

RAY RADEBAUGH

NBS/NIST: 1966-2009

EDUCATION:

University of Michigan, BS (Engineering Physics), 1962
Purdue University, MS (Physics), 1965
Purdue University, PhD (Physics), 1966

CITATION:

For outstanding, pioneering contributions to cryocooler technologies, leadership in cryogenics research at NIST, and leadership in the national and international cryogenics community.

POSITIONS HELD AT NBS/NIST:

Post-Doctoral Fellow, Cryogenics Division, Institute for Material Science (Boulder), 1966-1968
Research Physicist and Project Leader, Cryogenics Div., Thermophysical Properties Div., Chem. Sci. Eng. Div., Chemical Engineering Division, Thermophysics Division (Boulder), 1968-1995
Group Leader, Cryogenic Technologies Group, Physical and Chemical Properties Division (Boulder), 1995-2009
NIST Fellow, Thermophysical Properties Division, 838, CSTL (Boulder), 2009-Present

HONORS:

R&D100 Award, Coolahoop Cryogenic Refrigerator (1990)
J&E Hall Gold Medal, Institute of Refrigeration (London) (1999)
US Department of Commerce Silver Medal (1995) and Gold Medal (2003)
Jacob Rabinow Applied Research Award, NIST (2001)
Robert W. Vance Award, Cryogenic Society of America (2001) and Lifetime Membership Award (2006)
Samuel C. Collins Award, Cryogenic Engineering Conference, Outstanding Contribution to Cryogenic Technology (2009)

MEMBERSHIPS:

Cryogenic Society of America

PUBLICATIONS:

More than 170 publications including:

Radebaugh, R., *Thermodynamic Properties of He3-He4 Solutions with Applications to the He3-He4 Dilution Refrigerator*, NBS Technical Note 362 (1967)
Marquardt, E. D., Radebaugh, R., and Dobak, J., "A Cryogenic Catheter for Treating Heart Arrhythmia", *Adv. Cryogenic Eng.* 43, 903-910 (1998)
Radebaugh, R., "Pulse Tube Oxygen Liquefier", *Adv. Cryogenic Eng.* 45, 457-464 (2000)
Patents on Acoustic Cryocooler, Miniature Mixed Gas Refrigeration System, Flexible Catheter Cryosurgical System, Cryogenic Heat Exchanger, and Mixed Gas Refrigeration
Radebaugh, R., "Refrigeration for Superconductors," *Proc. IEEE, Special Issue on Applications of Superconductivity* 92, 1719-1734 (2004)
Radebaugh, R., "Cryocoolers: The state of the Art and Recent Developments," *J. Phys.: Condens. Matter* 21, 164219 (2009)