Supplementary information

FABRICATION OF POROUS HYDROGENATION CATALYSTS BY SELECTIVE LASER SINTERING 3D PRINTING TECHNIQUE

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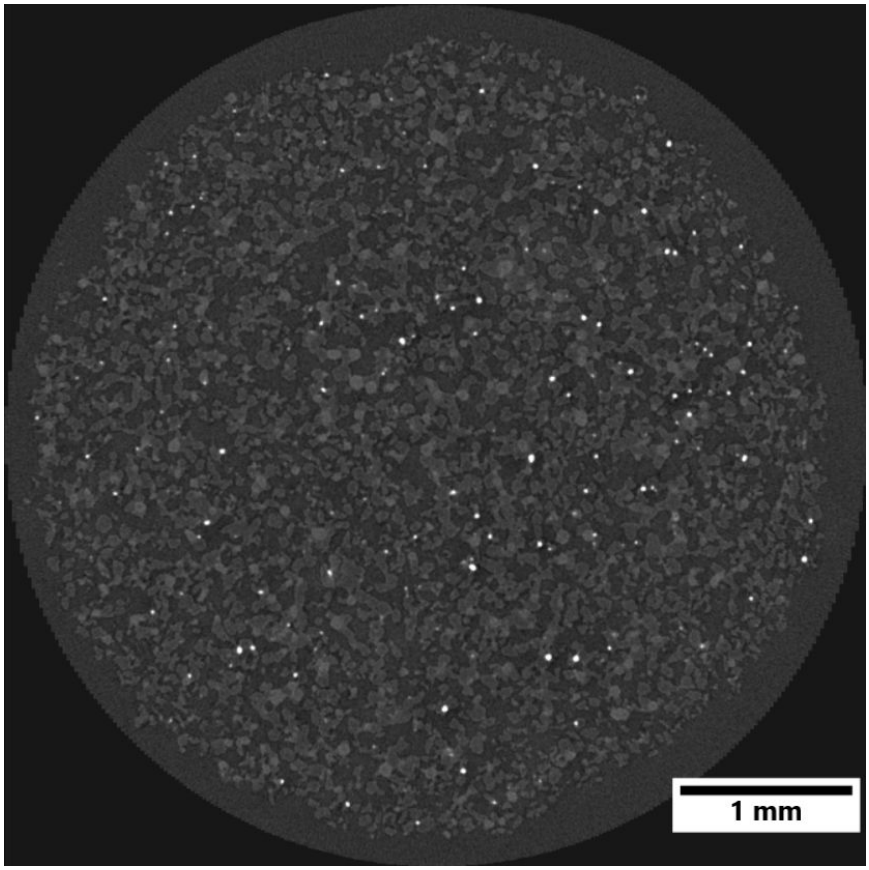

Figure S1. X-ray tomography image of an SLS 3D printed $PdSiO_2$/PP catalyst. SiO2 can be seen as the white particles in the image.

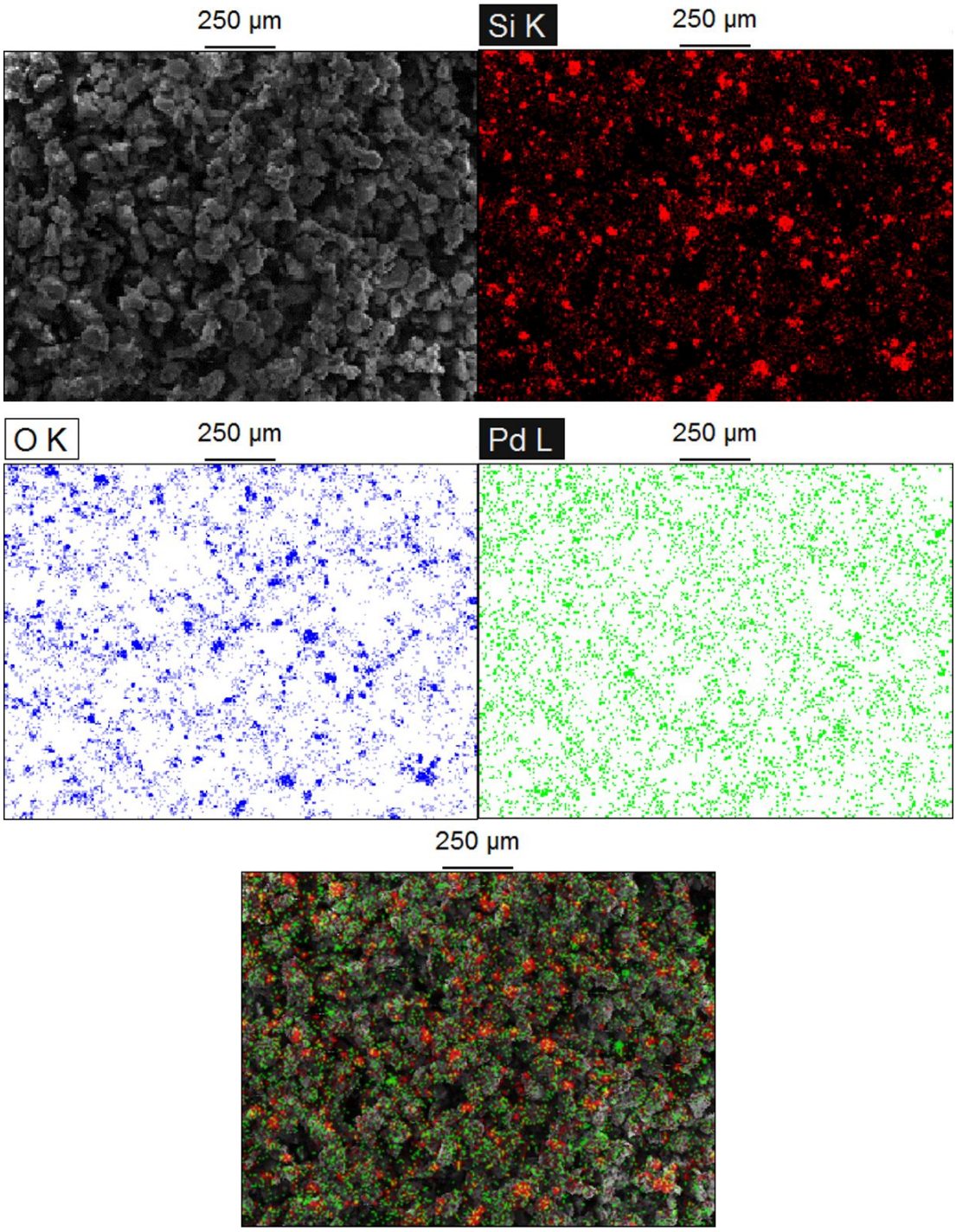

Figure S2. Spectral imaging results from SEM-EDS analysis received for the SLS 3D printed $PdSiO_2$/PP catalyst. The bottom image shows the overlaid images of the sample, Si and Pd. Figures S2-S4 are replicated taked from different $PdSiO_2$/PP samples to show the even distribution between different samples.

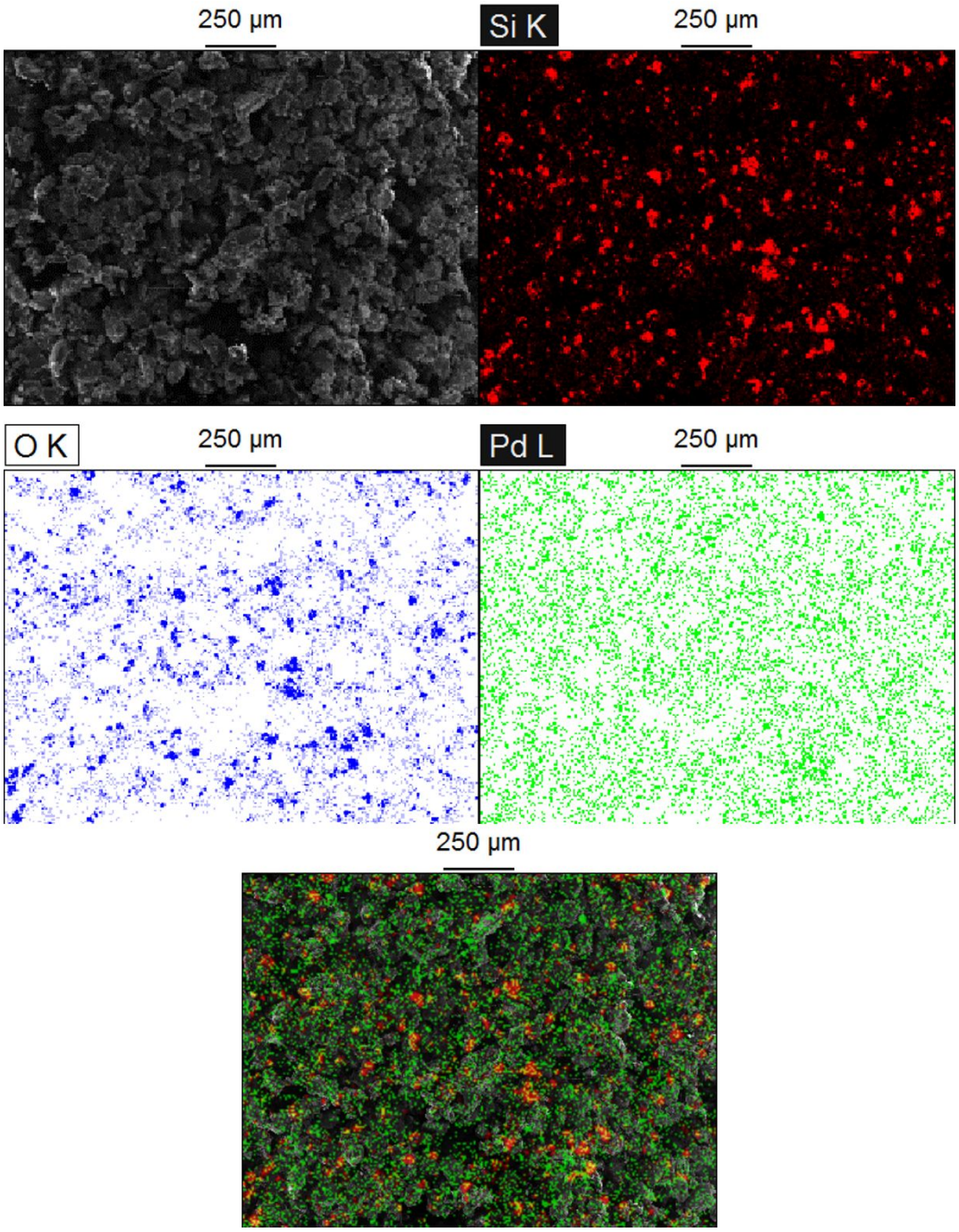

Figure S3. Spectral imaging results from SEM-EDS analysis received for the SLS 3D printed $PdSiO_2$/PP catalyst. The bottom image shows the overlaid images of the sample, Si and Pd. Figures S2-S4 are replicated taken from different $PdSiO_2$/PP samples to show the even distribution between different samples.

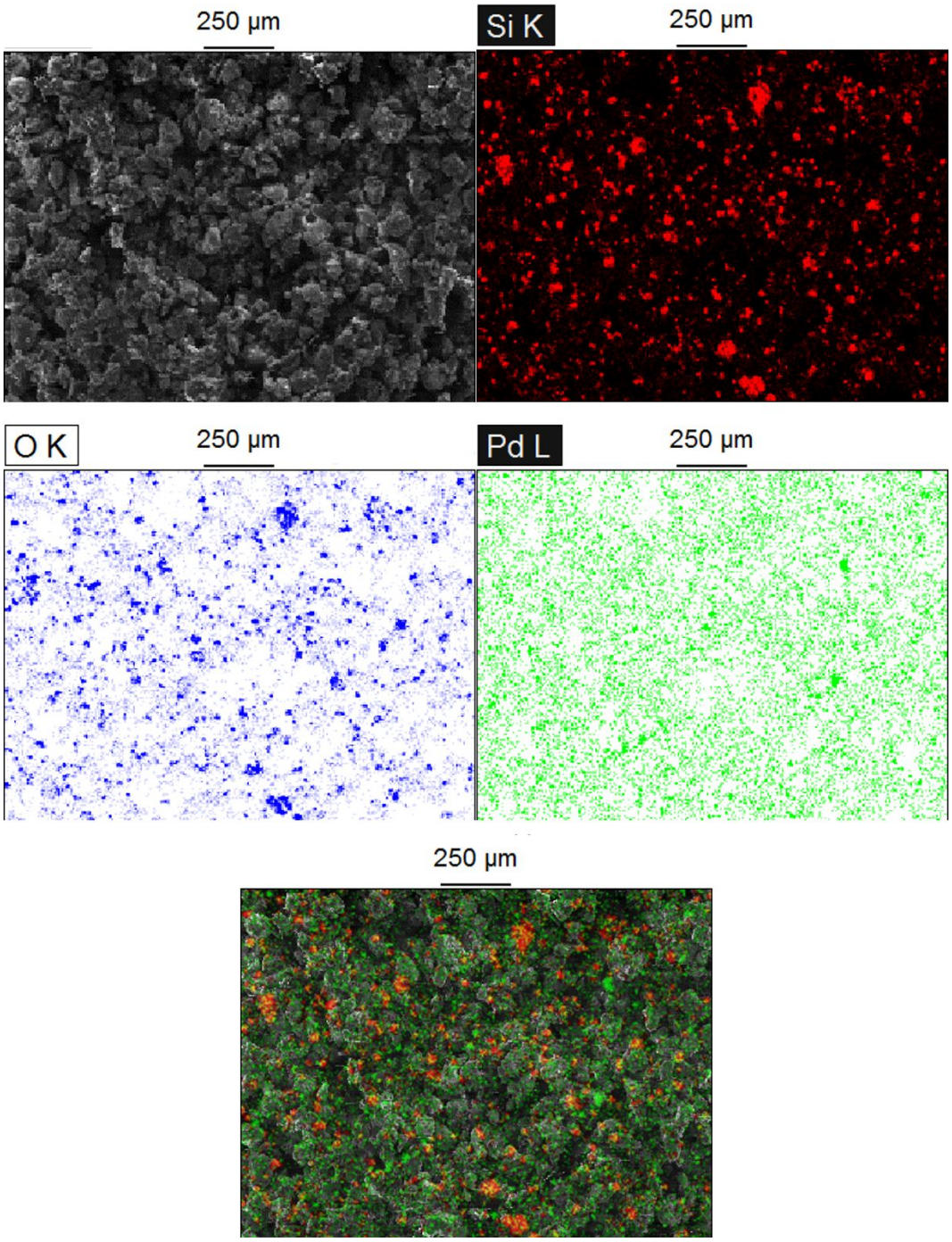

Figure S4. Spectral imaging results from SEM-EDS analysis received for the SLS 3D printed $PdSiO_2$/PP catalyst. The bottom image shows the overlaid images of the sample, Si and Pd. Figures S2-S4 are replicated taken from different $PdSiO_2$/PP samples to show the even distribution between different samples.

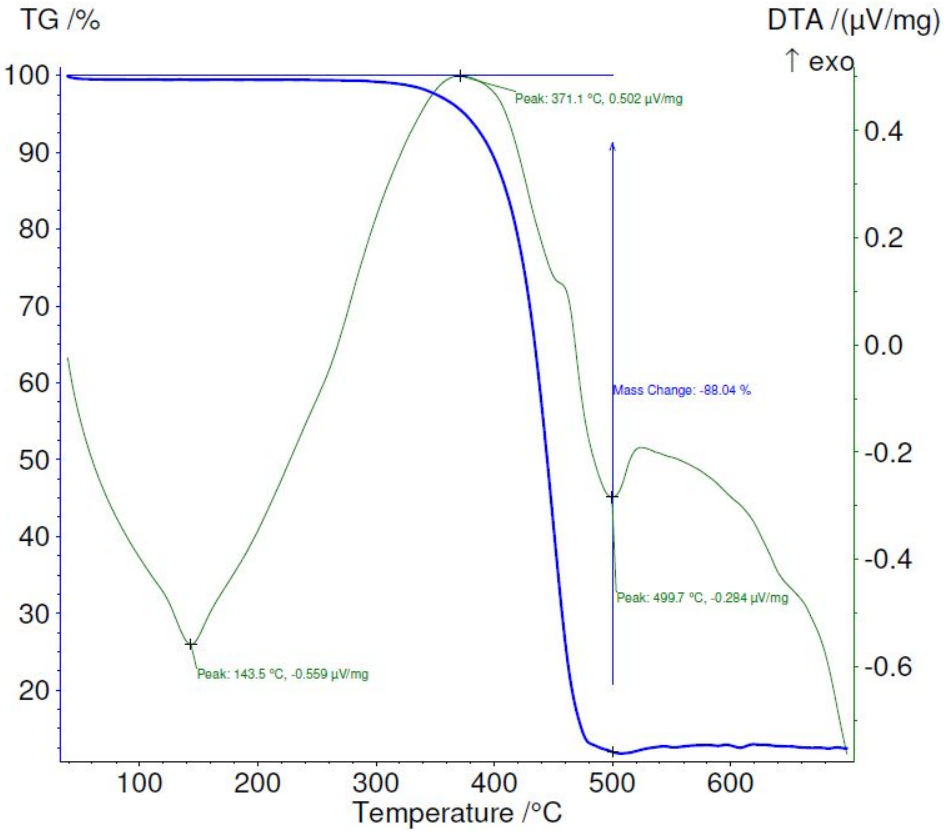

Figure S5. TG/DTA curve for SLS 3D printed $PdSiO_2$/PP catalyst. The measurement was done by increasing temperature from RT to 700 ˚C at the speed of 10 ˚C per minute.

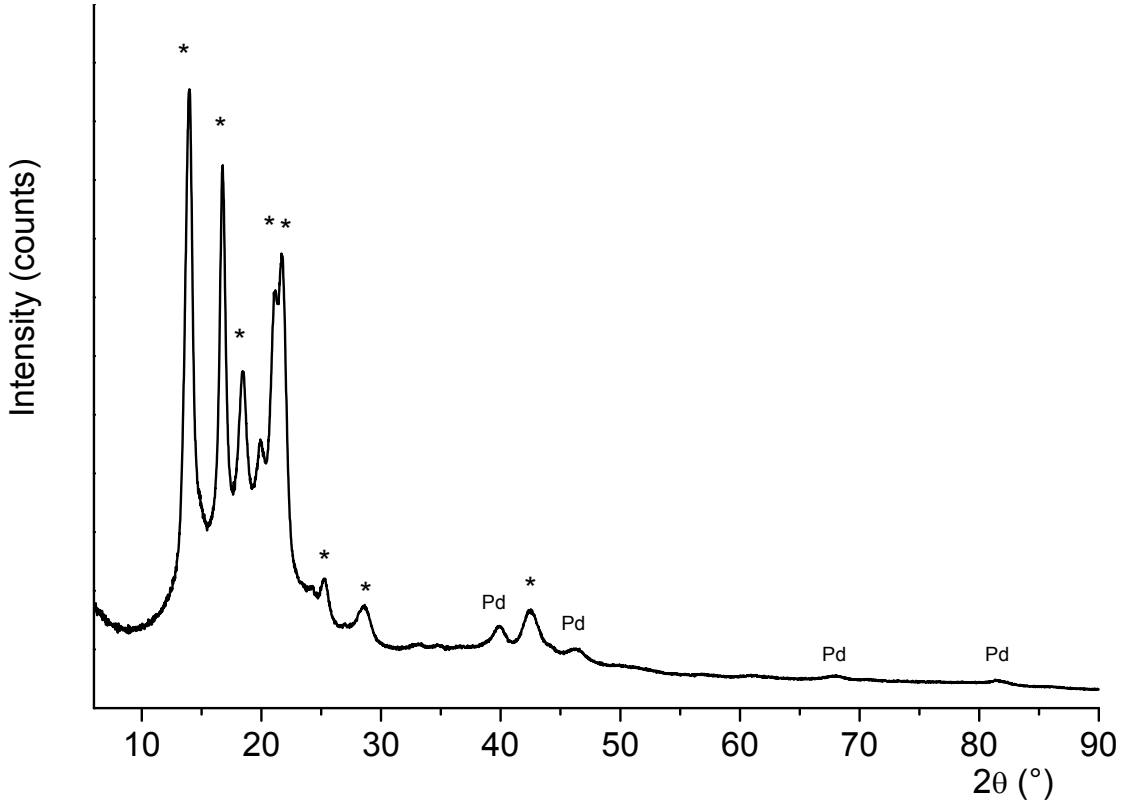

Figure S6. Powder X-ray diffraction pattern of the $PdSiO_2$/PP powder sample. Characteristic peaks of polypropylene phase are marked by "*", and metallic palladium by "Pd".

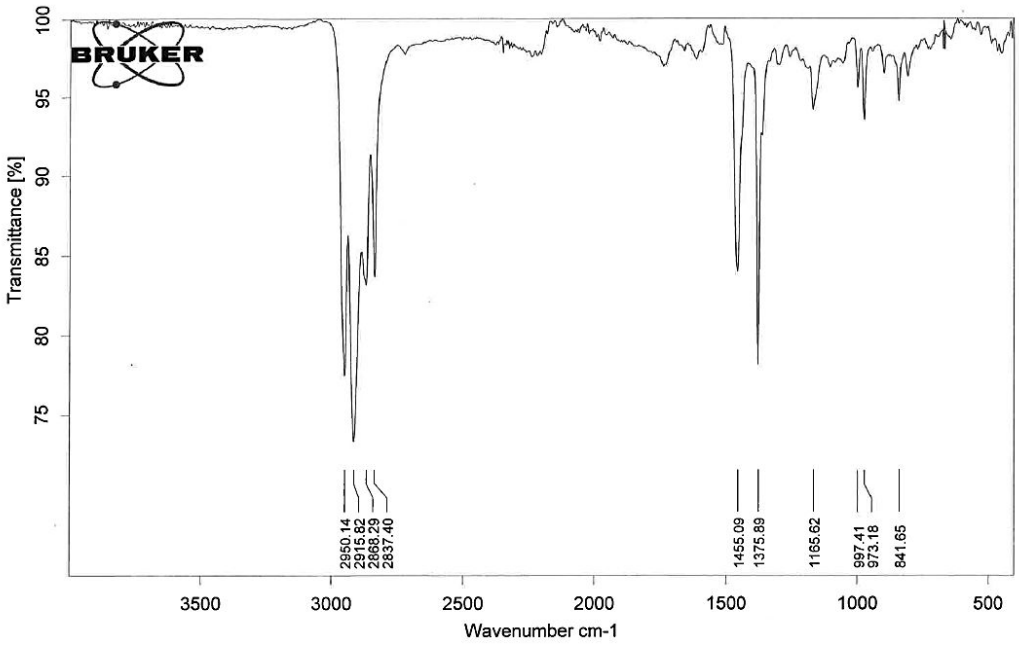

Figure S7. FTIR spectrum of an unused polypropylene powder.

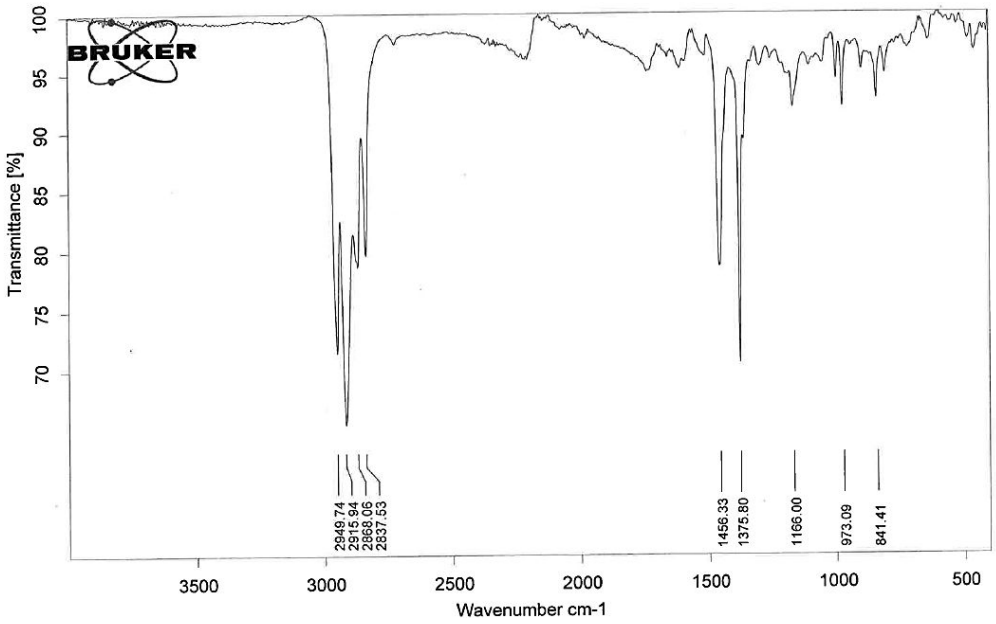

Figure S8. FTIR spectrum of a used polypropylene powder.

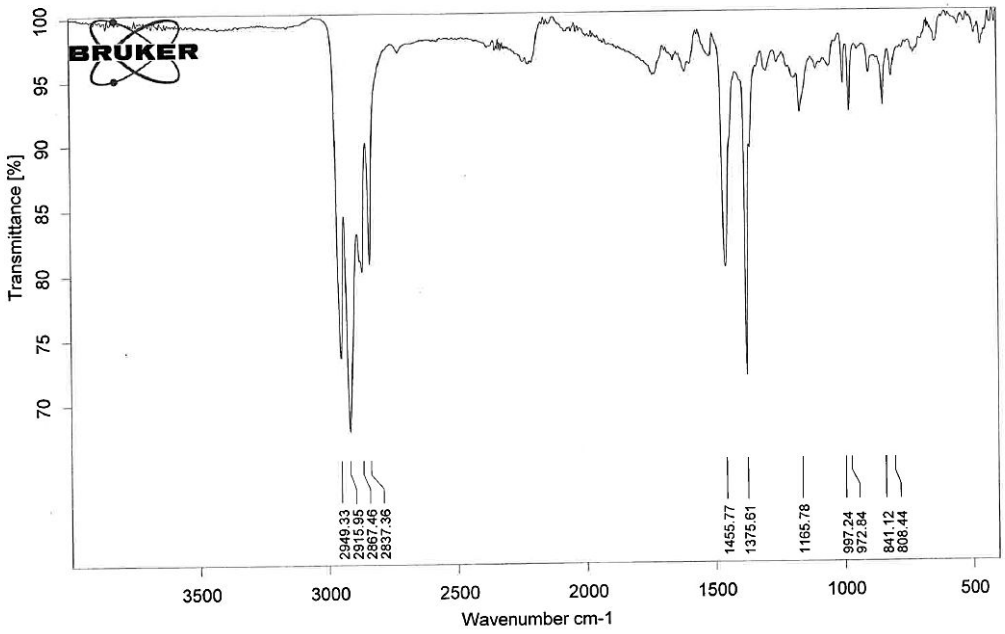

Figure S9. FTIR spectrum of a SLS 3D printed object that was made out of polypropylene powder.

Table S1. Determined palladium concentration in the SLS 3D printed stir bar sleeve samples. Done using microwave-assisted leaching followed by ICP-OES analysis.

	Pd concentration (w-%)
Sample 1	0.490
Sample 2	0.492
Sample 3	0.460
Sample 4	0.474
Sample 5	0.482
Sample 6	0.500
Sample 7	0.490
Sample 8	0.505

Table S2. SEM-EDS results of C, O, Si, Pd and Au of three different SLS 3D stir bar sleeve samples. Gold is derived from the 6 nm layer that was sputtered onto the samples for the imaging. Image resolution of 1024 by 768 with a pixel size of 1.63 µm was used. Acceleration voltage was 15 kV.

	Concentration **(w-%)** Sample 1	Concentration **(w-%)** Sample 2	Concentration **(w-%)** Sample 3
C	60.28	61.81	62.29
O	12.85	13.7	14.78
Si	4.3	4.13	3.98
Pd	0.76	0.41	0.54
Au	21.81	19.95	18.51