

Abstract Submitted
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Non-thermal atmospheric plasmas in dentistry¹ RAYMOND SLADEK, EVA STOFFELS, Eindhoven University of Technology — Non-thermal atmospheric plasmas are very efficient in the deactivation of bacteria. A relatively new area is the use of these plasmas in biomedical and dental applications. In this work, application of a novel device in dentistry is investigated, the plasma needle. The plasma needle is used to generate a non-thermal atmospheric micro-plasma. A promising application of this micro-plasma is the treatment of dental cavities, to stop caries without causing pain and removing too much healthy tissue. Various bacterial model systems are used to test the bactericidal efficiency of the plasma needle: bacteria in droplets, thin films and (multi-species) biofilms. The effects of plasma needle treatment on bacterial viability, growth and composition are discussed. The results indicate that plasma can become a useful tool for dental treatment.

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