

## Supporting Information

Development of a semi-continuous spray process for the production of superhydrophobic coatings from supercritical carbon dioxide solutions

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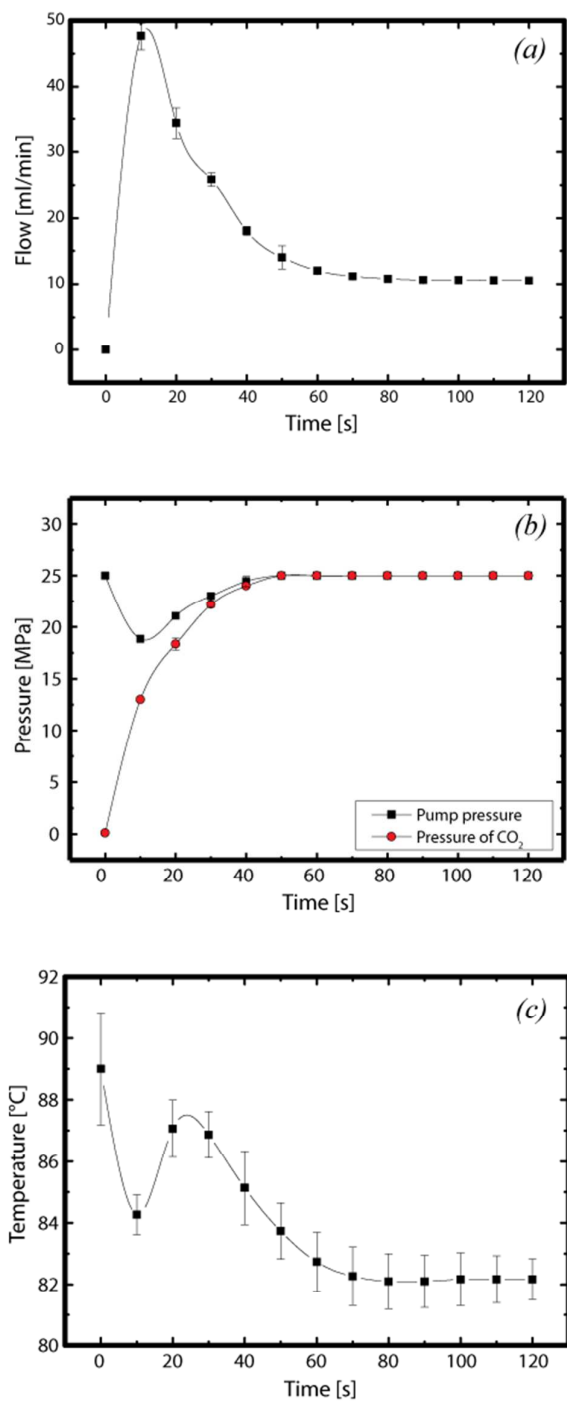
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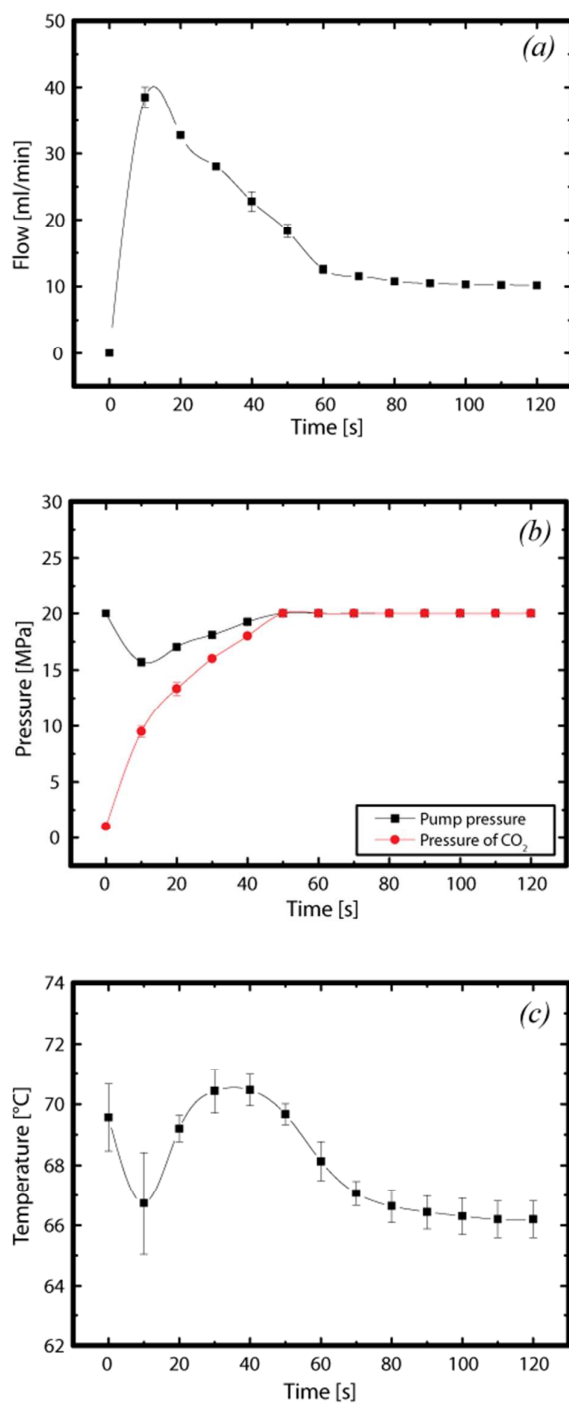
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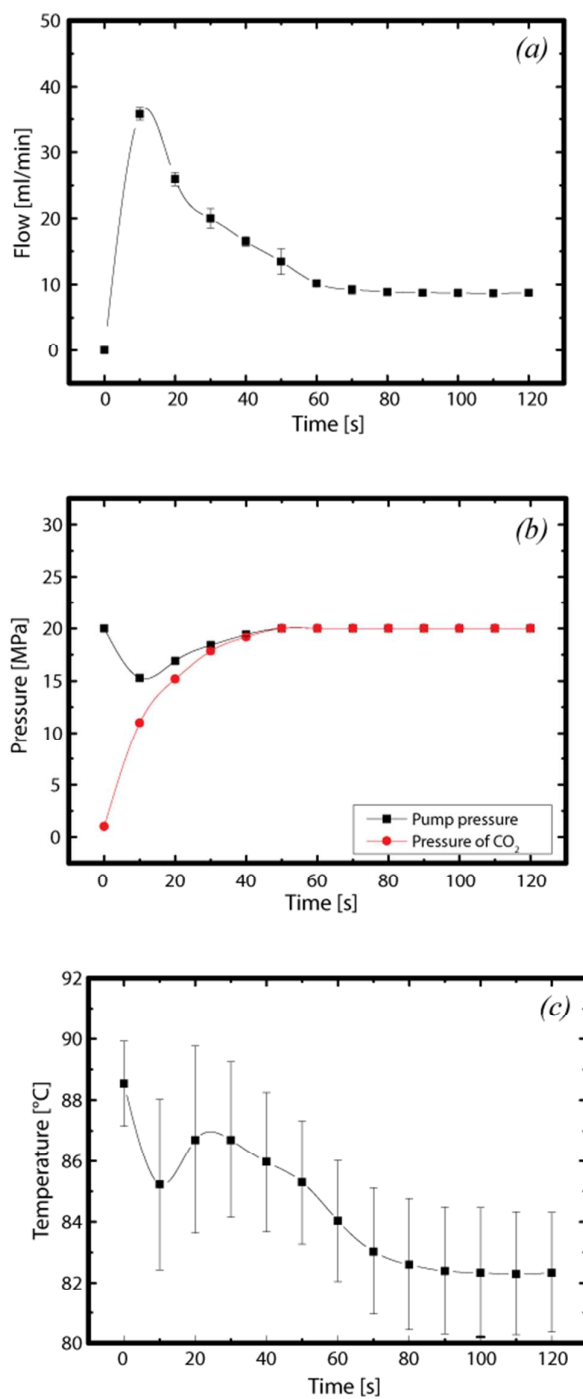
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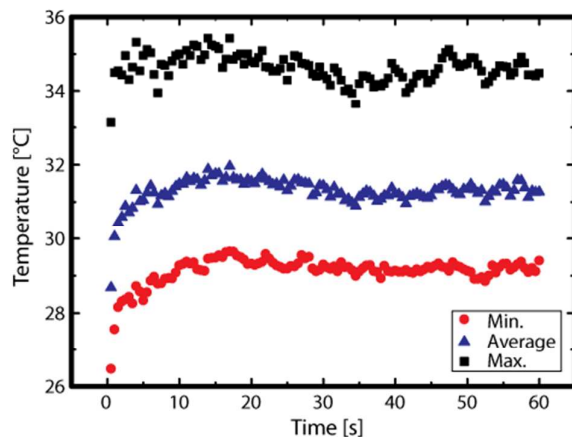
**Figure S1.** (a) Pump flow, (b) pump pressure (filled squares) and pressure of CO<sub>2</sub> (filled circles), and (c) temperature of CO<sub>2</sub> plotted against time for spraying at the high pressure (25 MPa) and high temperature (82 °C). The valves are opened at  $t = 0$  s, the lines are added as guides to the eye and the error bars indicate one standard deviation.



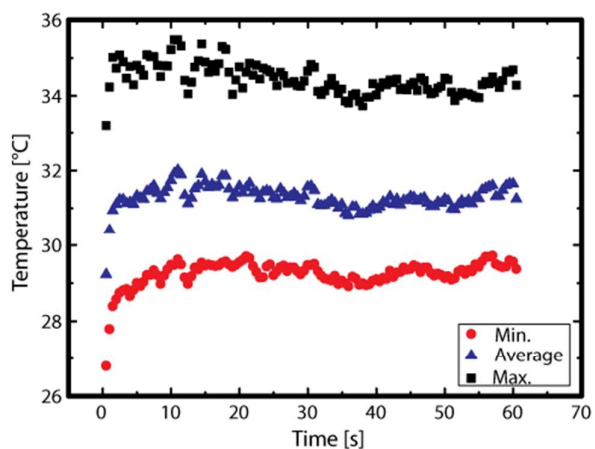
**Figure S2.** (a) Pump flow, (b) pump pressure (filled squares) and pressure of CO<sub>2</sub> (filled circles), and (c) temperature of CO<sub>2</sub> plotted against time for spraying at the low pressure (20 MPa) and low temperature (66 °C). The valves are opened at  $t = 0$  s, the lines are added as guides to the eye and the error bars indicate one standard deviation.



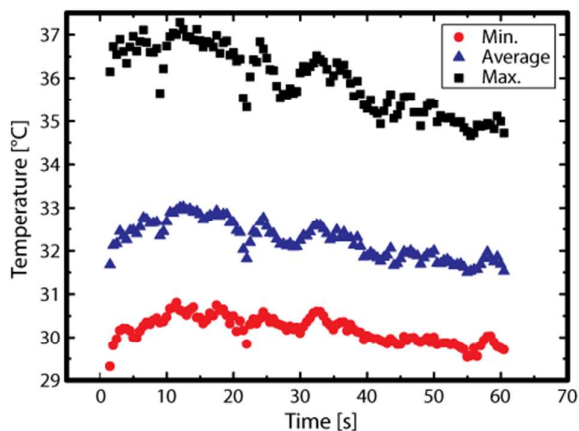
**Figure S3.** (a) Pump flow, (b) pump pressure (filled squares) and pressure of CO<sub>2</sub> (filled circles), and (c) temperature of CO<sub>2</sub> plotted against time for spraying at the low pressure (20 MPa) and high temperature (82 °C). The valves are opened at  $t = 0$  s, the lines are added as guides to the eye and the error bars indicate one standard deviation.



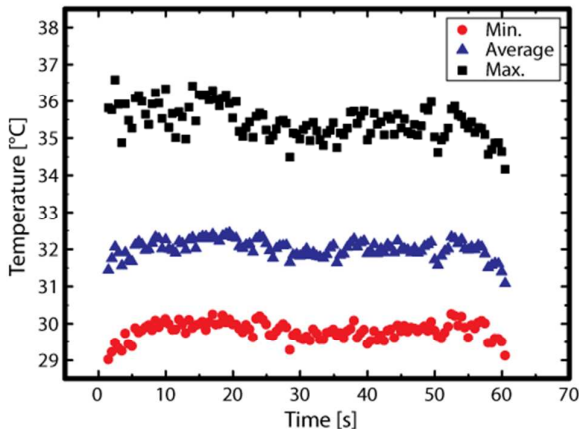
**Figure S4.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 20 MPa and a temperature of 67 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.



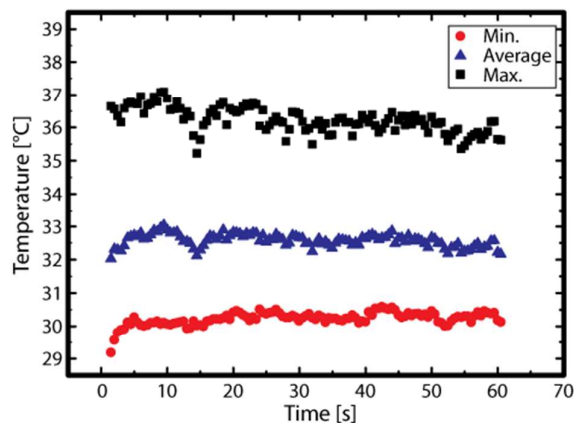
**Figure S5.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 20 MPa and a temperature of 71 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.



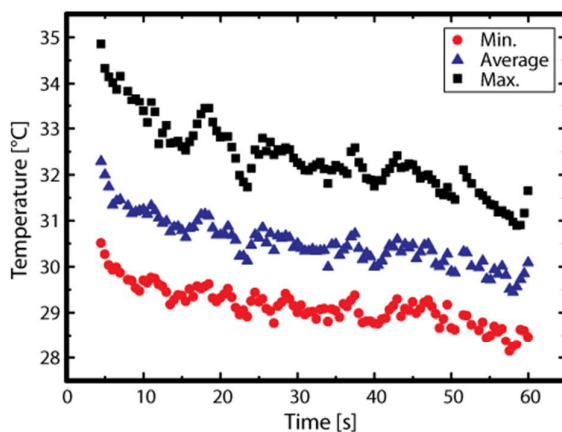
**Figure S6.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 20 MPa and a temperature of 77 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.



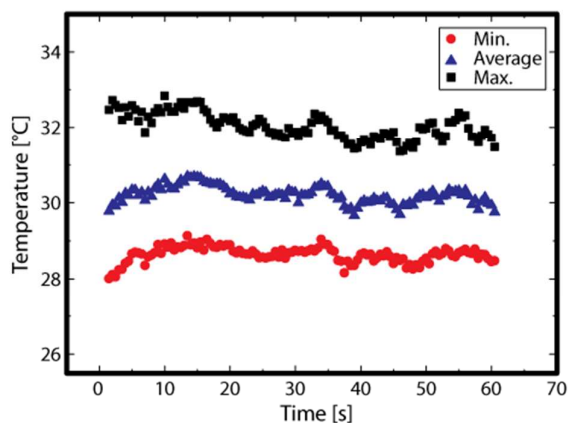
**Figure S7.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 20 MPa and a temperature of 81 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.



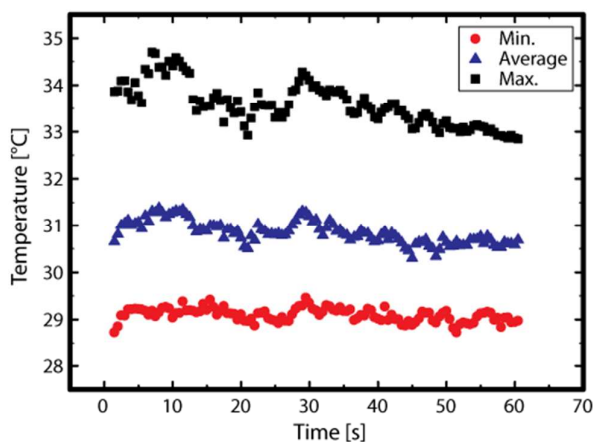
**Figure S8.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 20 MPa and a temperature of 87 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.



**Figure S9.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 25 MPa and a temperature of 67 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.

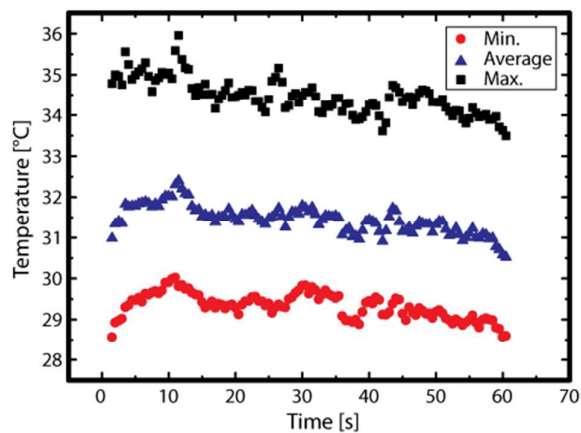


**Figure S10.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 25 MPa and a temperature of 77 °C.



**Figure S11.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 25 MPa and a temperature of 81 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.





**Figure S12.** The maximum surface temperature (squares), the average surface temperature (triangles) and the minimum surface temperature (circles) as a function of time during one spray cycle with a pressure of 25 MPa and a temperature of 87 °C. The surface substrate is a filter paper and an emittance value of 0.75 was used in the calculation of the temperature.