Uniform margins of 2.54 cm. **Title: Arial, 14 pt font bold.** Text: Arial, 12 pt font

Additive Manufacturing *via* Thermal Spray Technologies: Transforming Science into Industrial Applications

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Thermal spray (TS) coatings are manufactured by "layer-on-layer" processing and hence can be considered as part of the additive manufacturing family. Thermal spray technologies are pervasive throughout the manufacturing and industrial communities and function within adverse environments. This experience of many decades provides valuable lessons for the modern AM community.

The science and process technology of TS involves injecting a stream of particles into an intense processing zone. These particles, which may consist of metals, ceramics, polymers or mixtures of these, are propelled towards a substrate and form an additive layer-on-layer deposit. The composite like nature of TS coatings confers unique materials properties. For instance, the properties are unlike those of their bulk material counterparts that may be manufactured by pressing, sintering and rolling. Therefore, a great deal of effort has established test methods to derive engineering data that is used for design purposes. Finally, case histories will be presented where TS coatings have provided economic benefits to manufacturing and industrial applications.

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Biography

Chris Berndt graduated in 1977 with a BAppSc. in Metallurgy, from what is now called the University of South Australia. His PhD was earned in the Materials Engineering Department of Monash University in mid-1981. His higher doctorate, DEng, was awarded in 2014. He is the Director of SEAM; "Surface Engineering for Advanced Materials"; which is based at Swinburne University of Technology.

Chris' professional interests gravitate around manufacturing; especially in the area of protective coatings. He was inducted into the Thermal Spray Hall of Fame in 2007. He was the President of the Thermal Spray Society in 2002 through to 2004. He was appointed as a Director of ASM Int. (aka "the American Society of Materials") for 2005-2008. Chris became the President of ASM Int. in October 2011. He was also the President of the Australian Ceramic Society from mid-2008 through to mid-2010.

Chris is especially proud of his students and post docs who have achieved professional prominence and secured good lives over the past 35 years.