

William H. Woodruff, Ph.D.

Professional Profile

William Woodruff specializes in accident reconstruction and mechanical system analysis. He has extensive experience in accident reconstruction involving automobiles, heavy trucks and buses, and construction equipment. Dr. Woodruff also has experience in the following areas: Automotive (design; construction; maintenance; repair); Manufacturing processes (machining operations; welding methods; cutting, forming and finishing operations); Fluid dynamics (compressible and incompressible flow; supersonic and hypersonic phenomena); Combustion (turbulent and laminar mixing; equilibrium and finite rate chemical reactions; detonations; deflagrations); Heat transfer (boundary layer thermal loads; thermal management); Numerical simulation (computational fluid dynamics; simplified system models; code development); General aviation; Synoptic meteorology

Dr. Woodruff was previously a consulting engineer with ProAnalysis, Inc. and Failure Analysis Associates, Inc. He has also served as a researcher at the NASA Langley Research Center in the Applied Acoustics and Hypersonic Propulsion Divisions, and as a researcher and lecturer at the University of Michigan in the Aerospace Engineering Department.

Credentials and Professional Affiliations

B.S. (Aerospace Engineering), University of Illinois, with Honors, 1989

M.S. (Aerospace Engineering), University of Michigan, 1992 Ph.D.

(Aerospace Engineering), University of Michigan, 1996

Member, Society of Automotive Engineers

Member, Sigma Gamma Tau

Private Pilot

Publications

“Driver Adjustment to Solar Glare,” Proceedings of the Human Factors and Ergonomic Society 48th pp. 2295–2299, 2004 (with T. J. Ayres and R. Kelkar).

“A Modular Analysis of the SCRamjet Combustion Chamber,” Ph.D. Thesis, University of Michigan, 1996.

“Proposed modification of the Flow Impedance Tube Facility,” Applied Acoustics Division, NASA LaRC, 1991.

“High Frequency Pressure Measurements in the SCRamjet Engine,” Hypersonic Propulsions Division, NASA LaRC, 1989.