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# WEAR-RESISTANCE INVESTIGATIONS ON CERAMIC COATINGS FOR LUNAR DUST MITIGATION

**Abstract**

Lunar dust has posed a major challenge to exploration efforts due abrasion and impact. This work focuses on fundamental studies of Zirconia-based ceramic coatings as candidates for enhanced resistance to impact and wear due to their superior strength, transformation toughening mechanism and surface hardness. Abrasion testing was carried out on these coatings with measurements made by assessing the mass loss, with a standard scale, and thickness, with an Eddy current probe, at various intervals. In addition, surface roughness was measured with a profilometer at the same varying intervals. The results of these measurements provided insight to the wear behavior of these coatings.