



Stephen W. Tsai

Born and raised in Beijing, Steve Tsai earned his D.Eng at Yale University in 1961. He began his work in composites at Ford/Aeronutronic, continued onto Washington University in 1966, Air Force Materials Laboratory in 1968; and Stanford University since 1990. His early works included Tsai-Hill and Tsai-Wu failure criteria, lamination parameter plots, and invariant transformation relations. He started *Journal of Composite Materials* in 1967, and co-authored *Introduction to Composite Materials* in 1980. He was elected to the US Academy of Engineers in 1995. Since his retirement from Stanford in 2001, his work led to single parameters for laminate stiffness in Tsai's modulus, and von Mises area in laminate failure envelopes. Materials and laminates can then be ranked and scaled. He also discovered double-double lamination that is rapidly replacing the legacy Quad. He conducted 17 annual Composites Workshop at the University of California/Berkely up to 1991; and 27 online workshops at Stanford since 2006. His goal is to make composite laminates easy to understand and can achieve a weight savings of 50 percent, layup rate of 6X, ply drops in singles, and other innovations. Composites will become more competitive and fulfill the anticipated promise.