Konstantin Matveev

Konstantin Matveev earned his BS and MS degrees in Applied Physics from Moscow Institute of Physics and Technology in 1994 and 1996 and a PhD degree in Mechanical Engineering from California Institute of Technology in 2003. His MS thesis focused on high-amplitude sound propagation in complex media, and his PhD work was on thermoacoustic instabilities in resonators with applications to rocket motors. Dr. Matveev carried out his post-doctoral research at Los Alamos National Laboratory, where he investigated nonlinear thermofluid phenomena occurring in thermoacoustic engines and refrigerators. After that, he worked as Research Scientist at the marine/civil engineering firm Art Anderson Associates in Bremerton, WA. In 2006, Dr. Matveev joined Washington State University (WSU) as Assistant Professor and was promoted to Associate and Full Professor ranks in 2012 and 2019, respectively. In 2019-2022, he also served as Associate Chair of the School of Mechanical and Materials Engineering. At WSU, he explored miniature thermoacoustic prime movers and coolers and conducted modeling of heat-sound interactions in porous media. He also developed advanced marine and aerial vehicles; and an air-lubrication drag reduction system stemming from one of his projects has been implemented on marine vessels worldwide. In recent years, Dr. Matveev extended his work to low-temperature systems, carrying out both computational and experimental research on cryogenic hydrogen storage and cooling, non-equilibrium multi-phase cryogenic flows, acoustic oscillations in cryogenic environments, and para-orthohydrogen conversion. He carries out reduced-order modeling, conducts high-fidelity computational simulations, and develops experimental systems for cryogenic hydrogen. In 2021, Dr. Matveev was elected Fellow of the American Society of Mechanical Engineers. He is a co-instructor for a short course on hydrogen science and engineering offered at 2023 Cryogenic Engineering Conference. Dr. Matveev's research work has been supported by NSF, DOE, DARPA, ONR, NASA, and world-leading companies.