# CHAPTER 5

# CONCLUSION

Within the limits of the present study, it was concluded that both the type of post and the type of plasma treatment significantly influenced the tensile-shear bond strength between the composite core build-up material and plasma-treated FRCPs ($p<0.05$). For the FRC posts, $O_2$, Ar, $N_2$, and He+$N_2$ plasma treatments significantly improved the tensile-shear bond strength. For the DT posts, the Ar, $N_2$, and He+$N_2$ plasma treatments significantly improved the tensile-shear bond strength ($p<0.05$). On surface roughness, there were significant differences between the control group and the Ar group and between the $O_2$ and Ar groups ($p<0.05$) for the DT posts. Amongst all the plasma treatment groups, the He + $N_2$ plasma treatment yield the highest tensile-shear bond strength for both types of posts. The most suitable parameters for He+$N_2$ plasma treatment, including the gas pressure, the discharge power, and the treatment time were 26.7 Pa, 75 W, 10 minutes and 26.7 Pa, 50 W, 15 minutes for the FRC posts the DT posts respectively. However, the plasma treatment time and the hydrothermal effect significant influenced the tensile shear bond strength ($p<0.05$) of plasma-treated fiber reinforced post. In addition, the main factor of hydrothermal effect that influenced the tensile-shear bond strength was the storage temperature. For clinical application, the fiber-reinforced post which composed of epoxy resin can be effectively treated with the mixture of helium and nitrogen plasma.