Atmospheric pressure plasma treatment of glassy carbon for adhesion improvement - DTU Orbit (01/01/2019)

**Atmospheric pressure plasma treatment of glassy carbon for adhesion improvement**

Glassy carbon plates were treated with an atmospheric pressure dielectric barrier discharge (DBD). He gas, gas mixtures of He and reactive gases such as O2, CO2 and NH3, Ar gas and Ar/NH3 gas mixture were used as treatment gases. The oxygen and nitrogen contents on the surface as well as defect density increased with the plasma treatments. Adhesion test of the treated glassy carbon covered with cured epoxy showed cohesive failure, indicating strong bonding after the treatments. This is in contrast to the adhesion tests of untreated samples where the epoxy readily peeled off the glassy carbon.

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