**Antler Lecture 2007**

**The Characterization of the Dynamic Arc-Anode Interaction and Using Plasma Deposition of**

**Nanocomposites to Tailor Materials Properties**

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**Professor J.V.R. Heberlein** received the Diploma in Physics from the Technical University Stuttgart, Germany, and the Ph.D. degree in

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From 1975 to 1989 he was at the Westinghouse R&D Center involved in a variety of plasma related applications, first as senior engineer in Power Interruption Research, then as manager of Lamp Research, Applied Plasma Research, and Nuclear and Radiation Technology. Since 1989 he has been at the Mechanical Engineering Department at the University of Minnesota working in the areas of plasma heat transfer, electrode effects, plasma instabilities and various plasma process developments, in particular for plasma deposition of special coatings and for nanoparticle synthesis. He has authored or co-authored more than 250 publications and 6 book chapters, and holds 12 patents. He was awarded the grade of Fellow by ASM International and by the IUPAC, and was elected to the Thermal Spray Hall of Fame of the Thermal Spray Society. He received the Alexander von Humboldt Senior Scientist Award from the German Government. He holds the Ernst Eckert Professorship in Mechanical Engineering at the University of Minnesota.