

Supporting information:

Thermogravimetric analysis (TGA)

NETZSCH STA 409 PC/PG was employed to study the pyrolytic degradation of the composite material. A thin layer from the plasma modified surface (41mg) was cut using a diamond saw for the analysis. The samples were heated in an alumina crucible at a heating rate of 10°C/min. In the TGA spectrum, for the non-treated sample, the degradation was observed only in one stage whereas the plasma modified samples showed degradation in 2 stages. The first stage of degradation during pyrolysis, which is only observed for the plasma treated samples shows the existence of smaller polymer or volatile fragments created by plasma degradation and etching. The increased mass loss due to the pyrolysis was much higher for the non-treated sample, which seen from decreased loss within prolonged treatment times, indicating larger quantities of polymer on the sample surface. Beside this results also demonstrate that the char formation possibility decreases with selective etching of polymer.

