

SUPPLEMENTARY MATERIAL

Figure S1. Nucleation temperatures can be seen at the dip of each measurement area on the y-axis with respective time of nucleation on the x-axis. Measurements of average temperature at the top and bottom of each cuvette R6 to R15 and R16 were used to generate the plot.

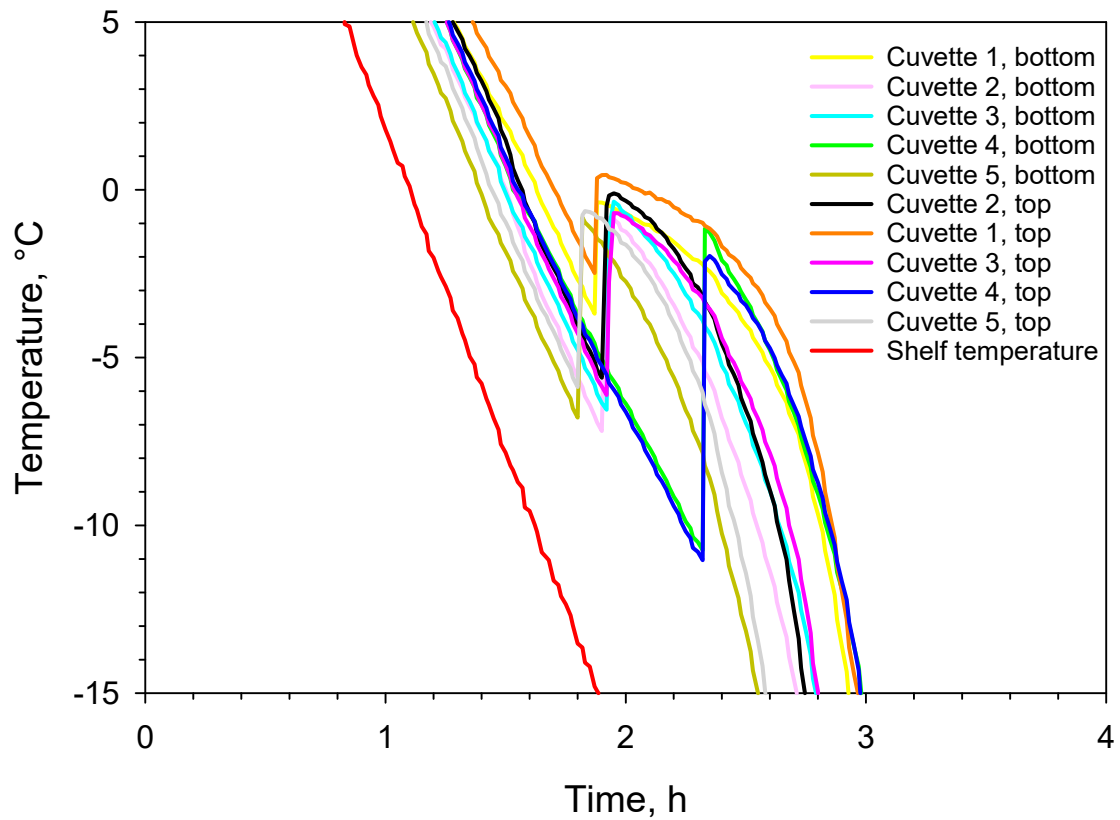


Figure S2. Entire freeze-drying process; top and bottom view of cuvettes with and without probes using average temperature readouts from R6 to R15 and R16.

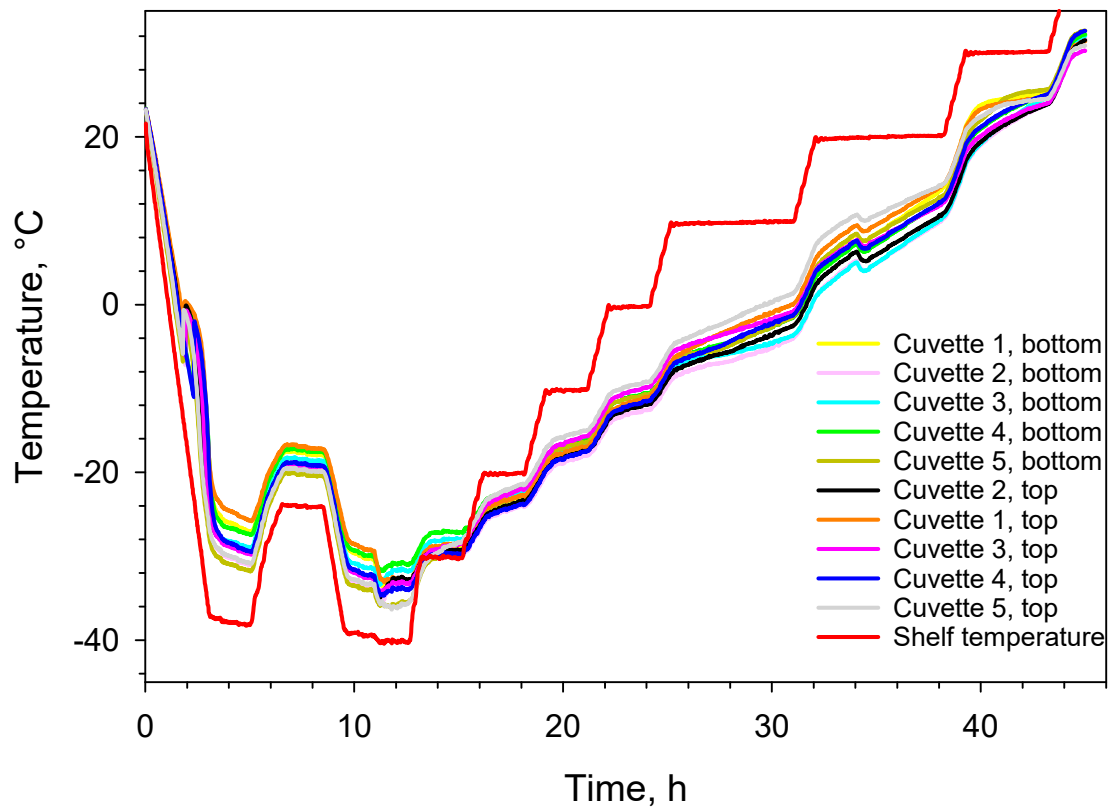


Figure S3. Primary drying process, top and bottom view of cuvettes 1 to 5 with and without probes using average temperature readouts from R6 to R15 and R16.

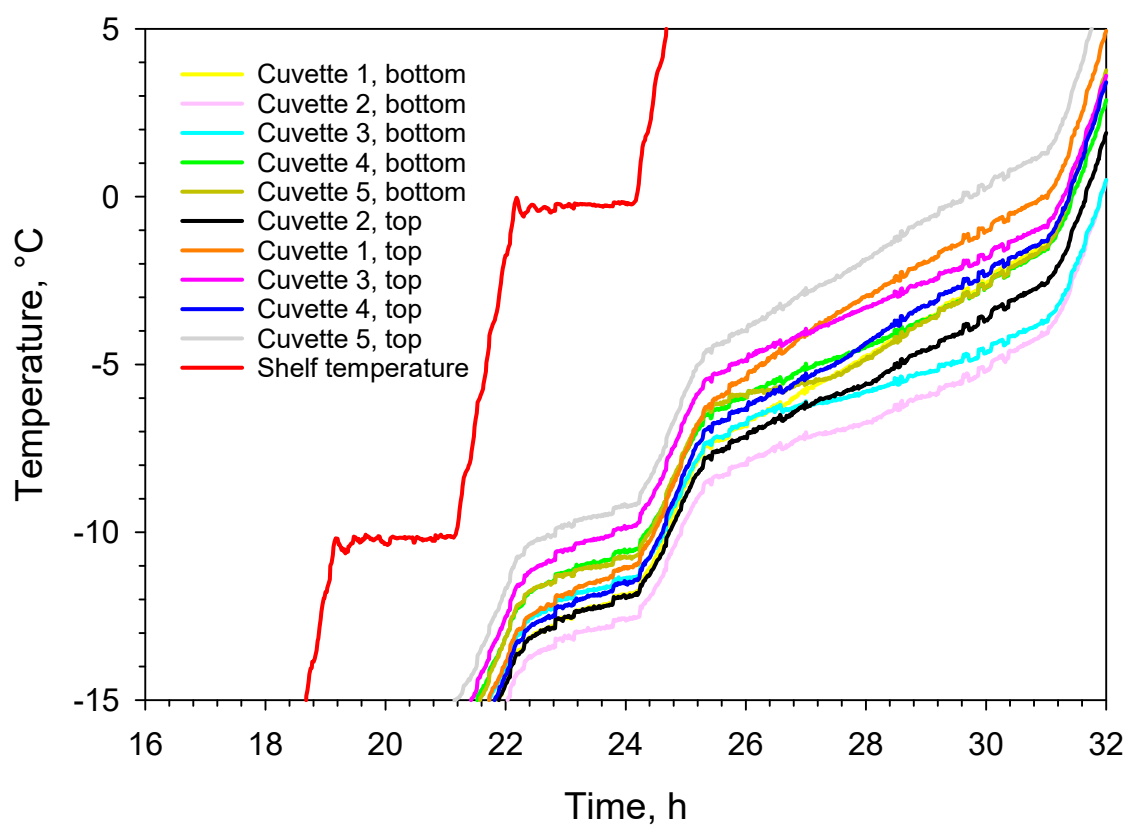


Figure S4. Selection showing primary drying process. Surface, top and bottom view of cuvettes 1 and 2 with and without a probe using average temperature readouts from R1, R2, R6 , R7, R11, R12 and R16.

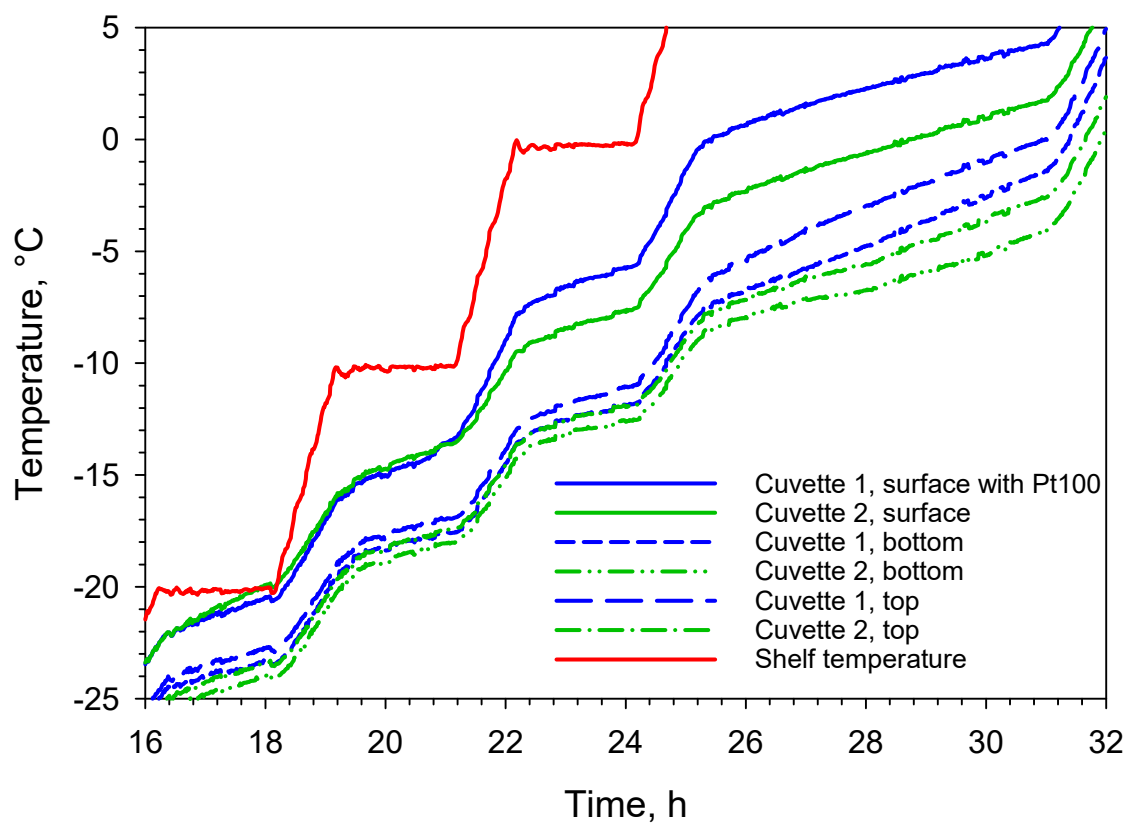


Figure S5. Thermogram of cuvettes 1 to 5 with profiles L1 to L5 at the surface and L6 along the depth profile after 2700 minutes, 45 h

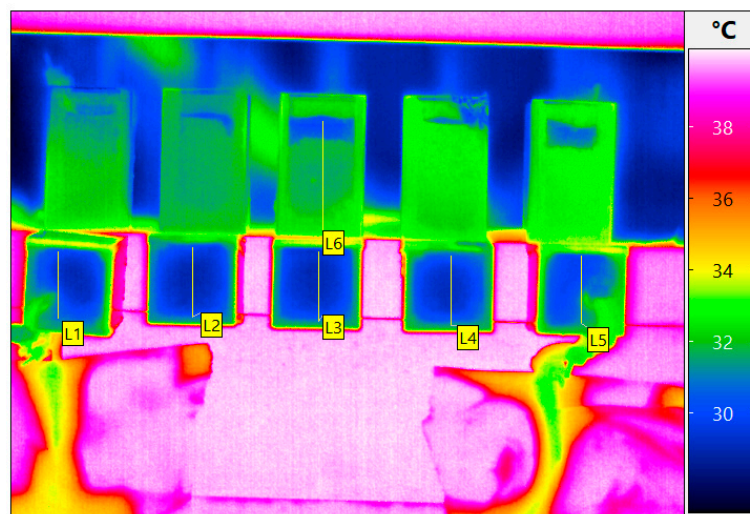


Figure S6. Temperature readout of lines 1-6 as a function of cuvette at the surface and depth (for line 6) after 2700 minutes (45 h)

