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Comparison of RONS generation and biodecontamination by atmospheric pressure plasma sources: Transient spark, mini glide-arc and dielectric barrier discharge jet

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Different types of discharges are being used for industrial plasma generation, but the most promising are those, which existing solely or in the arranged matrix can produce plasma in relatively large volume at low temperature and at atmospheric pressure [1-5].

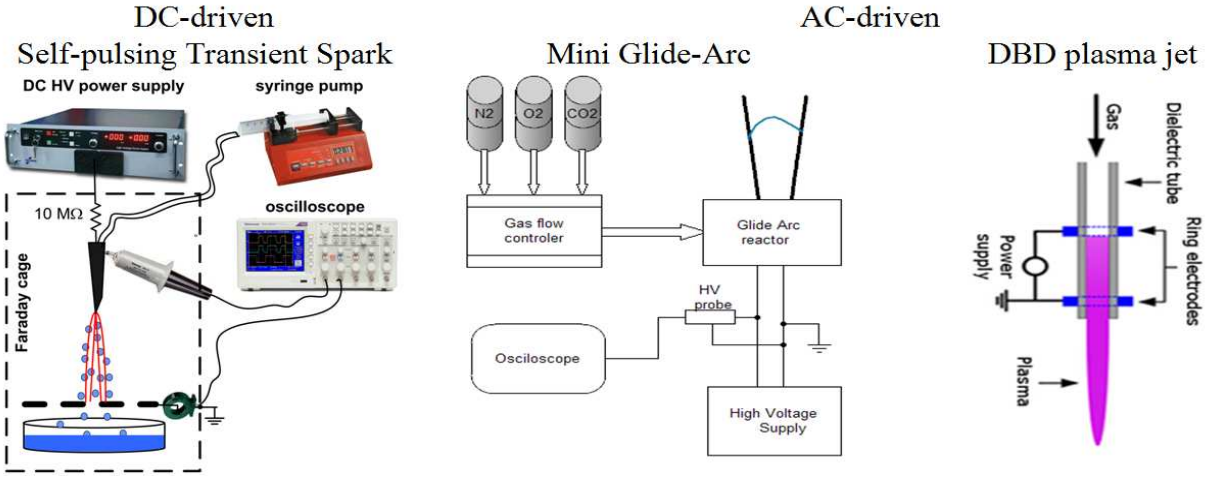

Fig. 1 Atmospheric pressure plasma reactors.

Reactive oxygen and nitrogen species (RONS) were measured in gas and treated water solutions for three types of plasma generators: Transient Spark (TS) and Mini Glide-arc (GA) in air and N_2/O_2 mixtures, and Dielectric Barrier Discharge Jet (DBDJ) in He blown into air to find optimal operational conditions for selected biomedical applications. *Escherichia coli* was selected as a model microorganism for biodecontamination comparative tests.

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