

The John R. Koeing Lifetime Achievement Award was created by NSMMS in 2019, and recognizes and honors a person from Government, Industry, or Academia, who over a sustained period of time, nominally greater than 20 years, exemplified the following traits:

- Made significant contributions to the space and missile materials community;
- Exemplified technical and/or organizational leadership; and
- Inspired others in the field and provided mentorship.

This year's recipient is **Dr. Mark M. Opeka**, who embodies all that this award represents. Mark has worked his entire career conducting research and development of very high temperature materials for missile propulsion and high-speed vehicle thermal protection systems. After completing his BS (1980) and MS (1983) in Mechanical Engineering from the University of Maryland, he went on to earn his PhD (1995) in Materials Science and Engineering also from the University of Maryland, with an emphasis in metallurgical thermodynamics and oxidation kinetics. In his 43-year Navy career he was associated with the Extreme Materials Group at the Naval Surface Warfare Center, Carderock Division in Bethesda, MD, and was involved in research and development associated with technical ceramics, ceramic composites, and refractory metals and alloys. Dr. Opeka was the Propulsion Materials Subject Matter Expert for the Missile Defense Agency and provided technical direction of propulsion materials development and of the building of design property databases. He was the Conference Chairman for 25 years for the Annual Conference on Composites, Materials, and Structures held in Cape Canaveral, FL. Because of his expertise and interest in these advanced materials, he has been very proactive in promoting and aiding the development of advanced materials for use by various rocket propulsion contractors. This was exemplified through his role as program monitor, as well as mentor for a multitude of Small Business Innovative Research (SBIR) contracts dealing with carbon-carbon composites, ceramic matrix composites, very high temperature refractory metals and ceramics with respect to types and manufacturing nuances. Such advanced materials include tungsten and molybdenum rhenium alloys, structural insulative ceramic composites, binary and ternary carbides, nitrides, and diborides and of course advanced manufacturing techniques for these types on material constructs. In this capacity he has assembled successful working teams associated with companies like Southern Research, MR&D, and various rocket propulsion companies in concert with many of the innovative material development companies. Noteworthy is Mark's focus in developing a material properties databases for many of the materials developed, such that without these databases, many of these advanced materials would not be seriously considered in advanced propulsion concepts. He has developed many active relationships across the various DoD laboratories and with individuals in the Navy, Army, Air Force, NASA, and universities. After 45 years in high temperature materials R&D, the most recent two with Kratos SRE, a new passion is mentoring the next generation of materials scientists and engineers.