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Electrical Characteristic and Radicals Determination of Air Plasma Jet

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Currently, production of an air plasma jet is the remarkable innovation that converts air to heal infected wounds. The aim of this research is characterizing air plasma jet in burst mode. Plasma power is varied by pulse delay from 5 to 40 μs at fixed pulse width and the number of pulse from 2 to 10 pulses at fixed burst mode frequency. Then, plasma radicals are determined using Optical Emission Spectroscopy (OES) by pulse delay variation from 5 to 40 μs, number of pulse variation from 2 to 10 pulses, and air velocity of 2 to 6.5 SLM. The results show that air plasma jet produces suitable radicals for biomedical applications, including nitric oxide and ROS radicals such as hydroxyl radicals (OH), oxide radicals (O), and ozone (O_3). The plasma power can be controlled by pulse delay and number of pulse.

Keyword: Air plasma jet, Electrical characteristic, Radicals determination

Author: Mr PALEE, Nattawut (Chiang Mai University)

Co-authors: Dr BOONYAWAN, Dheerawan (Chiang Mai University); THANA, Phuthidhorn

Presenter: Mr PALEE, Nattawut (Chiang Mai University)

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