Characteristics of Nanosecond Pulsed Streamer Discharge

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Non-thermal plasmas have been one of the promising technologies for gas processing such as removal of hazardous environmental pollutants in gases or ozone generation. A pulsed streamer discharge in atmospheric pressure gases is one type of non-thermal plasma and has received a great deal of interest for many years. The critical factor to enable this technique for industrial application is to improve the energy efficiency of the plasma processing. It is already known that the pulse width of the applied voltage has a strong influence on obtaining higher energy efficiency [1]. For further investigations, it is necessary to know the propagation mechanism of the pulsed streamer discharges. In this work, the characteristics of streamer discharges based on different pulsed duration, voltage rise time, electrodes geometry and further parameters will be presented.

[1] D. Wang, et al., Journal of Advanced Oxidation Technologies, **14** (1), 131-137 (2011)