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Spectroscopy Analysis of Transferred Type Arc Plasma with Argon Steam Mixture for Decomposition Process of Stable Matters

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Generation of atmospheric arc plasma with some chemical activity is performed with a transferred type dc arc discharge. A commercially available welding torch is used with argon steam mixture as operation gas. As steam mol percentage increases in the mixture, input power to arc plasma increases and generated plasma appearance clearly changes. Spectroscopy analysis shows that complete dissociation of additional steam leads to increment of H and O radicals in the arc plasma.

Keywords : Transferred type arc discharge, Argon steam mixture plasma, Radical species