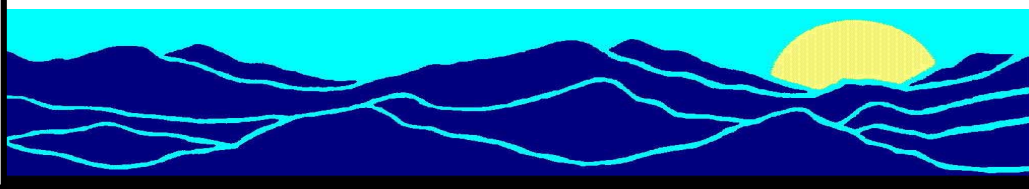


*In memory of
Daniel W. Jackson
whose loss we mourn*



VIRGINIA MOUNTAIN SECTION NEWSLETTER

IEEE Region 3, Council 09, Section 65

September 2003

**Joint meeting with Virginia Blue Ridge Section of American Chemical Society
September 18, Clarion Hotel Roanoke Airport**

Have Japanese Gasoline/Electric Hybrids Eaten the Lunch of Fuel Cell Vehicles? Dr. George R. Lester

Speaker

George R. Lester, President of George Lester, Inc. in Salem, is a consultant on catalysts and an Adjunct Professor in the Center for Catalysis and Surface Science of Northwestern University, Evanston, Illinois.

Dr. Lester retired in 1996 after 38 years at AlliedSignal (now Honeywell). He is a 1954 graduate of Berea College, and received the M.S. and Ph.D. degrees in Physical Chemistry from the University of Kentucky in 1956 and 1958.

Dr. Lester is known internationally for his contributions to the development of the original automotive exhaust catalysts and for extensions of that technology in environmental, air purification, and energy-conservation applications. He holds 47 U.S. Patents and has authored over 50 technical publications. In 1991 he chaired the Gordon Research Conference on Catalysis, and in 1992 was elected a Fellow of the Society of Automotive Engineers. He represented AlliedSignal on the White House Policy Dialogue Committee to Reduce Automobile Greenhouse Emissions in 1994-5. The ACS recognized him with the E. V. Murphree Award in Industrial and Engineering Chemistry for his contributions to catalytic science and technology in April 2002.

Dr. Lester directed programs to improve electrocatalysts for phosphoric acid fuel cells in the late 1970s and to improve membrane electrode assembly's for PEM fuel cells for automobiles and stationary applications in the 1990s.

Abstract

Since late 1999, two Japanese manufacturers have marketed automobiles in the U.S. that are powered by gasoline/electric hybrid power systems. These vehicles use about 35% less fuel, and produce 35% less greenhouse gas emissions (CO₂), than conventional autos of comparable size and performance. The hybrids are fueled only with gasoline; there is no electric 'plug'. The gasoline engine generates and stores electricity during normal operating modes, and then uses it for supplemental power as needed for accelerations and hills. Vehicle inertia is also recaptured by regenerative braking and stored in the battery package for use as needed. Well over 100,000 of these vehicles are already in service on U.S. highways. The speaker has driven one of these autos for about 25,000 miles in the last 28 months, and will discuss his experiences with this technology. The current timelines for further commercialization of this technology globally and domestically will also be discussed.

Fuel cell vehicles are being developed domestically and abroad, with promise of much lower fuel consumption and lower regulated and greenhouse emissions compared to conventional autos, and toward an introduction target of a few thousand vehicles on the road by 2010 (or perhaps 2020). This program will require major additional improvements in fuel cell technology as well as establishment of capabilities to manufacture the needed amounts of H₂ (from natural gas, crude oil, or coal) and to distribute it to neighborhood auto fueling facilities where it can be

transferred at 5,000 psig to individual auto storage tanks.

Several studies will be cited which show that the wheel to wheel fuel efficiencies and regulated and greenhouse emissions of the gasoline-electric hybrids on the road today are as good as those of the projected future fuel cell vehicles. However, fuel cell vehicles do offer major potential for energy independence and 'zero emissions' when, and only when, the hydrogen fuel is produced from electricity generated from non-fossil fuel sources such as solar, wind, or nuclear technologies.

Date: Thursday, Sept. 18, 2003

Social: 6:30 PM
Dinner: 7:00 PM
Talk: 8:00 PM

Cost: Member or guest \$ 15.00
Student \$ 8.00

Reserve by **5 PM Monday Sept. 15**

Shawn Addington
<mailto:AddingtonJS@mail.vmi.edu>
(540) 464-7343

Please indicate number of attendees

Directions to:

**Clarion Hotel Roanoke Airport
2727 Ferndale Drive NW**

1581, Exit 3, Hershberger Rd West
1st Rt. onto Ordway Drive, ¼ mile,
Right into Parking Lot.

Daniel Wyer Jackson 1929-2003



It is with great sadness that we report that Dan Jackson, died Sunday, August 10, 2003 at his home in Roanoke after a long battle with prostate cancer.

Born June 28, 1929 in Louisville, Kentucky, he received a B.S. in Electrical Engineering from Lehigh University, Pennsylvania in 1950. He served as a First Lieutenant in the U.S. Army in Korea in 1951 to 1953. He achieved the level of Captain in the Army Reserves in 1960. Dan married Doris C. Maier on Oct. 1, 1955 in Gloversville, N.Y.

Dan began his career as a test engineer for General Electric in Lynn, MA in 1950, and resumed his work at G.E., after his military service, as an evaluation engineer in Schenectady, N.Y. His position then brought him to Roanoke with his new wife. He retired as a senior product engineer after 41 years at G.E. in 1991.

Dan was very active in professional activities. He was the 1974-75 president of the Roanoke Chapter of the National Society for Professional Engineers and received an outstanding service award from the Virginia Society of Professional Engineers in 1976. He was a regional director of IEEE, providing leadership to ten committees on engineering education and professional development through the late 1980s and 1990s. He was a member of the Board of Directors of IEEE Southcon (1991-95), also acting as Convention Director (1994) and Chairman of the Board (1994-95).

Dan received many outstanding and meritorious service awards throughout the years for his contribution to this engineering society, the most recent is the Daniel W. Jackson Service Award, created to honor his exemplary service to IEEE, presented July 26, 2003 to him in his home.

Dan Jackson was an adult leader of the Boy Scouts of America in Schenectady and Roanoke, from 1954 through 1980. In recognition of his contributions the Blue Ridge Council presented him with the Silver Beaver Award in 1979. In addition to his scouting and professional activities, Dan was leader in the Covenant Presbyterian Church, as a deacon and then an elder. Dan was known for his integrity, dedication, generosity and ready sense of humor.

He is survived by his wife, Doris; his children, Daniel B. Jackson and his wife, Bobbi Heath, and their son Alex of Westboro, MA, Barbara J. Ash and her husband, E. Lawrence Ash, Jr., and their daughter Jessica of Dunkirk, MD, and Gordon S. Jackson and his wife, Lan Nguyen, and their daughters Cynthia Mai-Khanh and Kira Tu-Quyen of San Jose, CA; and Dan's brother, David W. Jackson of Auburndale, MA.

DANIEL W. JACKSON AWARD

Earlier this year, IEEE Region 3 (Southeastern U.S.) established an award "to recognize a Past Director of Region 3 who, through continuing service to the Region and to the Institute, has made exemplary contributions to the electrotechnology profession. This award is known as the "Daniel W. Jackson Award" in honor of the first recipient of this award and whose service to Region 3 following his term as Region 3 Director serves as a model for other Past Directors to emulate."

The award was presented to Dan at his home in Roanoke on Saturday, July 26. Bob Duggan and his wife Kathleen drove from Atlanta; Dick Riddle, representing the Region 3 ExCom, drove up from North Carolina; and Dick Nichols, representing the Life Members Committee, traveled from Corvallis, Oregon for the ceremony. Also present were Mark Shepard, IEEE VMS Chair, and Dan's wife Doris and son Daniel.



Standing L to R: Dick Riddle, Dick Nichols, and Bob Duggan



Dan is presented the award plaque by Dick Riddle, Region 3 Past Director



Standing L to R: Dick Riddle, Dr. Dick Nichols (Past President IEEE Industry Applications Society), Bob Duggan (Chair Region 3 Strategic Planning Committee), and Dr. Mark Shepard, Chair IEEE VMS.

The contributions that Dan made to IEEE in general, and to VMS in particular, can not be overstated. One need only look at "Open" in the listing of IEEE VMS Committees to see the holes left by his passing. Dan can not be replaced, but perhaps the best way to honor him, is for others to step up and emulate his service and dedication.

Meetings Calendar

VMS October Meeting will be on Wednesday, October 15, and will consist of a tour of the WDBJ (Channel 7) digital television facilities in Roanoke. Please note change from our normal meeting day. Please hold this date; details concerning the meeting will be in the October Newsletter.

IEEE Sections Leadership Development Workshop

Innsbrook Technical Center, Glen Allen, VA
Saturday, September 27, 2003, 10:00 AM - 5:00 PM

A leadership training workshop will be held at the Innsbrook Technical Center, west of Richmond, on Saturday, September 27, 2003. Topics will include IEEE structure, administration, and resources available to help officers and volunteers get their jobs done. All Section and Chapter officers who have not had previous training should attend. All interested members are welcome. There is no charge for the workshop or materials. Lunch and refreshments are available for \$15.00, or you can bring your own.

Instructor: Charles Lord, P.E. - IEEE Region 3 Leadership Training Committee Chair

Date: Saturday, September 27, 2003

Time: 10:00 a.m. - 5:00 p.m.

Place: Dominion, Innsbrook Technical Center, 5000 Dominion Blvd., Glen Allen, VA 23060

RSVP: Adeeb Hamzey, Richmond Section Chair 804-273-4559

Register By: September 24, 2003

Cost: \$15.00 (for box lunch, morning and afternoon refreshments), No charge for workshop or materials.

IEEE Virginia Mountain Section

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