

Abstract Submitted
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RF multi-jet, atmospheric plasma for metal substrate cleaning
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Dublin City University, NCPST TEAM — During the manufacturing process of
orthopaedic implants, the cleaning step plays an essential role to achieve the bio-
compatibility required for the implant to be successful. We propose a new radio fre-
quency multi-jet atmospheric pressure, low temperature plasma process for removal
of organic residues from the implant's surfaces. The advantage of this method over
the ones currently in practice is the lack of remains from the added chemical cleaning
agents. The plasma jets are produced using a 13.56 MHz matched RF applied volt-
age in a controlled He/O₂/Ar gas mixture. The polished and rough test substrates
are purposely “spiked” with contaminants which get in the contact with the metal
surface during the manufacturing process. The cleaning efficacy is measured using
FTIR and XPS. This research was conducted with the financial support of Science
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