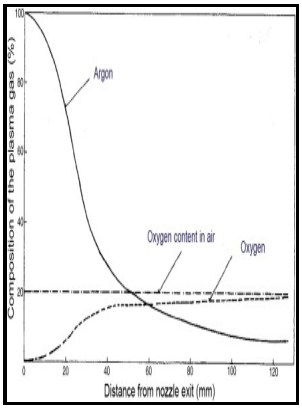
Performance characteristics of a vortex stabilized plasma generator using argon

McDonnell Aircraft Corporation, Research Dept. - Aspects of energy transport in a vortex stabilized arc



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The Impact of Molecular Radiation Processes in Water Plasma on Performance of Water

Compared to the conventional rotating arc reactor, this yields much higher CH 4 and CO 2 conversion i.

Aspects of energy transport in a vortex stabilized arc

The mass flow rate of the gas is measured with both a rotameter type gas flow meter, and a venturi mounted in the inlet flow line Fig. National Toxicology Programme, 1982 , Technical Report Series No.

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For arcs such as the one used in this work the effect of the self magnetic field may be neglected in the positive column. The radiation shows a similar peak associated with the cathode flame, as well as one associated with the anode, if the anode is located downstream in the vortex. A plasma separation means 22 provided with a flame casing 26 and located just in front of the substrate 25 separates only the plasma 18 from the plasma flame 23 containing the fused spray particles 21, and the fused spray particles 21 comes into collision with the substrate just after the separation to thereby form a sprayed coating 24.

Generalization of the operating characteristics of a segmented plasma generator with constricted channel

However, if turbulence were important for the transport of heat from the arc column to the wall one would expect a dependence of the wall loading and also radiation on the flow rate of the gas. In these cases, since the present invention can use various kinds of gases as a plasma gas, it is applicable to a wide variety of fields.

The Impact of Molecular Radiation Processes in Water Plasma on Performance of Water

The axial profile of radiation produced by the arc has also been measured. A main torch 1 of the embodiment is composed of an insulator 27 having a main gas inlet 5, a main casing 4 having a discharge port, an insulator 29 having a second main gas inlet 32, a main casing having a discharge port, an insulator 29 having a second main gas inlet 32, a second main casing 31 having a discharge port, an insulator 29 having a third main gas inlet 39, a third main casing 41 having a narrow port disposed in this order toward the extreme end of an main cathode 3 in alignment with the axis of thereof, the above components having the same diameter, and a main power supply 7 having a negative terminal connected to the main cathode 3 and a positive terminal connected to the main casing 4, the second main casing 31, and the third main casing 41 through switch means 8, 34 and 46, respectively.

Vortex arc generator and method of controlling the length of the arc

Curzon for his support and guidance throughout the course of this work, and for the many useful suggestions he has made.

Aspects of energy transport in a vortex stabilized arc

Finally an estima-tion is made of the influence of the azimuthal velocity of the vortex on the arc.

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