

Article: plasma aids dental bonding

[Eureka](#) is a very highly regarded engineering magazine, so we were excited to see a two-page spread in the latest issue given over to our article **Plasma Aids Dental Bonding**. [See page 32](#) to read how cold atmospheric plasma technology delivers benefits in dental labs. It features the [PiezoBrush PZ3](#), the world's smallest, highly effective handheld plasma treatment device.

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PLASMA AIDS DENTAL BONDING

Here Peter Swanson, managing director of Intertronics, discusses cold atmospheric plasma technology and its applications in dental technology.

Plasma surface treatment technology is well established in many manufacturing industries including medical devices, electronics and automotive. In dental technology, several case studies have been developed, researched and published to help dental technicians perform tasks more efficiently and achieve better results for patients.

Atmospheric plasma technology involves forming a small number of gas molecules into energetic electrons and ions, which can

penetrate the bonding matrix and pre-prepare.

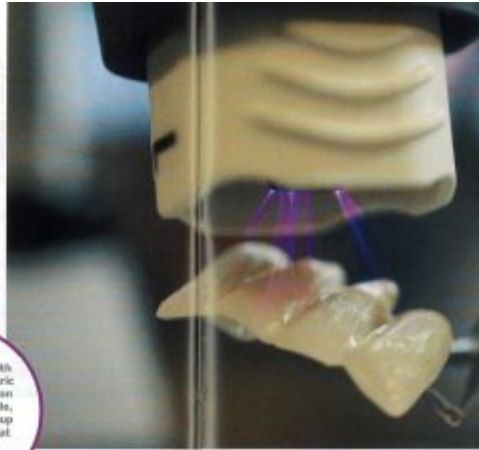
Plasma can break the organic bonds of heavy organic molecules on the surface, producing lighter and more reactive ones. The reactive chemical groups on the organic contaminants, forming molecules like carbon, oxygen and water vapour, that encourage the bond to be in a more stable state. The process also

When plasma is in direct contact with the substrate, electric discharges erode it on the micrometre scale, creating anchor group microstructures that can improve the mechanical binding of a stain.

For colour individualisation of ceramic crowns used to match the colour of the patient's natural teeth, plasma can achieve

require these processes for firing and finishing. Using plasma, this can be reduced to just one process, because plasma helps the crown hold the

with two procedures, instead of two or three glazes, and the treatment of corals



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