

CURRICULUM VITAE for PROFESSOR DAVID G. HOWITT

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Education

B.A. 1972 Metallurgy and the Science of Materials. Oxford University, England.
Ph.D. 1976 Materials Science and Engineering
University of California, Berkeley, California, USA.

Dr. Howitt is an Emeritus Professor at the University of California at Davis, specializing in the Science of Materials and Forensic Science. He is the founder and past chairman of the Graduate Group in Forensic Science at UC Davis and has lectured extensively in the United States and abroad. He has published over 150 technical papers and has testified extensively in Superior Court. His areas of expertise include failure analysis, forensic microscopy and the behavior of materials in fires.

Selected areas of expertise

Properties of Materials

Dr. Howitt has taught courses in Engineering Materials, Failure Analysis, Phase Transformations, Corrosion, Thermodynamics and Structure Property Relationships. He has supervised major research contracts in the science of materials with the Basic Energy Sciences Division of the Department of Energy and with private industry.

Examination of Materials and Forensics

Dr. Howitt has taught courses in Scanning and Transmission Electron Microscopy, Crystallography, X-ray Diffraction and X-ray microanalysis and supervised a variety of research contracts in Electron Microscopy and Analysis. He established the Materials Characterization Center and Electron Microscope Facility at Davis and is past chairman of the Steering Committee of the National Center for Electron Microscopy. He is an authority in the forensic examination of materials and the significance of these observations and supervised major research contracts with the National Institute of Justice in this area.

Hazardous materials

Dr. Howitt has presented short courses and seminars relating to hazardous materials, including nuclear waste materials and asbestos. He has contributed to the drafting of legislative procedures for hazardous materials and is familiar with standards and practices in labeling including the Consumer Products Safety Commission and the Federal regulations for hazardous substances.

The behavior of materials in fires

Dr. Howitt is an expert in the field of oxidation and combustion and the way in which materials can decompose in a fire. This includes the energy and temperature requirements for the ignition of various flammable and combustible materials including vegetation and man made materials as well as the consequences of combustion including microstructural changes and pyrolysis. Professor Howitt has also made particular studies of spontaneous ignition and the way in which metals arc and the significance of the various theories with regard to the consequences of fire damage to electrical wiring.

Appointments

2010 Professor Emeritus University of California, Davis
2005 Scanning Achievement Award
2003 – 2010 Book Editor Journal of Scanning Microscopy
1998 – 2007 Chair of the Steering Committee of the National Center for Electron Microscopy
1998 – 2007 Chairman of the Graduate Group in Forensic Science, UC, Davis
1996 HKUST Workshop on Electron Microscopy of Materials
1994 New Paltz SEM School
1992 – 2009 Board of Directors, Foundation for Advances in Clinical Medicine
1992 – 2009 Program Committee for The International Scanning Microscopy Meeting
1992 – 1994 Editorial Board, Acta Microscopia
1991 Program Chairman for the Microbeam Analysis Society
1989 Program Chairman for Scanning Microscopy
1987 – 2009 Editorial Board, Journal of Scanning Microscopy
1987 – 1990 Director of the Davis School in Scanning Microscopy
1985 – 1986 Research Fellow the University of Glasgow
1985 – 1987 Editorial Board, Journal of Electron Microscopy Techniques
1984 – 1985 SERC International Fellow
1988 – 2010 Professor University of California, Davis
1982 – 1988 Associate Professor University of California, Davis
1978 – 1982 Assistant Professor University of California, Davis
1976 – 1978 Postdoctoral fellow Case Western Reserve

Research Contracts

Cartridge case identification: National Institute of Justice
Creation of a bullet database: National Institute of Justice
Nuclear Waste Materials: DOE, Office of Basic Energy Sciences.
Studies of Three Dimensional Imaging: IBM.
Decomposition of Ceramics under Irradiation: DOE, Basic Energy Sciences.
Electron Beam Interactions: SERC.
Electron Microscope Facility: DOE.
High Strain Rate Deformation: ALCOA.
Thin Film Microstructures: Northrup.

Radiation Damage in Nuclear Wastes: INEL.

Radiation Damage in Nuclear Waste Glasses: Savannah River Laboratories.

Optical Materials: DOE, Office of Basic Energy Sciences.

Radiation Damage to Optical Materials: DOE, Office of Basic Energy Sciences.

Hazardous Materials: McLaren Engineering.

Surface Bonding of Semiconductor Materials: Rockwell International.

Processing Boron Nitride thin films: Sandia Laboratories.

Consulting Contracts

Rockwell International, The Idaho National Engineering Laboratory, Sandia National Laboratories, Northrup Corporation, Teledyne, Alcoa, Sandoz Corporation, Anderson Barrows, All Pure Chemical, Zurich Insurance Company, AIG, Nationwide Insurance Company, Allstate Insurance Company, State Farm Insurance Company, Hewlett Packard.

Past Professional Associations

American Ceramic Society, The Materials Society, Materials Research Society, National Academy of Forensic Sciences, Microbeam Analysis Society, Microscopy Society of America, Foundation for Advances in Clinical Medicine, Scanning, Journal of Electron Microscopy techniques. International Association of Arson Investigators.

Consulting and professional services arrangements

Consulting fee	\$400/hr
Retainer (litigation matters)	\$3,000 furnished prior to being listed as an expert
Travel Expenses	Reimbursement for business travel, lodging and subsistence.
Materials Analysis	Instrumentation cost
Depositions and Trial testimony	\$600/ hr