

RESUME

DALE K. HENSLEY

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CAREER OBJECTIVE:

To make a positive contribution to society by working with people that can use my education and experience, and can provide me with a challenge, advancement potential and job security.

EDUCATION:

Tennessee Institute of Electronics, Inc., Associate Degree in Electronic Technology; Graduated 3/25/83, 3203 Tazewell Pike, Knoxville, TN 37917, 865.688.9422, Transcript available

Roane State Community College; 3 quarters (September 1980 – June 1981)

Roane County High School; Kingston, TN (Graduated in 1980)

EXPERIENCE:

12/01 – Present:

Job Title: **Technical Associate**, Molecular Scale Engineering and Nanoscale Technologies (MENT) group, Solid State Division, UT-Battelle, Oak Ridge National Laboratory (ORNL). Group Leader: Mike Simpson (865.574.8588). The purpose of the position is to support the research performed in the MENT group. The main research focus is on the growth of Vertically Aligned Carbon Nanofibers (VACNF's) using dc plasma-enhanced chemical vapor deposition (PECVD).

3/91 – 12/01:

Job Title: **Principal Technologist** (Level 5 Monthly), Surface Modification and Characterization Research Center (SMAC), Solid State Division, UT-Battelle, Oak Ridge National Laboratory (ORNL). Group Leader: Tony Haynes (865.576.2858). The purpose of the position was to support and facilitate the research performed at SMAC. The Center has unsurpassed facilities for ion implantation and ion beam analysis of materials and engages in collaborative research involving scientists from academic, industrial, and government laboratories worldwide through a user program.

Responsibilities included: operate, maintain, and develop new capabilities for a state-of-the-art Tandem ion beam accelerator and ion sources; collaborate with visiting scientists (international and national) and provide experimental support for postdocs and personnel from other ORNL groups; train new users and operators on the accelerator; perform facility safety checks; and supervise crafts and outside contractors who perform maintenance and installation of equipment and utilities. This work has resulted in co-authorship on 27 published papers (see attached list).

Additional administrative responsibilities in the SMAC facility included acting as the Radiation Source Custodian, Satellite Accumulation Area Custodian, HMIS Chemical Inventory Custodian, Emergency Coordinator, Precious Metals Coordinator, Facility Site Specific training administer, Facility Safety Contact, Material and Equipment Requisitioner and Vacuum Hardware Custodian.

Professional development included attending and contributing to the annual Symposium of North Eastern Accelerator Personnel. Co-Organizer when Oak Ridge hosted the symposium in October 1999. Made technical presentations on upgrades to the SMAC facility. Completed training in: Vacuum Technology in Operation, Maintenance and Leak Detection of Vacuum Systems from the American Vacuum Society, Maintenance of turbomolecular pumps from Balzers, Radiological worker, Lockout/Tagout, Hoisting and Rigging (Industrial Equipment Operator's Permit) and numerous other employee training modules.

Knowledge of: the design, construction, assembly, and testing of accelerator components beam lines, beam line equipment, and vacuum chambers. Vacuum technology: mechanical pumps, scroll pumps, turbomolecular drag pumps, diffusion pumps, ion pumps, cryopumps, electropneumatic valves, vacuum gauges, leak detectors, and other vacuum instrumentation.

Technical Achievement Award received in May 1998 for developing a novel time-shared foreline and roughing vacuum system for the Surface Modification and Characterization Research Center that resulted in a greatly reduced environmental impact while achieving an annual cost savings of approximately \$31,000. Paper available upon request.

8/83 – 3/91:

Job Title: **Engineering Technologist**, Oak Ridge Electron Linear Accelerator (ORELA), ORNL, Job Assignments included operation of the 140 MeV ORELA, which involved following operating procedures; troubleshooting; operating and calibrating diagnostic instrumentation, accelerator components, and a variety of systems and equipment (vacuum, cooling, spectrometer, thermocouple, magnetic, electronic instrumentation, cryogenic, RF and HVPS); verifying data acquisition and performing data analysis; updating and drawing blueprints by hand and computer-aided design systems; developing and maintaining an in-house preventive maintenance program; and compiling data for Utilization and User Facility usage reports. Assignment required interaction with engineers, physicists, ORNL support personnel, technicians and a multi-craft crew. Computer experience on: IBM PC and Digital VAX systems.

4/83 – 8/83:

Job Title: **Electronic Technician**, CBS Record Co., Columbia Drive, Carrollton, GA, Job Assignments: troubleshoot, repair, test, install and preventive maintenance on microprocessor controlled equipment.

7/77 – 4/83:

The Crosseyed Cricket, 751 Country Lane, Lenoir City, TN 37771, Jim Lockwood, Owner (865.986.5435)
Job Assignments: Laborer, Plumber, Carpenter, Electrician, Kitchen Helper and Waiter.

REFERENCES:

Roy Wallen, Lenoir City, TN 37771, Home: 865.986.6985, Office: 865.574.9029 Relationship-Friend
Tom Markwood, Kingston, TN 37763, Home: 865.717.6226, Office: 865.376.2990 Relationship-Pastor

Co-authored Published Papers

Control mechanisms for the growth of isolated vertically aligned carbon nanofibers

Vladimir I. Merkulov, **D. K. Hensley**, A.V. Melechko, M. A. Guillorn, D. H. Lowndes, and M. L. Simpson

The JOURNAL OF PHYSICAL CHEMISTRY B

FEB 2002

Effects of ArF excimer irradiation on single energy and multi energy Ge ion implanted silica

Magruder RH, Weller RA, Weeks RA, Wehrmeyer J, Zuhr RA, **Hensley DK**

JOURNAL OF NON-CRYSTALLINE SOLIDS

280 (1-3): 169-176 FEB 2001

Ion beam induced change in the linear optical properties of SiC

Williams EK, Ila D, Poker DB, **Hensley DK**, Larkin DJ

SILICON CARBIDE AND RELATED MATERIALS - 1999 PTS, 1 & 2

MATERIALS SCIENCE FORUM

338-3: 667-670 2000

Fabrication of SiC hydrogen sensor by Pd-implantation

Muntele CI, Ila D, Williams EK, Poker DB, **Hensley DK**, Larkin DJ, Muntele I

SILICON CARBIDE AND RELATED MATERIALS - 1999 PTS, 1 & 2

MATERIALS SCIENCE FORUM

338-3: 1443-1446 2000

Effects of MeV energy titanium ion implants on the oxygen related defects centers in silica

Magruder RH, Weller RA, Weeks RA, Zuhr RA, **Hensley DK**

JOURNAL OF NON-CRYSTALLINE SOLIDS

274 (1-3): 282-288 SEP 2000

Nonlinear optical waveguides produced by MeV ion implantation in LiNbO₃

Sarkisov SS, Curley MJ, Williams EK, Ila D, Svetchnikov VL, Zandbergen HW, Zykov GA, Banks C,

Wang JC, Poker DB, **Hensley DK**

NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM

INTERACTIONS WITH MATERIALS AND ATOMS

166: 750-757 MAY 2000

Radiation induced nucleation of nanoparticles in silica

Ila D, Williams EK, Zimmerman RL, Poker DB, **Hensley DK**

NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM

INTERACTIONS WITH MATERIALS AND ATOMS

166: 845-850 MAY 2000

Gold, silver and copper nanocrystal formation in SiC by MeV implantation

Zimmerman RL, Ila D, Williams EK, Gasic B, Elsamadicy A, Evelyn AL, Poker DB, **Hensley DK**, Larkin

DJ

NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM

INTERACTIONS WITH MATERIALS AND ATOMS

166: 892-896 MAY 2000

Oxygen related defect center formation in MeV energy boron implanted silica

Magruder RH, Weeks RA, Weller RA, Zuhr RA, **Hensley DK**

JOURNAL OF NON-CRYSTALLINE SOLIDS

259: 73-80 NOV 1999

Post-implantation bombardment assisted formation of colloidal Au in silica

Ila D, Williams EK, Smith CC, Poker DB, **Hensley DK**, Klatt C, Kalbitzer S

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

148: (1-4) 1012-1016 JAN 1999

Ion beam synthesis of Au and Cu nanoclusters in MgO

Zimmerman RL, Ila D, Williams EK, Poker DB, Hensley DK, Klatt C, Kalbitzer S

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

148: (1-4) 1064-1068 JAN 1999

Ion beam modification of PES, PS and PVC polymers

Evelyn AL, Ila D, Zimmerman RL, Bhat K, Poker DB, Hensley DK, Klatt C, Kalbitzer S, Just N, Drevet C

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

148: (1-4) 1141-1145 JAN 1999

Formation and photosensitivity of defects in Se implanted silica

Magruder RH, Weeks RA, Weller RA, Zuhr RA, Hensley DK

JOURNAL OF NON-CRYSTALLINE SOLIDS

239: (1-3) 78-83 OCT 1998

Effects of MeV ions on PE and PVDC

Evelyn AL, Ila D, Zimmerman RL, Bhat K, Poker DB, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 164-168 MAY 1998

Study of the effects of MeV Ag and Au implantation on the optical properties of LiNbO₃

Williams EK, Ila D, Sarkisov S, Curley M, Cochrane JC, Poker DB, Hensley DK, Borel C

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 268-273 MAY 1998

Formation of metallic nanoclusters in silica by ion implantation

Ila D, Williams EK, Sarkisov S, Smith CC, Poker DB, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 289-293 MAY 1998

Third order optical nonlinearity of colloidal metal nanoclusters formed by MeV ion implantation

Sarkisov SS, Williams E, Curley M, Ila D, Venkateswarlu P, Poker DB, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 294-298 MAY 1998

Fabrication of copper and gold nanoclusters in MgO (100) by MeV ion implantation

Zimmerman RL, Ila D, Williams EK, Sarkisov S, Poker DB, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 308-311 MAY 1998

Optical absorption and photosensitivity of N implanted silica

Magruder RH, Weeks RA, Zuhr RA, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 575-579 MAY 1998

Investigation of Mn implanted LiNbO₃ applying electron paramagnetic resonance

Darwish A, Ila D, Poker DB, Hensley DK

**NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS**

141: (1-4) 679-683 MAY 1998

Temperature effects on the fabrication of optical channels in planar GaAs/AlGaAs waveguides using MeV ions

Taylor T, Ila D, Zimmerman RL, Cochrane JC, Ashley PR, Poker DB, Hensley DK
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

141: (1-4) 704-708 MAY 1998

Effects of MeV implanted boron on the optical properties of silica

Magruder RH, Weeks RA, Zuhr RA, Hensley DK
JOURNAL OF NON-CRYSTALLINE SOLIDS

222: 243-249 DEC 1997

Optical changes induced in GaAs/AlGaAs waveguides by MeV ion bombardment

Taylor T, Ila D, Zimmerman RL, Ashley PR, Poker DB, Hensley DK
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 442-445 MAY 1997

Photosensitivity of B, Si and N implanted silica

Magruder RH, Zuhr RA, Hensley DK, Withrow S
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 492-496 MAY 1997

Loss measurements and stoichiometric dependence of Ti and O implanted LiNbO₃ waveguides

Williams EK, Ila D, Sarkisov S, Venkateswarlu P, Poker DB, Hensley DK
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 512-514 MAY 1997

MeV silver ion implantation induced changes in optical properties of MgO (100)

Qian Y, Ila D, Zimmerman RL, Poker DB, Boatner LA, Hensley DK
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 524-527 MAY 1997

Post bombardment enhanced optical absorption in gold implanted silica

Ila D, Wu Z, Smith CC, Poker DB, Hensley DK, Klatt C, Kalbitzer S
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 570-573 MAY 1997

Resolving the electronic and nuclear effects of MeV ions in polymers

Evelyn AL, Ila D, Zimmerman RL, Bhat K, Poker DB, Hensley DK
NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM
INTERACTIONS WITH MATERIALS AND ATOMS

127: 694-697 MAY 1997