The Industrialization of Suspension Spraying - Recent Developments and New Potentials

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In the last two years, suspension spraying has gone from being a process under development, to a qualified and industrially accepted coating method. The aerospace certification of suspensions demonstrates the great advances that have been made in the decades since the technique was first developed.

While the first coating applications are entering industrial use, there remains a great deal of scope in the development of the suspension spraying process. In the area of thermal barrier coatings there is the potential to further increase coating performance, processing rate and efficiency. Potentially making the SPS process an effective alternative to traditional air plasma spray coating, not only EB-PVD.

Further developments of the coating technique are realizing the potential for new applications in fields like wear, erosion and corrosion resistance. In some cases this can be the development of higher performance replacements for traditional APS and HVOF coatings. Suspensions allow the production of composite mixtures of materials that previously could not be sprayed reliably with dry powder techniques. There exists also the potential for combining powders and suspensions of vastly different materials to produce hybrid coatings with improved performance.

This presentation will focus on some of the more recent developments in suspension development and possible directions for future coatings.