Non-thermal atmospheric pressure plasma source design and construction using Argon as the working gas for wound healing

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Abstract
In this research, a non-thermal atmospheric pressure plasma jet device was constructed for skin wound treatment. For this reason, five mice were treated for five consecutive days for 30 s, in a daily manner. Natural wound healing time was monitored and compared with the treated one in 12 consecutive days. The measurement of voltage, current and power waveforms of the plasma source, the optical emission spectra of plasma, the reduction of the wound area, and the morphological changes in wounds were studied. The wounds treated with Ar plasma jet were healed sooner than the control wounds, especially in the first days after wounding. Statistical analysis was also done on all treated and control wound reduction ratio values and compared with each other.

Keywords: atmospheric pressure plasma, Argon Plasma Jet, wound healing

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