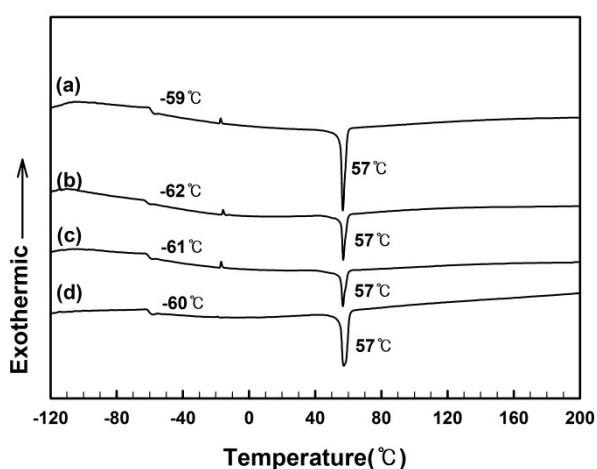


## Supplementary Information

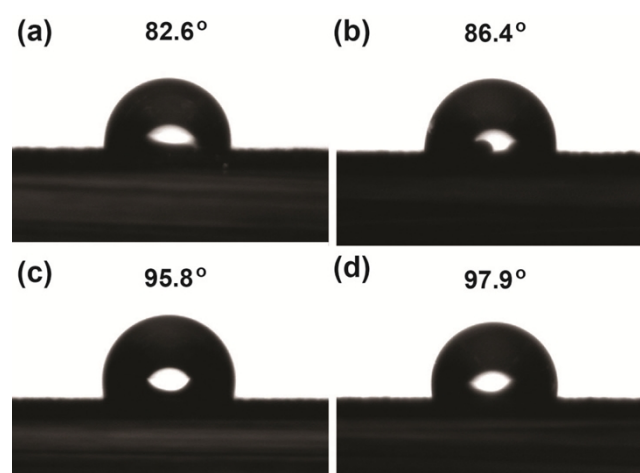
# Microfluidic Fabrication of Microparticles with Multiple Structures from a Biodegradable polymer Blend

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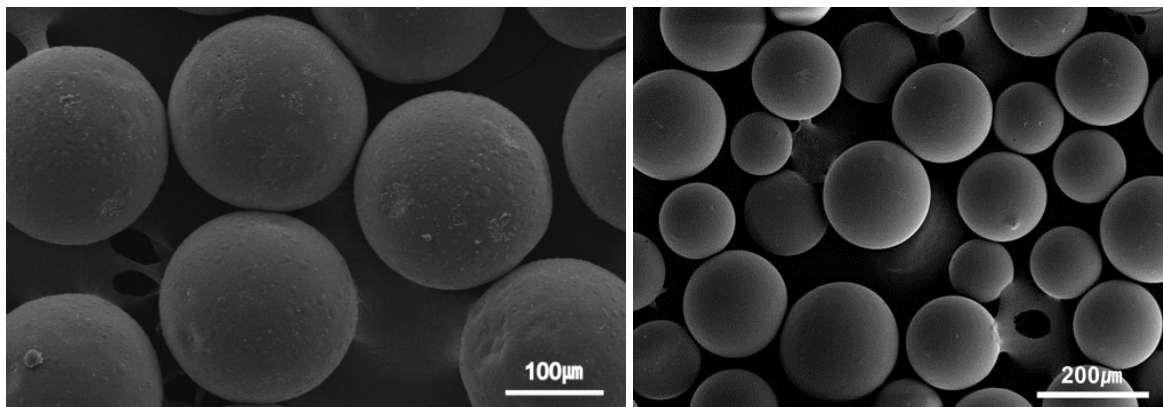
Division of Advanced Materials Engineering, Kongju National University, 1223-24, Cheonan-daero, Seobuk-gu, Cheonan, Chungnam, Korea, 331-717



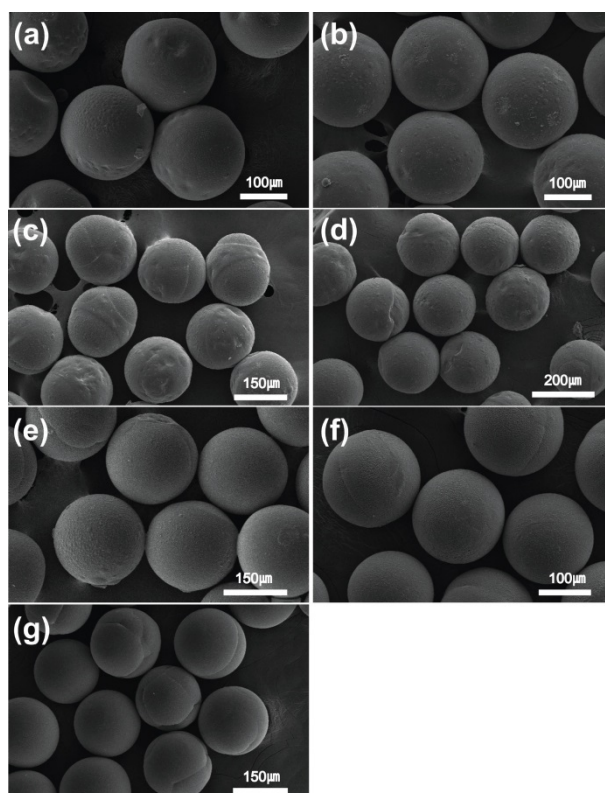
**Figure S1.** DSC curves of various blend ratio with (a) PLGA:PCL=8:2, (b) PLGA:PCL=6:4, (c) PLGA:PCL=4:6, and (d) PLGA:PCL=2:8.



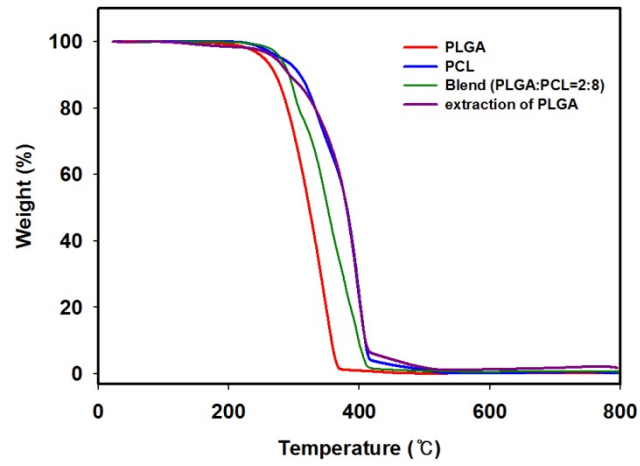
**Figure S2.** Photograph of water droplets on single layers of microparticles formed from various PLGA/PCL blend ratio: (a)10:0, (b) 8:2, (c) 7:3, and (d) 0:10.



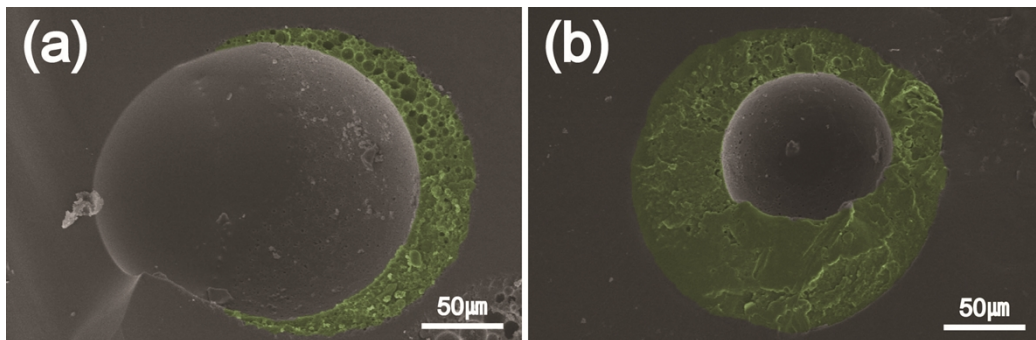
**Figure S3.** Uniform sized core-shell type microparticles from PLGA/PCL blend ratio of 7:3 using microfluidic device (left) and PLGA microparticles prepared from dropping organic droplets into the 1% PVA aqueous solution in the beaker stirred at 300 rpm (right).



**Figure S4.** Uniform sized microparticles from PLGA/PCL blend ratio of (a) 8:2, (b) 7:3, (c) 6.5:3.5, (d) 6:4, (e) 5.5:4.5, (f) 4:6 and (g) 2:8.



**Figure S5.** Thermogravimetric analysis (TGA) profiles of PLGA, PCL, PLGA/PCL blend and selective extraction of PLGA.



**Figure S6.** False color SEM images showing cross-section of the selective extraction of PLGA. (a) PLGA:PCL=6:4, (b) PLGA:PCL=4:6. In this cross-section, the PCL portion is green.

**Table S1.** Microparticles size obtained from various ratio of PLGA and PCL.

Sample	Average(Standard deviation)
PLGA:PCL=10:0	185.1 ( $\pm 2.7\mu\text{m}$ )
PLGA:PCL=8:2	203.4 ( $\pm 5.3\mu\text{m}$ )
PLGA:PCL=7:3	206.9 ( $\pm 3.0\mu\text{m}$ )
PLGA:PCL=6.5:3.5	193.7 ( $\pm 5.1\mu\text{m}$ )
PLGA:PCL=6:4	205.3 ( $\pm 4.6\mu\text{m}$ )
PLGA:PCL=5.5:4.5	217.2 ( $\pm 6.3\mu\text{m}$ )
PLGA:PCL=5:5	207.2 ( $\pm 1.8\mu\text{m}$ )
PLGA:PCL=4:6	187.0 ( $\pm 7.8\mu\text{m}$ )
PLGA:PCL=2:8	197.2 ( $\pm 5.5\mu\text{m}$ )
PLGA:PCL=0:10	203.7 ( $\pm 2.6\mu\text{m}$ )
Total	199.6 ( $\pm 10.2\mu\text{m}$ )

**Table S2.** TGA results for PLGA, PCL, PLGA/PCL blend, selective extraction of PLGA. ( $T_{50\%}$  : mid-point of the degradation)

Sample	$T_{50\%}$ ( $^{\circ}\text{C}$ )
PLGA	323
PCL	380
PLGA/PCL blend	350
Selective extraction of PLGA	380