

## **Non-thermal Plasmas: Potential Dental Applications**

Nelson RFA Silva, Van P. Thompson, Paulo G. Coelho

Non-thermal plasmas (NTPs) represent a technology for improving the compatibility of materials and biological systems, e.g. through the chemical functionalization, modification, or sterilization of surfaces as a result of reactions induced by one or more plasma-produced chemical species. In addition, NTP-generated free radicals and ultraviolet (UV) light can be potentially utilized for polymerization purposes. This presentation will focus on the current knowledge and propose possible mechanisms by which NTP technology can be employed to substantially change dental restoration chemical interactions, collagen-cross-linking of dentin substrate and implant surfaces chemistry to improve its wetting response leading and enhance long-term performance of dental resin composites and primary stabilization for implantable devices.