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Motion of an Arc through a Long Coaxial Channel with an Applied Magnetic Field BRIAN BURES, JASON WRIGHT, ANDREW GERHAN, MAHADEVAN KRISHNAN, ALAMEDA APPLIED SCIENCES CORPORATION TEAM — Cathodic arc plasma deposition is a well established process for the production of decorative coatings. To expand the applications of cathodic arc deposition techniques, Alameda Applied Sciences Corporation has developed a method of depositing thin films on the insides of tubes using our Coaxial Energetic Deposition (CED) process. The CED process uses a cathodic arc from a central cathode to transfer cathode material to the coaxial substrate. The anode is either the coaxial substrate or a mesh anode depending on the application. For example, polymer or ceramic tubes could not serve as anodes. An external solenoid produces a magnetic field so that the arc spirals along the cathode. The axial velocity determines the time spent in the tube while the angular velocity affects the uniformity of the coating within the tube. This paper discusses the effect of variations in both the angular and axial velocity of the arc at different applied magnetic fields, using electric probes.

Brian Bures

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