Abstract Submitted
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Feed gas humidity introduced into a MHz atmospheric pressure argon plasma jet affects plasma-generated species and plasma-treated human skin cells[1] JÖRN WINTER, KRISTIAN WENDE, MALTE U. HAMMER, HELENA TRESP, SYLVAIN ISENI, MARIO DÜNNBIER, KAI MASUR, ZIK plasmatis at the INP Greifswald e.V., KLAUS-DIETER WELTMANN, INP Greifswald, STEPHAN REUTER, ZIK plasmatis at the INP Greifswald e.V. — It is known, that gas humidity is an important parameter in plasma treatment of biological systems under ambient conditions. However, humidity in the feed gas of an atmospheric pressure plasma jet is even more crucial than ambient humidity since humid working gas is transported through the active plasma zone and the water molecules become dissociated. The so produced oxygen/hydrogen species are significant for the active plasma component composition. In this work the effect of feed gas humidity on the plasma, on plasma-treated cell growth medium (RPMI) and subsequently on human skin cells is investigated. It is shown, that already small concentrations of humidity (<1000 ppm) induce changes in the optical emission spectrum of the effluent, increase H_2O_2 concentration in liquid cell growth medium and inhibit human skin cell proliferation.

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