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Supporting Information

A Plasma-3D Print Combined *In Vitro* Platform with Implications for Reliable Materiobiological Screening†

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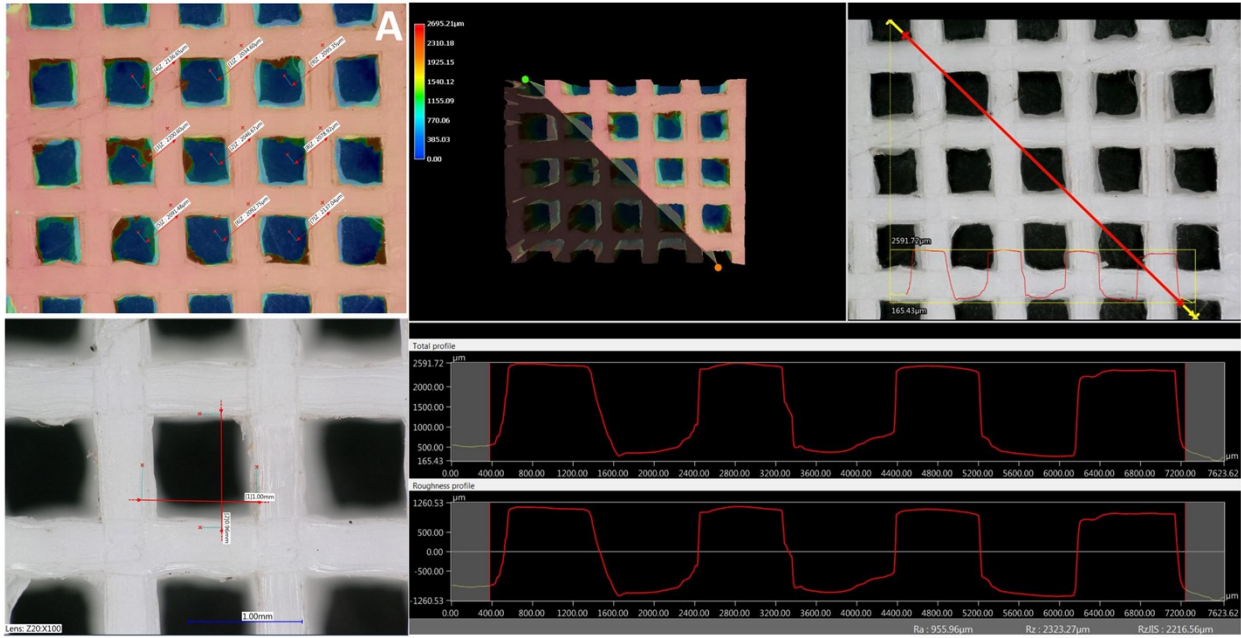


Figure S1: 3D Confocal Scanning Microscopy Images of 12 well plate 3D Printed design showing the pore size distribution across the diagonal and roughness profile measurements. Measurements done to determine the precision and consistency of the samples to the original design.

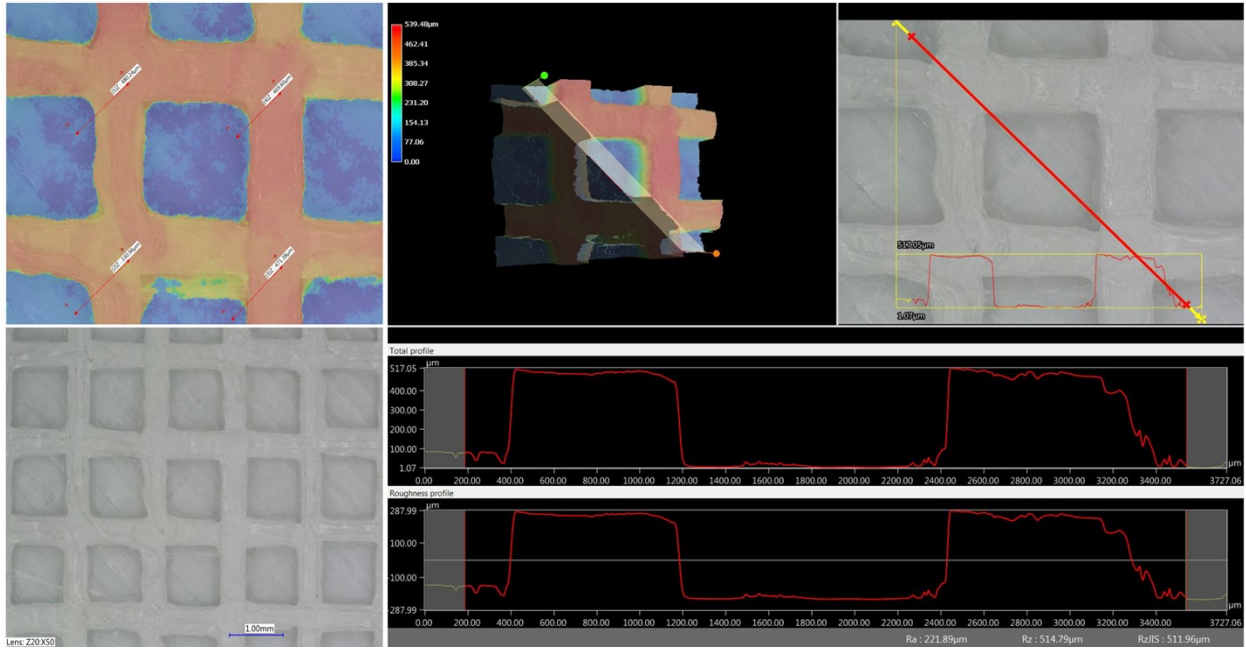


Figure S2: 3D Confocal Scanning Microscopy Images of 24 well plate 3D Printed design showing the pore size distribution across the diagonal and roughness profile measurements.

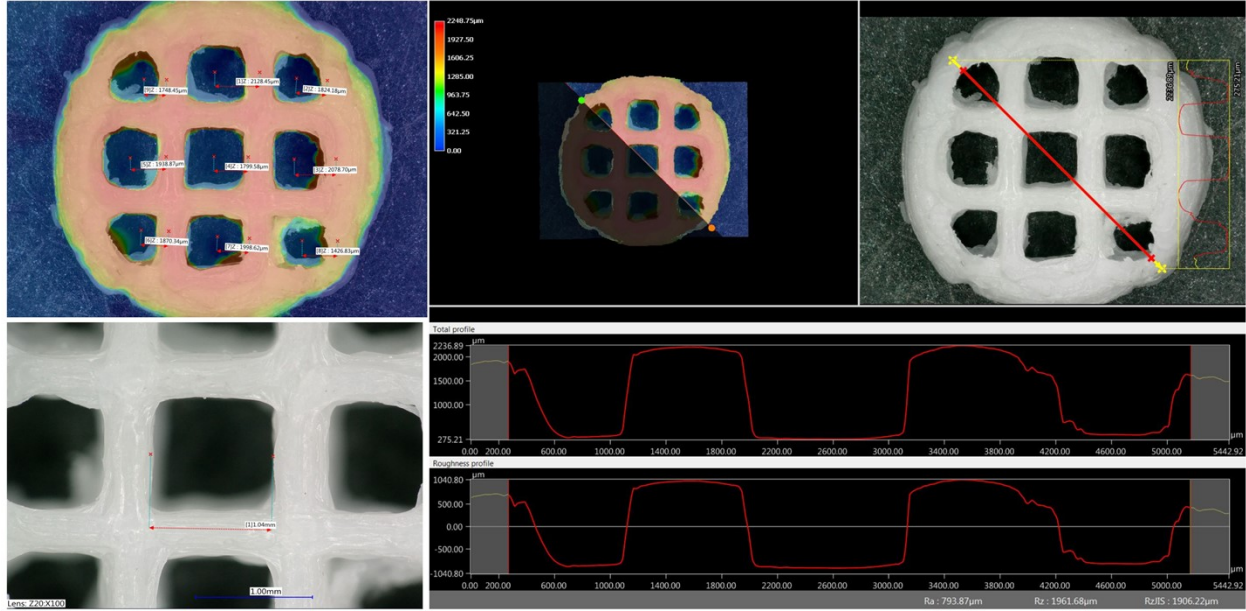


Figure S3: 3D Confocal Scanning Microscopy Images of 96 well plate 3D Printed design showing the pore size distribution across the diagonal and roughness profile measurements.

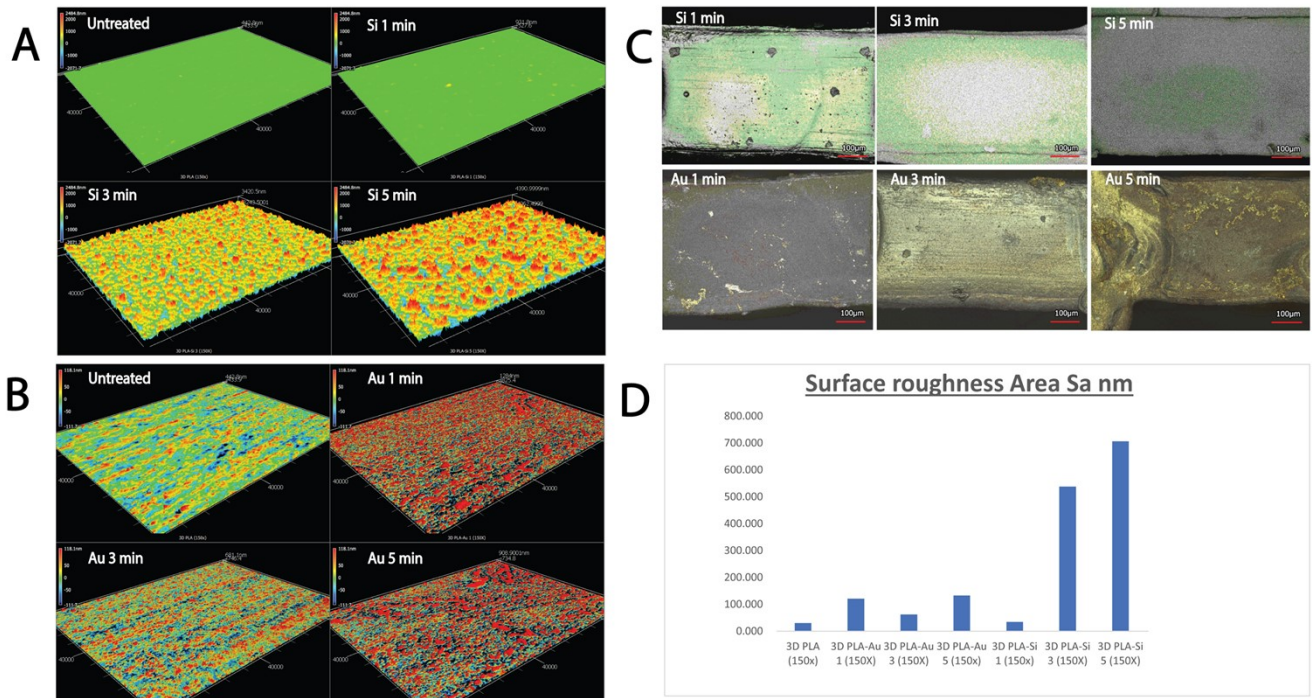


Figure S4: PER and dusty plasma nanoparticle synthesis optimization (A-C) Keyence 3D Confocal Laser Scanning Images of 96 well-plate-design 3D printed wafers treated with dusty silica plasma (A) and PER gold plasma (B) treated at 1 min, 3, min, and 5 min time points. All samples were compared to one untreated control. (C) Surface roughness measurements images of gold and silica nanoparticles from the 3D Confocal Laser Scanning Imaging (D) Quantitation of surface roughness measurements (n=1).

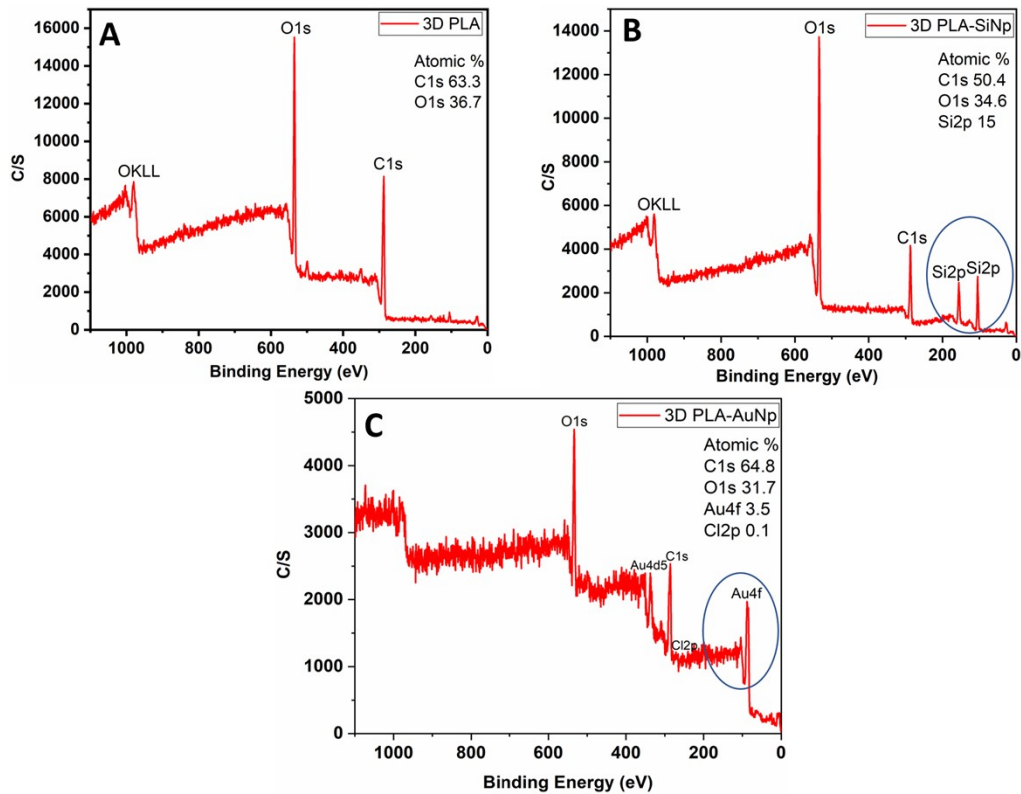


Figure S5: XPS Spectral Analysis of control 3D PLA (A), 3D PLA modified with silica nanoparticles (B), 3D PLA modified with gold nanoparticles (C). The XPS peaks representing silica and gold are circled.

Characteristics	96 Well Plate	24 Well Plate	12 Well Plate
Pore Length in μm , mean (SD)	977.52 (18.07)	931.88 (37.77)	904.63 (53.02)
Pore Height in μm , mean (SD)	2035.19 (7.72)	530.30 (39.54)	2300.55 (12.98)
Surface Roughness Parameters in μm (SD)			
Ra	934.82 (50.46)	178.45 (11.51)	979.54 (96.84)
Rz	2034.74 (7.62)	530.27 (39.52)	2300.23 (13.05)
Rp	948.17 (103.41)	283.23 (12.87)	1079.67 (89.79)
Rv	1086.58 (109.45)	247.05 (32.05)	1220.56 (82.13)
Rt	2034.74 (7.62)	530.28 (39.53)	2300.23 (13.05)
Rq	959.35 (34.40)	190.00 (9.40)	1020.76 (93.14)
Rsk	-0.30 (0.20)	0.35 (0.10)	-0.20 (0.07)
Rku	1.14 (0.08)	1.48 (0.18)	1.19 (0.13)
Rdq	16.46 (2.83)	3.59 (0.36)	16.76 (3.21)

Figure S6: Spatial measurements and surface roughness parameters from 3D Confocal Scanning Microscopy Images taken via a Keyence imaging system with $n = 4$.