
Experimental study of atmospheric pressure plasma jet in mixture of a noble gas and atmospheric pressure natural air.

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In this work, effect of addition of natural atmospheric pressure air with noble gas (Argon) has been studied experimentally. To allow the flow of natural air inside the quartz tube, the traditional plasma jet has been modified by drilling a small hole at the surface of quartz tube; Argon gas with high speed creates pressure drop inside tube as a result, natural air is permissible to penetrate the tube to equalize this difference; quantity of natural air inside the tube is calculated by using simple fluid dynamics. The operational range of devices in our configuration exists for only low argon gas flow rate of 200-600 sccm at selected applied voltage of 3 kV. As compared to conventional jet, it produces abundant RONS due to mixing of surrounding air and the gas temperature remains close to room temperature therefore this plasma jet will be new contribution to biomedical application of plasma jets.