

EROSION CHARACTERISTICS OF COATED SUPERALLOYS  
IN TURBOMACHINERY APPLICATIONS

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**ABSTRACT**

The ingestion of suspended particles by high performance turbomachinery reduces engine efficiency and life. New developments in blade coating materials have contributed to compressor and turbine design improvements. A knowledge of the important phenomena associated with material erosion by particulate flow is required in the design. This paper gives an overview of the experimental studies of the erosion characteristics of coated superalloy blades conducted at the University of Cincinnati's test facilities for blade and coating materials erosion will be described. Results will be presented and discussed for the erosion characteristics of various blade materials and coatings. The investigated coatings are produced via plasma spray, detonation guns, chemical vapor deposition (CVD), and physical vapor deposition (PVD).

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