

Abstract Submitted
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Plasma needle treatment of bacteria known to cause infections of the soft tissue of the oral region and bones DEJAN MALETIC, SASA LAZOVIC, NEVENA PUAC, GORDANA MALOVIC, ZORAN LJ. PETROVIC, Institute of Physics, Belgrade, Serbia, MAJA P. MILETIC, DUSAN B. PAVLICA, MILENA Z. JOVANOVIC, PAVLE MILENKOVIC, Faculty of Stomatology, Belgrade, Serbia — Plasma needle can be used for non-contact disinfection of dental cavities and wounds, minimum-destructive precise treatment, as well as the removal of damaged tissue. The effect of bacterial deactivation is probably caused by reactive oxygen species while nitric oxide provided by plasma plays major role in many processes in the organism. Mass spectrometry was done to provide better insight into plasma-cell interactions. Our measurements were performed on a plasma needle that we originally used for the treatment of plant cells. Our research was done on species that are known to cause primary and secondary infections of the soft tissue of the oral region, as well as bones. The bacteria cultures used are bacterial reference culture species *Staphylococcus aureus* ATCC 25923, *Enterococcus faecalis* ATCC 29212, *Pseudomonas aeruginosa* ATCC 27853, and *Escherichia coli* ATCC 25922. We investigated the effect of the plasma needle discharge on different concentration of bacteria using several exposure times and power transmitted to the plasma. It was found that excellent removal of this and other bacteria may be achieved by the plasma needle treatment.

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