

- **Adhesion improvement of PTFE tubes by atmospheric pressure plasma**

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**Abstract content**

PTFE is widely used in the industrial field in modern society due to some of its excellent properties. However, the adhesion of PTFE often does not meet the criteria for the utilization of PTFE. The main objective of this work is to improve the adhesion of PTFE tubes by diffuse coplanar surface barrier discharge (DCSBD). The PTFE sheets and tubes were treated by the low-temperature, non-equilibrium plasma generated in ambient air, argon, and the mixture of H<sub>2</sub>/N<sub>2</sub> and analyzed to reveal the plasma-induced changes of surface chemistry. The results show that the adhesion of the PTFE tubes can be effectively improved by DCSBD plasma even after short treatment times (1-10 s). The mixture of H<sub>2</sub>/N<sub>2</sub> plasma was found to be the most effective gas mixture for adhesion improvement of PTFE tubes. The results of plasma-treated PTFE tubes with improved adhesion can be utilized e.g. in bio-medical products and PTFE-coated solar tubes.

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