

# Supplementary Information for 'A Combined Experimental and Modeling Study for Pellet-Fed Extrusion-Based Additive Manufacturing to Evaluate the Impact of the Melting Efficiency'

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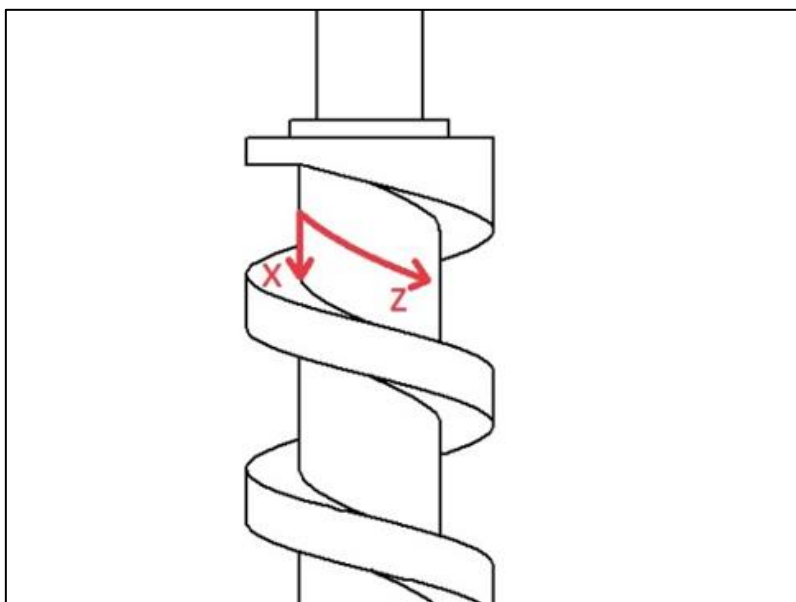


Figure S1 - Definition of  $x$  and  $z$  direction for the general equations for melt removal by drag.

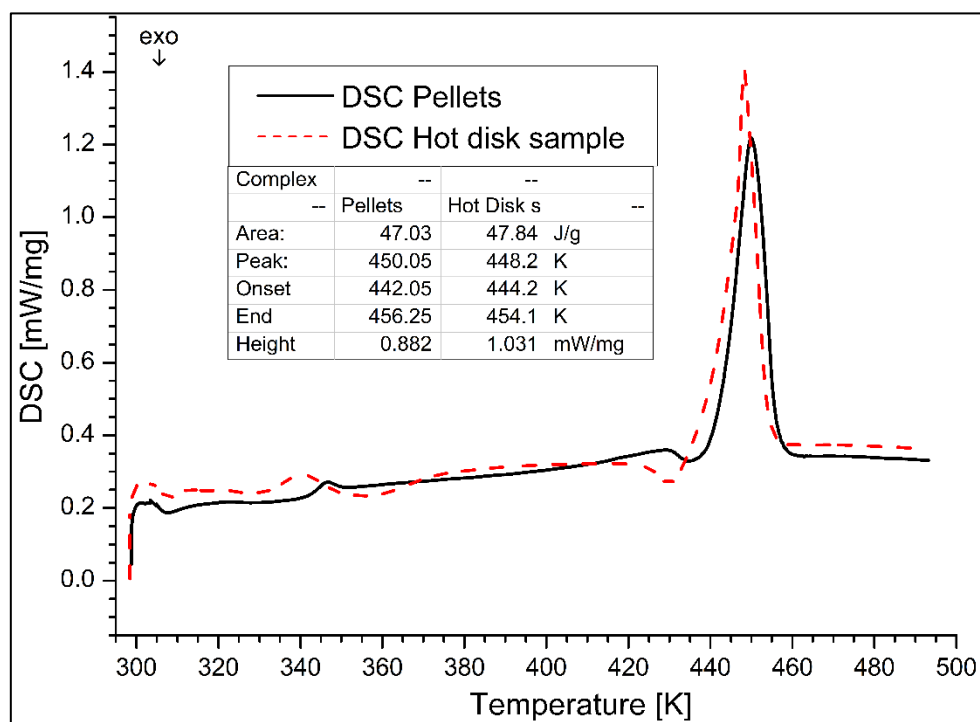


Figure S2 - DSC for the PLA pellets and PLA injection molded hot disk sample. The melting temperature was defined as the onset temperature of the melting peak for pellets.

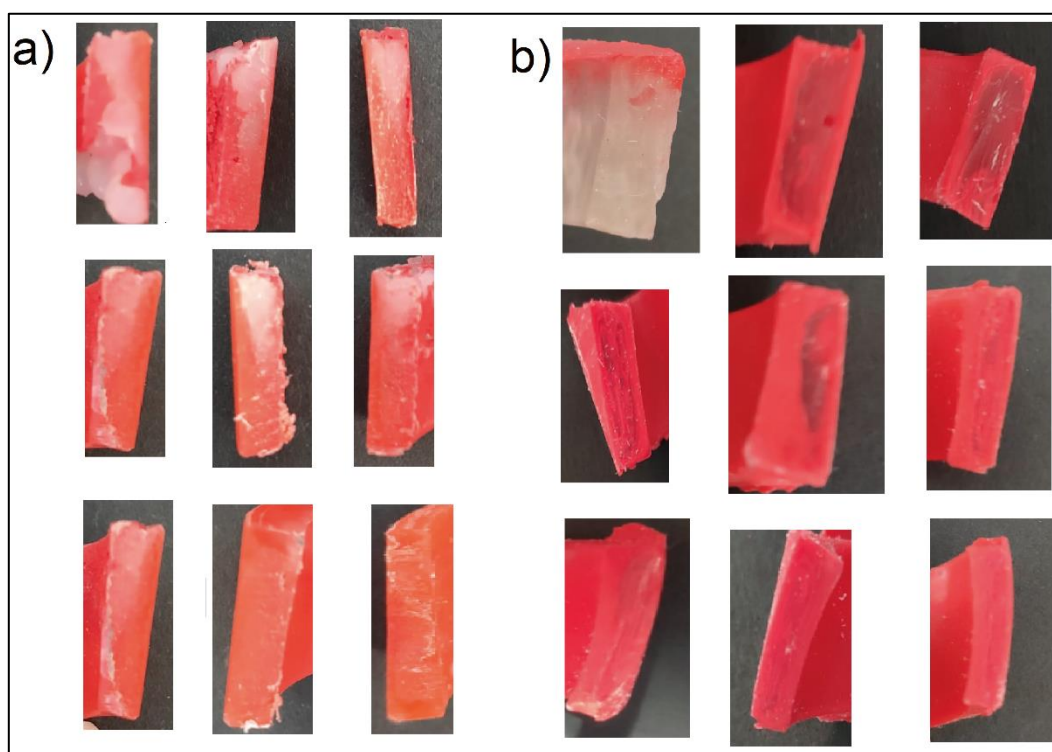


Figure S3- Examples of sections of the solidified extruder channel in the micro extruder for a) PLA; b) SEBS.

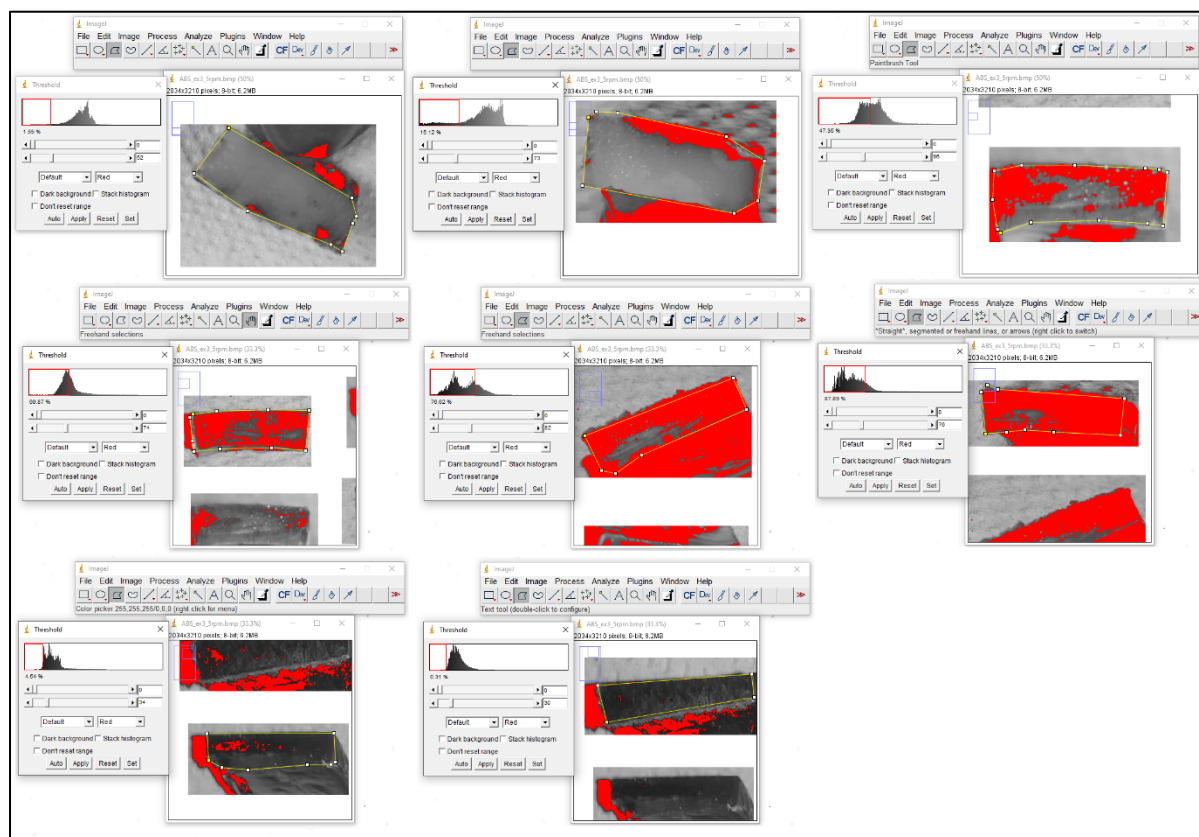


Figure S4 - Image processing for ABS 5RPM (not embedded sample 1).

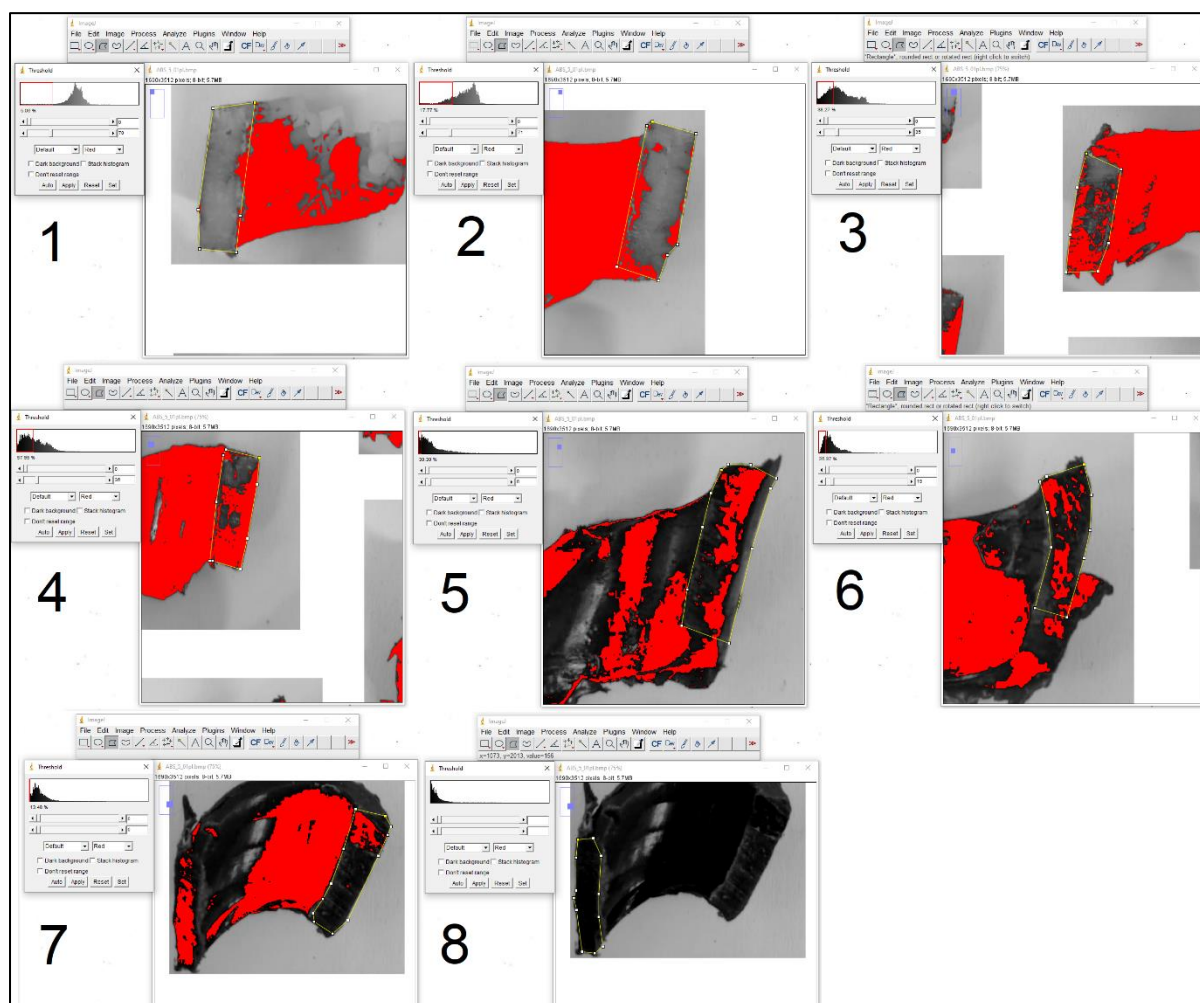


Figure S5 - Image processing for ABS 5RPM (not embedded sample 2).

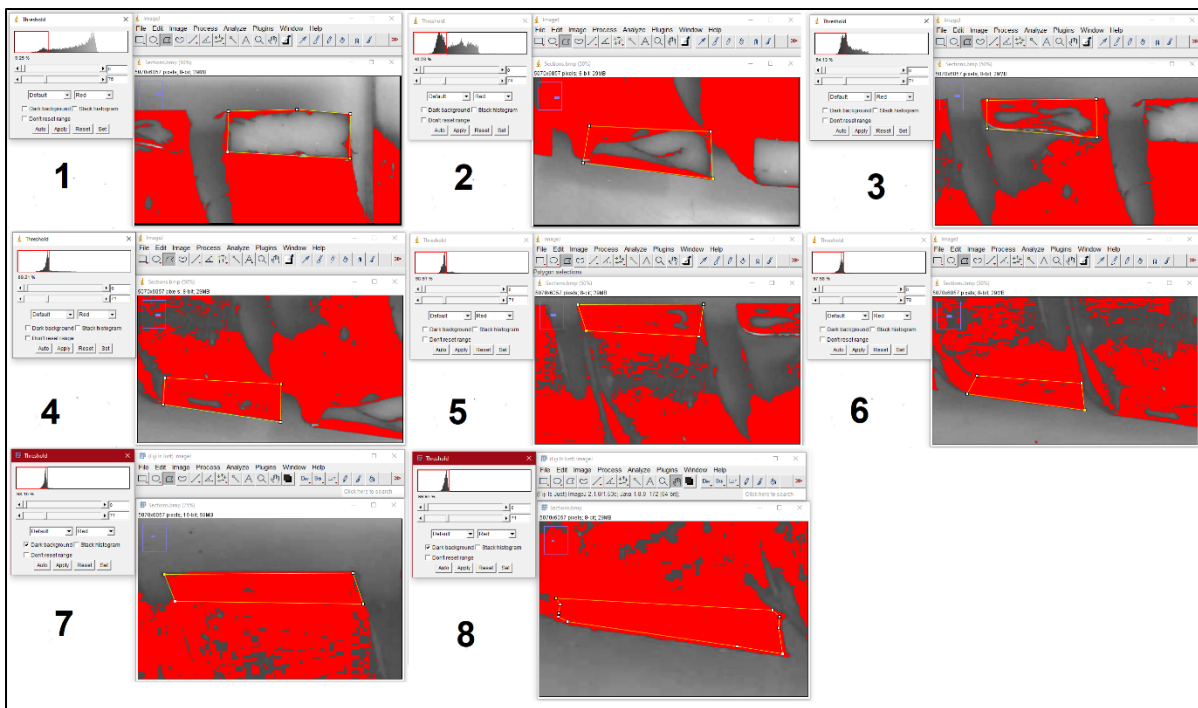


Figure S6- Image processing for ABS 5 RPM (embedded sample).

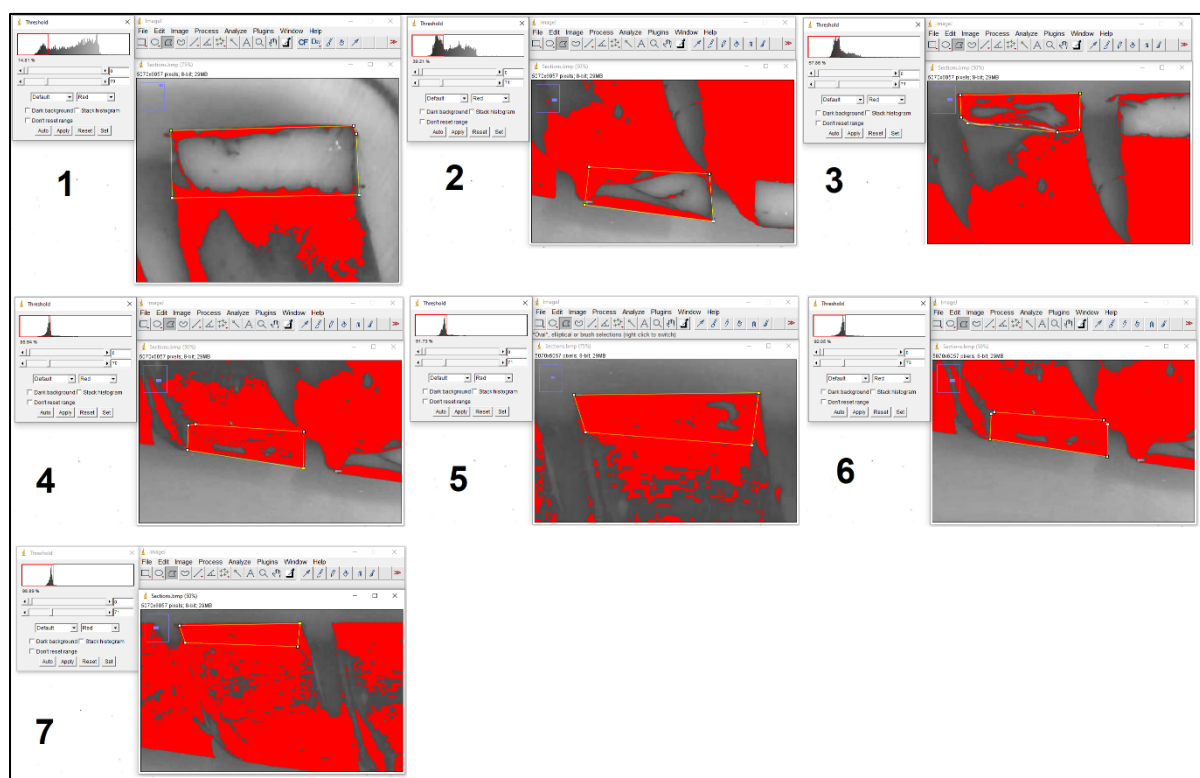


Figure S7 - Image processing for ABS 2RPM (embedded sample).

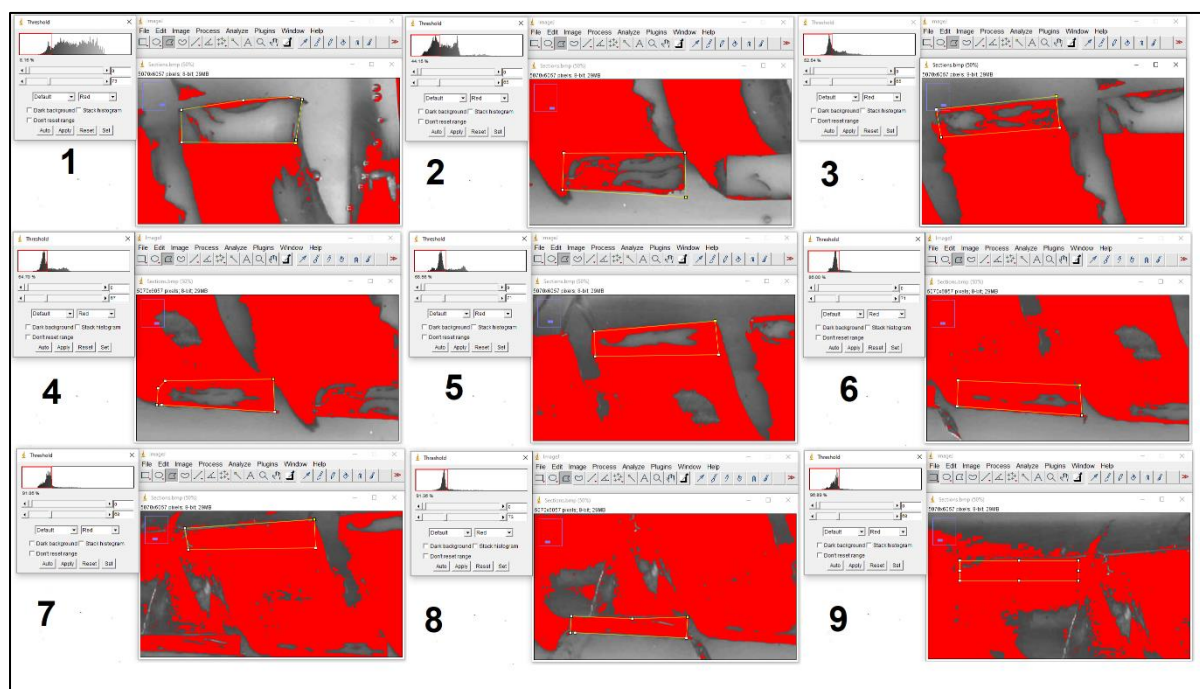


Figure S8- Image processing for ABS 8RPM (embedded sample).



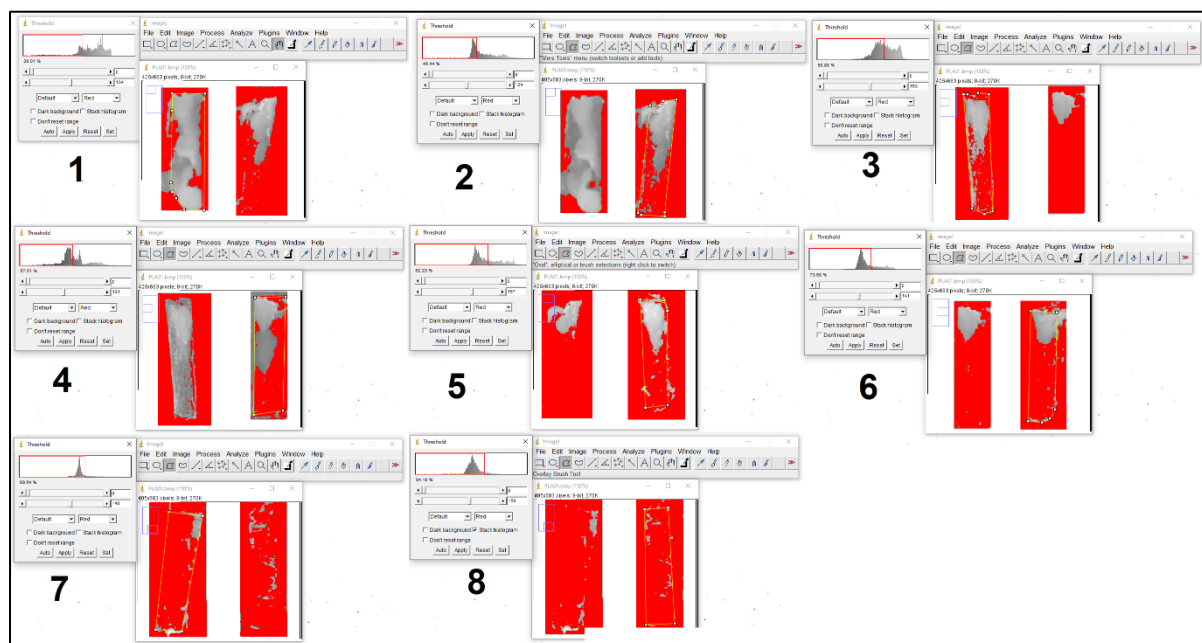


Figure S9- Image processing for PLA 5 RPM (not embedded sample).



Figure S10- Image processing for SEBS 5RPM (not embedded sample).

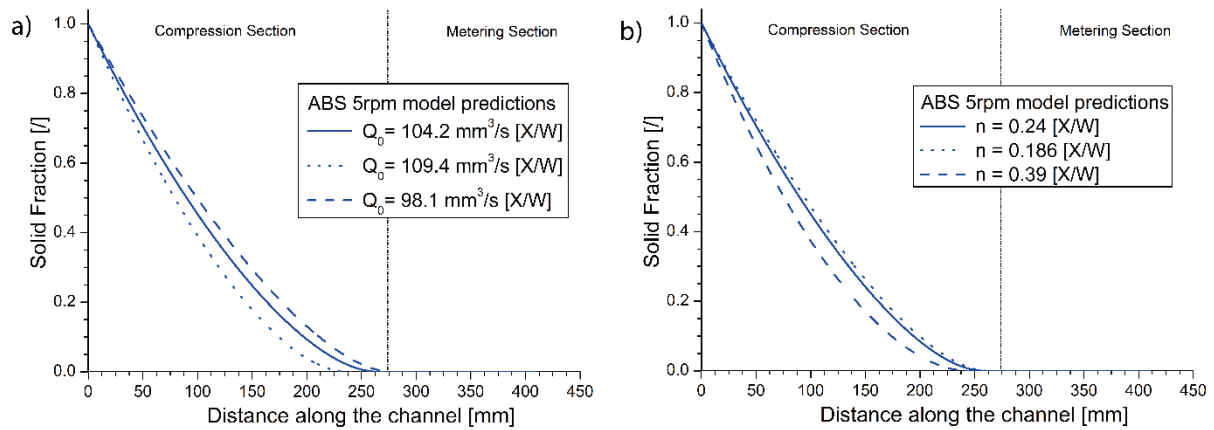


Figure S11 – (a) Relevance of the  $Q_0$  parameter; (b) Relevance of the  $n$  parameter.

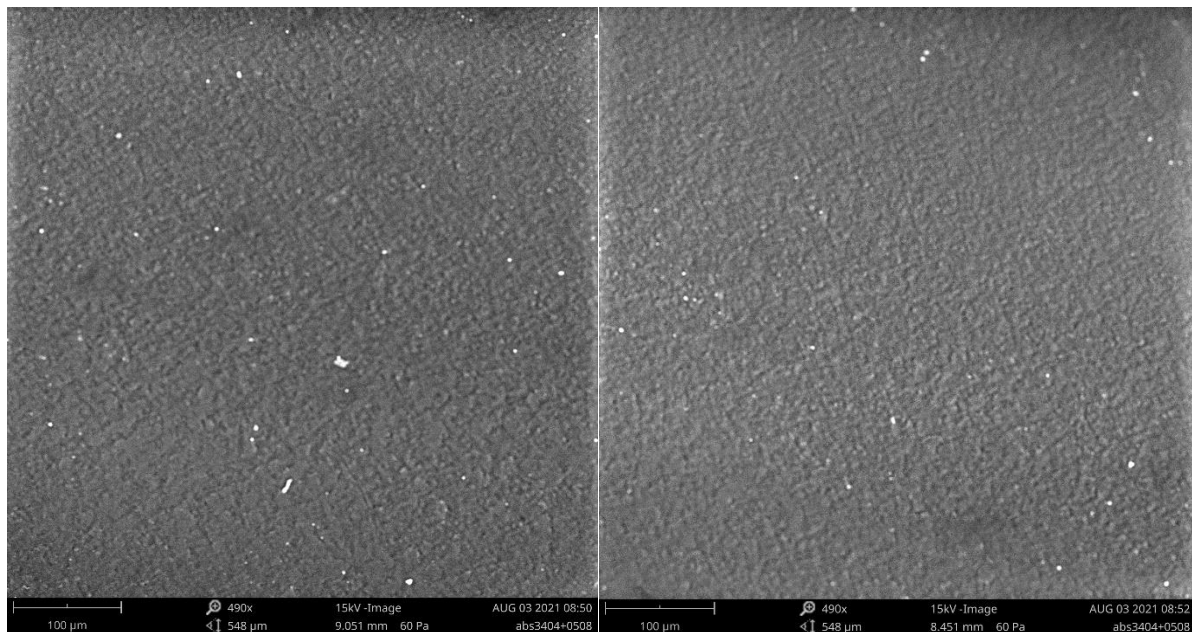


Figure S12- SEM Images for ABS extruded filament at 0.5 rpm, 0.8mm nozzle.

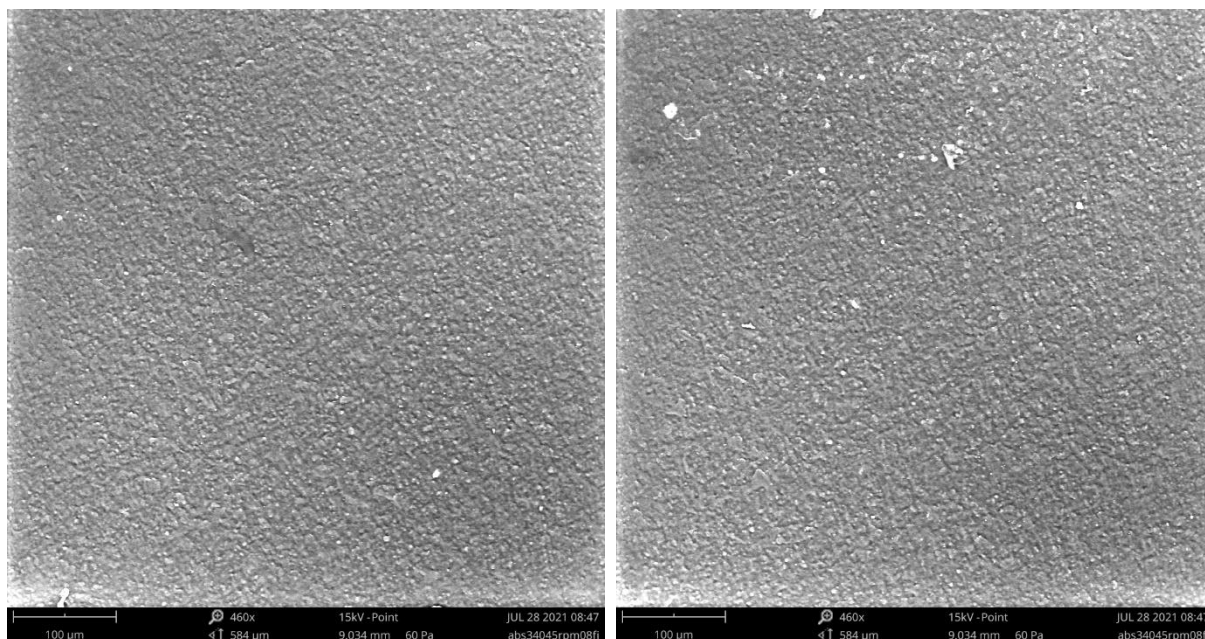


Figure S13 - SEM Images for ABS extruded filament at 5 rpm, 0.8mm nozzle.

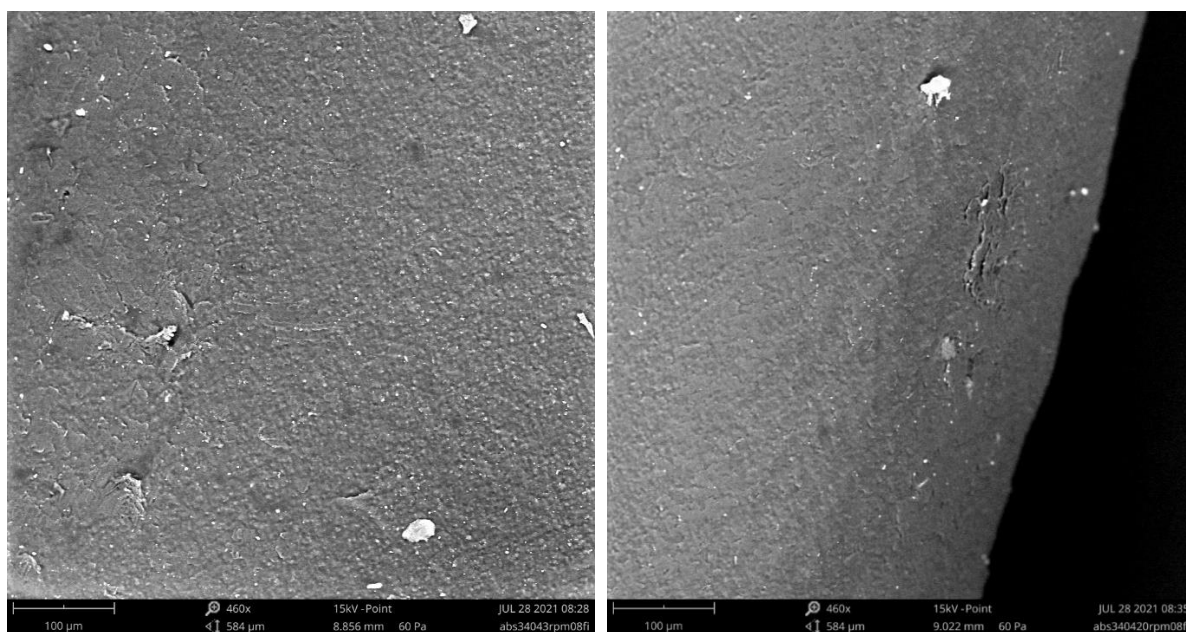


Figure S14- SEM Images for ABS extruded filament at 20 rpm, 0.8mm nozzle.

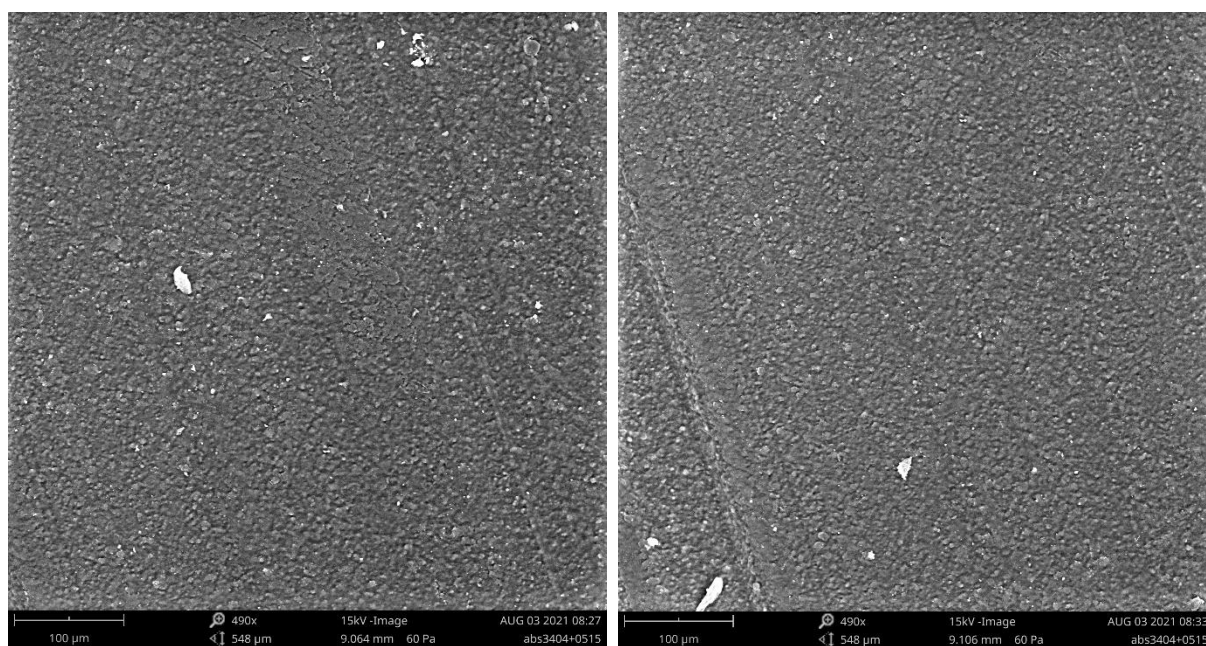


Figure S15 - SEM Images for ABS at 0.5 rpm, 1.5mm nozzle.

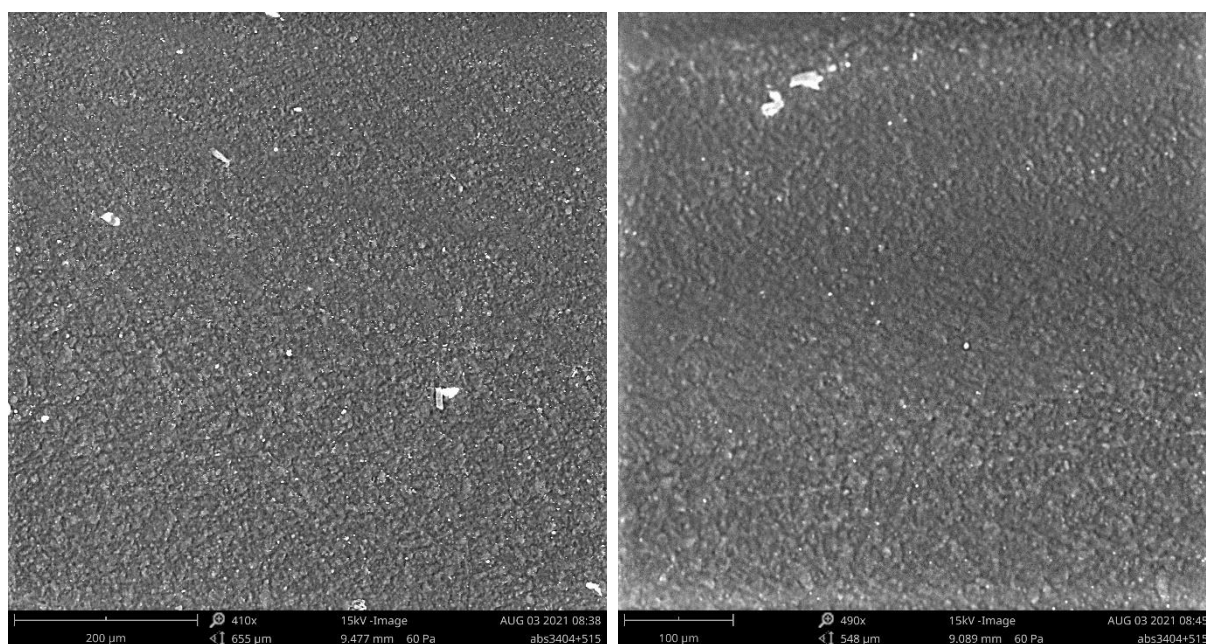


Figure S16 - SEM Images for ABS at 5 rpm, 1.5mm nozzle.



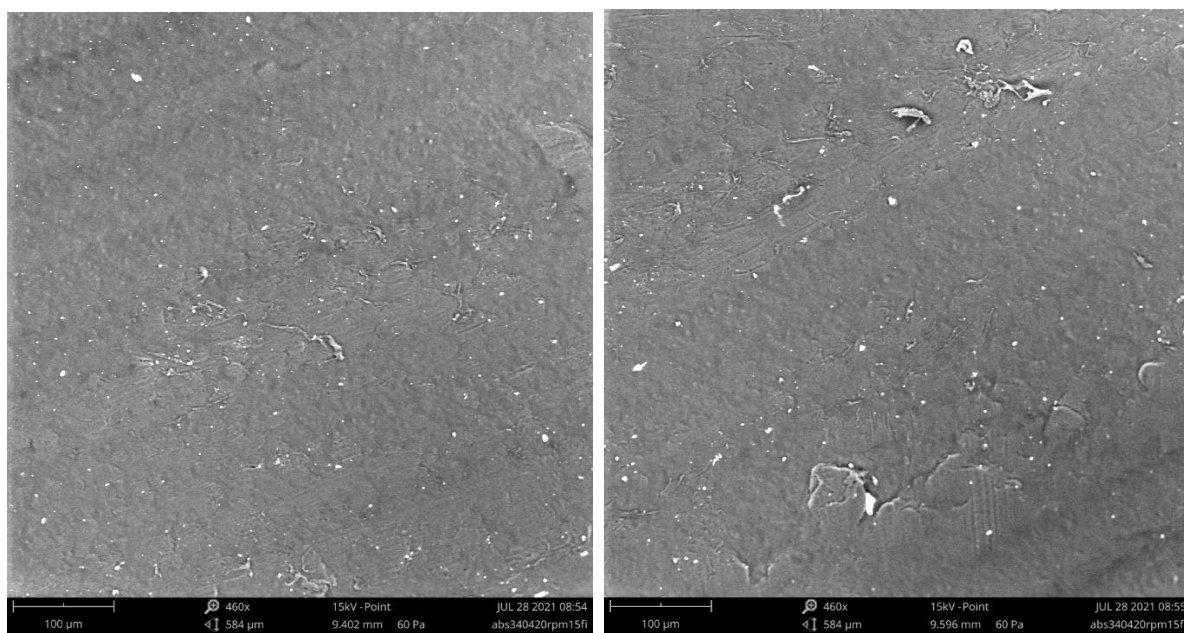


Figure S17 - SEM Images for ABS at 20 rpm, 1.5mm nozzle.

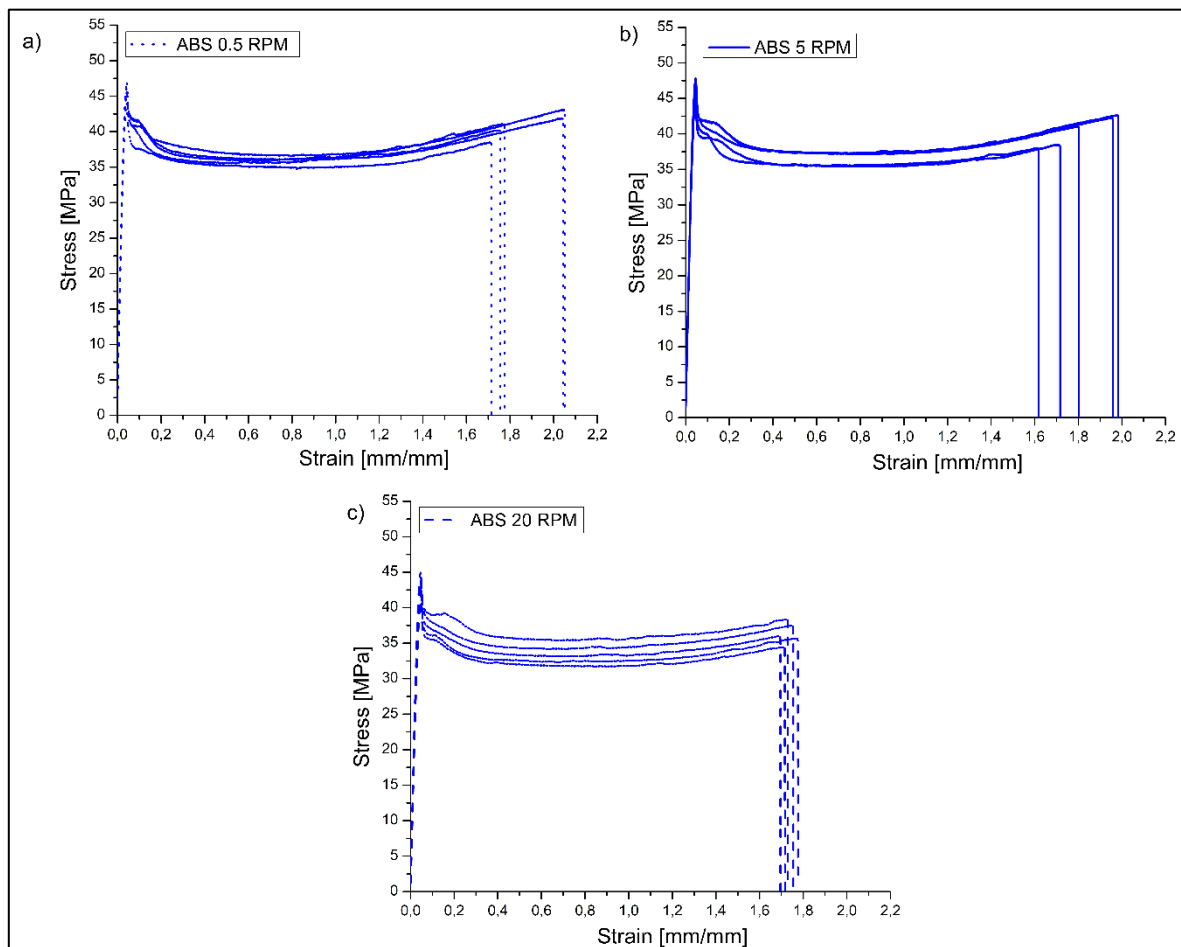


Figure S18 Tensile curves for ABS filament extruded at a) 0.5 rpm; b) 5 rpm; c) 20 rpm. Other operating conditions in Table 3 of the main document.