Liliana Stan
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Liliana Stan has advanced knowledge in designing, synthesis, and characterization of multilayered thin-film structures. Her expertise includes physical vapor deposition techniques, such as sputtering, ion-beam-assisted deposition (IBAD), and e-beam evaporation, and characterization of metal-oxide films and multifunctional nanocomposites. At the base of her research on understanding of the processing-microstructure-property relationships of materials using multilayered heteroepitaxial structures is her work in the development of biaxially oriented (single crystal-like) thin films grown on amorphous substrates using IBAD.

Liliana received her B. S. in Physics from University of Bucharest, Romania, and her M. S. in Electrical Engineering from theUniversity of New Mexico. She worked at Los Alamos National Laboratory for ten years, where she played a key role in the design, characterization, and optimization of multilayered thin films for high-temperature superconducting (HTS) coated conductors (CC) and for electronic devices. The technology developed as a result of this research has been extended to large-scale production by an industrial partner who became one of the world leaders in production of HTS CC and related applications.

In parallel, Liliana studied structure-property relationships of complex oxides such as Y-Hf-O and RE-Zr-O. Her work resulted in the development of a thin-film template for the growth of epitaxial ZnO films on silicon substrates. This research opens the possibility of integration of c-axis-oriented hexagonal wide-band semiconductors with cubic and amorphous substrates. She also developed thin-film multilayered structures as catalysts for the growth of carbon nanotube (CNT) arrays, resulting in longer, spinnable carbon nanotubes for producing CNT fibers with superior strength and electrical conductivity.

Liliana has co-authored over 40 publications in peer-reviewed journals and has 5 patents issued.