In this talk I will present my recent research on heterogeneous materials systems with complex microstructures. Notions of direct numerical simulations of complex microstructures using Trefftz, Quasi-Trefftz, and Symmetric Galerkin BEM methods will be discussed. Near-Exact and highly efficient elastic-plastic homogenizations of low-mass metallic cellular materials with architected microstructures will be presented. Damage propagation using the MLPG-Eshelby Method will be presented.
Satya Atluri, who is currently employed by Texas Tech University, has mentored nearly 700 students, postdocs, and visiting professors, in his 50 years of academic career. The details of his career may be found at:

http://www.depts.ttu.edu/coe/CARES/atluri.php