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**Experimental study of a novel micro-wire dielectric barrier discharge** JORIS CREEMERS, ALEC DE KUYPER, PETER BRUGGEMAN, CHRISTOPHE LEYS, Ghent University — Many types of dielectric barrier discharge (DBD) configurations have been studied in the past as a way to produce non-thermal plasma at atmospheric pressure. Most are based on parallel plane or coaxial electrodes. The electrode configuration studied in this paper has a coaxial geometry, where the inner electrode is a novel glass-coated micro-wire coil. We investigate the effects of the very small diameter of the wire ( $\sim 30 \mu\text{m}$ ) on the characteristics of the discharge. The influence of the excitation frequency (50 Hz - 50 kHz) on the current waveform is analyzed. In view of applications, the ozone production efficiency is compared with standard DBDs.

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