

Marvin Hamstad – Brief Biography

Dr. Hamstad has been continuously involved in acoustic emission (AE) research and applications since 1971, and he has carried out AE projects in the USA and Europe. Dr. Hamstad's research has covered many areas of AE technology ranging from NDT applications to materials characterization to AE instrumentation design/characterization. He developed production NDT applications by AE at LLNL. Dr. Hamstad is a founding associate editor of the international journal Structural Health Monitoring and served on the editorial board of the Journal of Acoustic Emission. Some highlights:

- 40 plus years in AE R/D documented in over 130 publications with collaborators involving flawed and unflawed samples from composites, metals, ceramics, woods and polymers.
- AE monitoring during tension, compression, biaxial loading, fatigue, pressurization, stress rupture and proof testing.
- At NIST key AE advances focused on wideband waveform-based AE (with colleagues):
 - First in world finite element modeling an AE source and subsequent wave propagation from the near to the far field. Also, modeled reflections from boundaries. Validated by use of absolutely calibrated secondary standard AE sensor. Extensive studies on both thin and thick plates.
 - Development of first practical high sensitivity near flat-with-frequency AE sensor in 1995.
- Specialist in AE wave propagation plates and rods, COPVs, AE sensors, FEM modeling of AE
- Active member of ASTM E07 AE subcommittee and a primary author of some new and revised ASTM AE documents.
- Active member of Acoustic Emission Working Group (AEWG) and Gold Medal Award winner.
- Presented research at Japan AE and European AE international conferences.

Dr. Hamstad earned his Ph.D. at the University of California, Berkeley. For 13 years his AE R/D efforts were carried out at LLNL. LLNL was a "birthplace" of AE technology in the U.S. From 1984 to the present, Prof. Hamstad continued his AE work at the University of Denver. DU has a long history in AE, starting in the late 1960s under the leadership of Prof. Carpenter. Since 1992, Dr. Hamstad has also had various associations with NIST in Boulder, CO. Dr. Hamstad provided key leadership as chairman (16 years until 1999) of the CARP (Committee on Acoustic Emission from Reinforced Plastics) Division of ASNT. During his tenure as CARP chairman, he continued the Acoustic Emission from Composite Materials (AECM) international symposium series which started in 1983 and continued at 3 year intervals at four additional sites in 1986 through 1998.