

Supplementary Materials of Detailed Thermal Characterization of ABS and PLA Based Carbon Composites Used in Additive Manufacturing

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Measurements were performed to see whether the examined samples suffer any decrease in their mass during 3D printing. Mass change for all four sample types was recorded at lower maximum temperature measurements (Figures S1-S4). The most important temperature values are marked on each curve. With the exemption of the ESD-PLA sample, all other composites lost a maximum 2% (m/m) from their initial mass when they were heated up to 300°C (furnace temperature). If we focus on the typical printing temperatures of these composites (~215 °C for the PLA and ~250 °C for the ABS samples), then there is no significant mass decrease for the samples.

Supplementary Figures

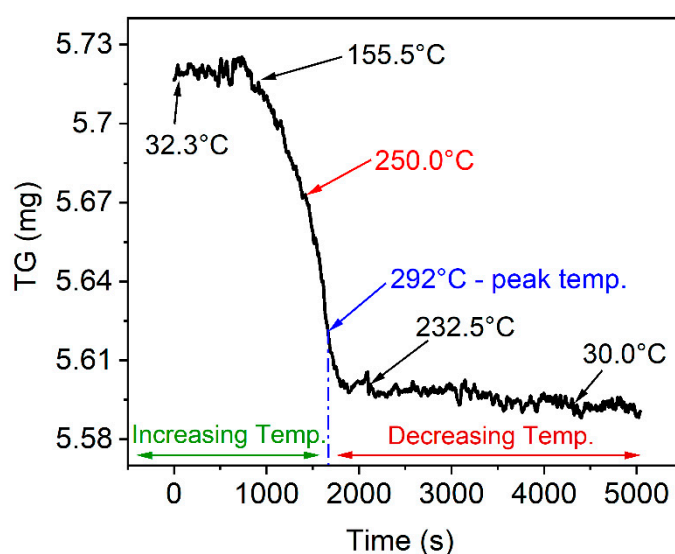


Figure S1. Mass change of the untreated ABS sample during heating (from 30 °C to 300 °C) and cooling (from 300 °C to 30 °C).

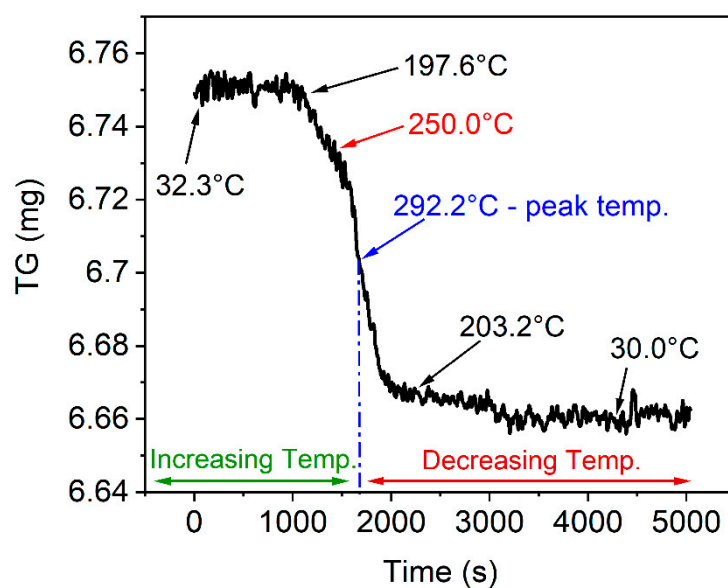


Figure S2. Mass change of the ABS-ESD sample during heating (from 30 °C to 300 °C) and cooling (from 300 °C to 30 °C).

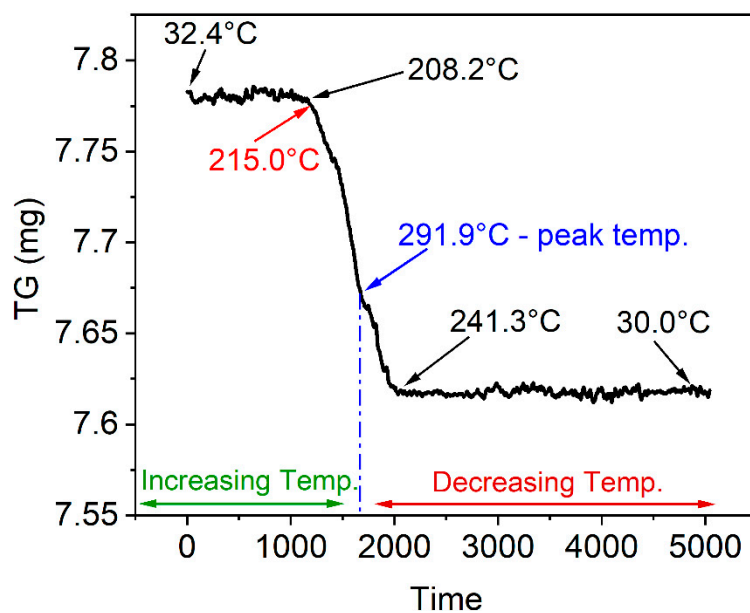


Figure S3. Mass change of the untreated transparent PLA sample during heating (from 30 °C to 300 °C) and cooling (from 300 °C to 30 °C).

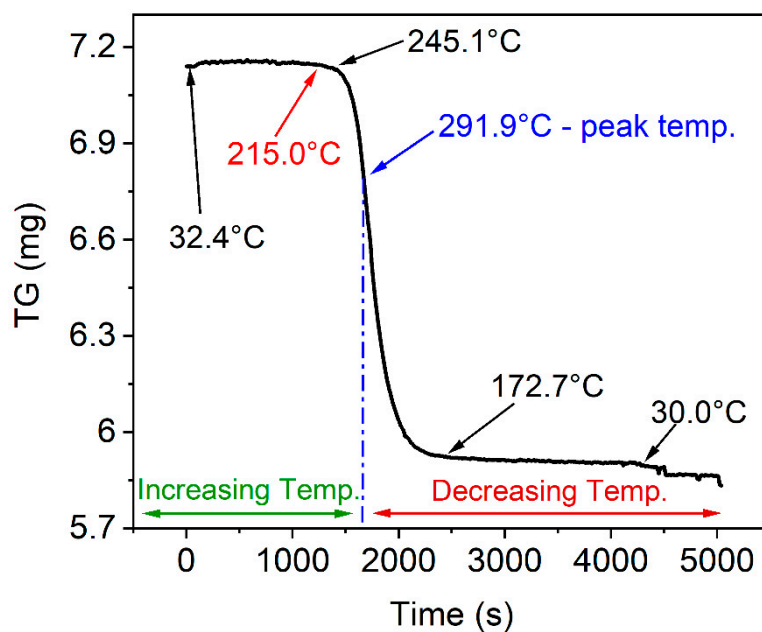


Figure S4. Mass change of PLA-ESD sample during heating (from 30 °C to 300 °C) and cooling (from 300 °C to 30 °C).

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