



Timothy J. Eden, Ph.D.
Head of the Materials Processing Division
The Applied Research Laboratory
Professor of Engineering Science and Mechanics
The Pennsylvania State University
3075 Research Drive, State College, PA 16801
tje1@psu.edu

Timothy J. Eden, Ph.D. holds positions at the Pennsylvania State University as research professor and head of the Materials Processing Division at the Applied Research Laboratory and professor of Engineering Science and Mechanics. The Applied Research Laboratory is a Navy designated University Affiliated Research Center (UARC) that focuses on performing applied research for the US Navy and DoD. He has been at the Pennsylvania State University for 28 years. Dr. Eden manages diverse research groups that focus on the synthesis, characterization and application of materials, the development and transition of material processes, repair and sustainment technology and developing material solutions for the DoD, DoE, DARPA, NASA and industry. The five groups in the Materials Processing Division are the Metals and Ceramics Processing Department, The Advanced Coatings Department, the Electronic Materials and Devices Department, the Drivetrain Center and the High Pressure Laboratory. He is responsible for program development, technology development, transition and implementation, mentoring faculty, staff and students, managing multidisciplinary technology programs and securing research funding. Dr. Eden has been the principal investigator or co-principal on more than 100 funded research programs for the Navy, Army, Marines, Air Force and a wide range of private DoD contractors and commercial companies. He has supported several small businesses that were awarded Phase 1, 2 and 2.5 SBIRs and STTRs. He has worked with small businesses to reduce the time needed to transition technology to the warfighter.

Research activities include development and transition of material consolidation technologies for metal, ceramic, metal-matrix composites, laminated and multifunctional structures, development and characterization of corrosion resistant, wear resistant and erosion resistant materials, development of ceramic and aluminum armor, materials testing and characterization, thermo-mechanical processing, thermal management, combustion, multiphase flow and heat transfer and tribology. Dr. Eden is an internationally recognized expert in Cold Spray Technology and has been recognized by the DoD for developing and transitioning Cold Spray (CS) technology to depots, fleet readiness centers, shipyards and maintenance facilities. Several CS applications have been approved for submarines, surface ships, aircraft and ground vehicles. Dr Eden has received several awards including the National Defense Manufacturing Technology Achievement Award for Cold Spray Repair of Aerospace Components and Program of the Year (2012) and for the Environmental Security Technology Certification Program (ESTCP) for developing a cold spray process to prevent corrosion on military helicopter transmission housings (2012). He is a board member of the DoD's Cold Spray Action Team.

Dr. Eden has co-authored 38 peer-reviewed publications, five book chapters and has given over 150 technical presentations. He is on the editorial committee for the Journal of Thermal Spray Technology and a reviewer for several other technical journals. Dr. Eden earned M.S (1986) and a Ph.D. (1996) in Mechanical Engineering at the Pennsylvania State University. He earned a B.S. in Mechanical Engineering in 1985 from the University of Utah. He worked at Morton-Thiokol from 1986 to 1990 prior to joining the Applied Research Laboratory in 1990.