

Rainer Hahn is Senior Scientist in Surface Engineering at the Technische Universität Wien, Austria. He earned his Ph.D. in 2019 at TU Wien. His research focuses on the micromechanical characterization of ceramic coating materials, with particular emphasis on understanding deformation and fracture mechanisms at small length scales. A central objective of his work is to establish robust structure–property relationships by systematically correlating microstructure, morphology, and crystallographic features with mechanical performance.

To achieve this, his research integrates advanced micromechanical testing methods, such as nanoindentation, micropillar compression, and micro-cantilever bending, with comprehensive structural and morphological analysis. X-ray diffraction (XRD) and electron microscopy (SEM/TEM) play a key role in quantifying crystallinity, texture, defect structures, and phase constitution. His work contributes to the design of high-performance ceramic coatings for demanding applications where mechanical reliability is critical.