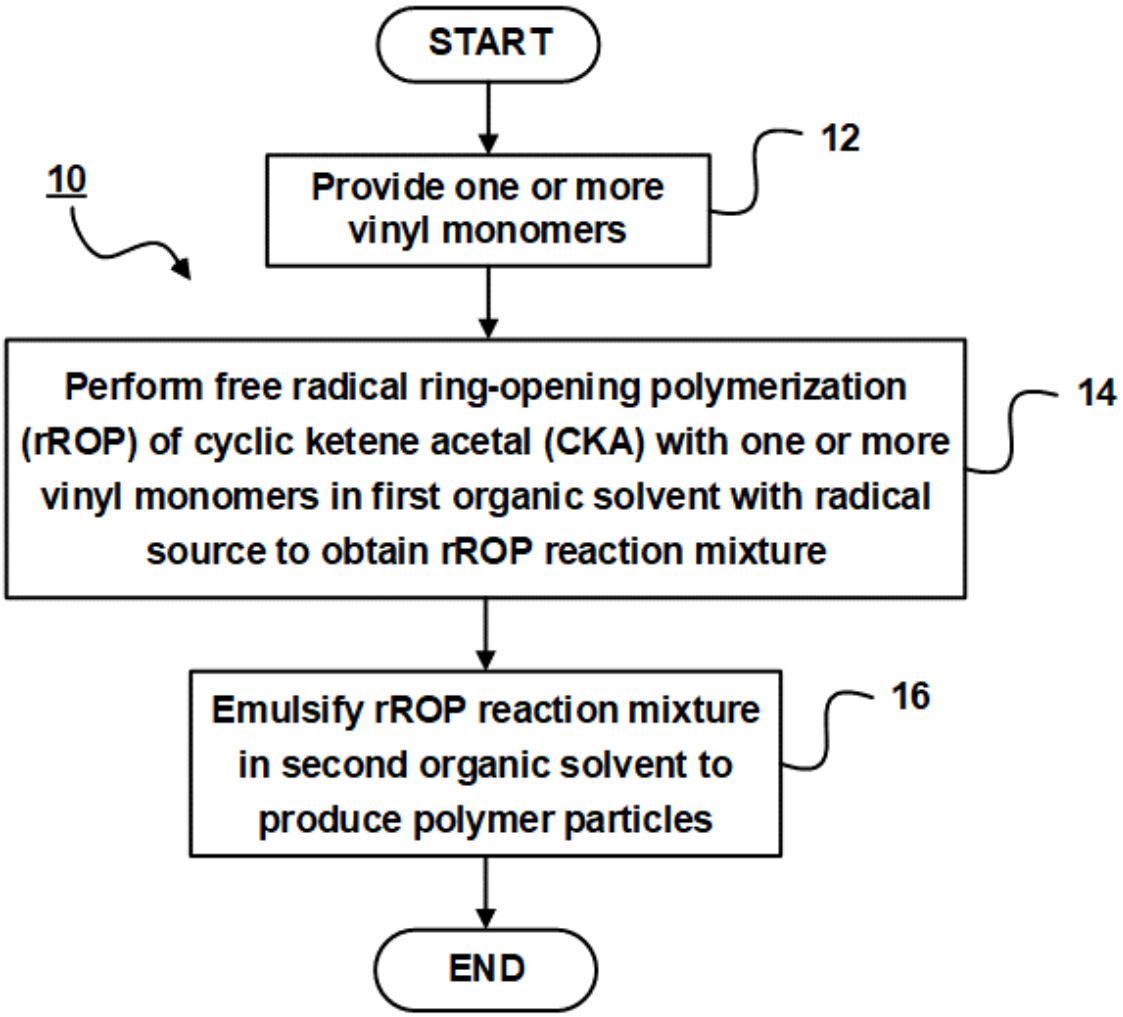

START
10
Provide one or more vinyl monomers
12
Perform free radical ring-opening polymerization (rROP) of cyclic ketene acetal (CKA) with one or more vinyl monomers in first organic solvent with radical source to obtain rROP reaction mixture
14
Emulsify rROP reaction mixture in second organic solvent to produce polymer particles
16
END

FIG. 1

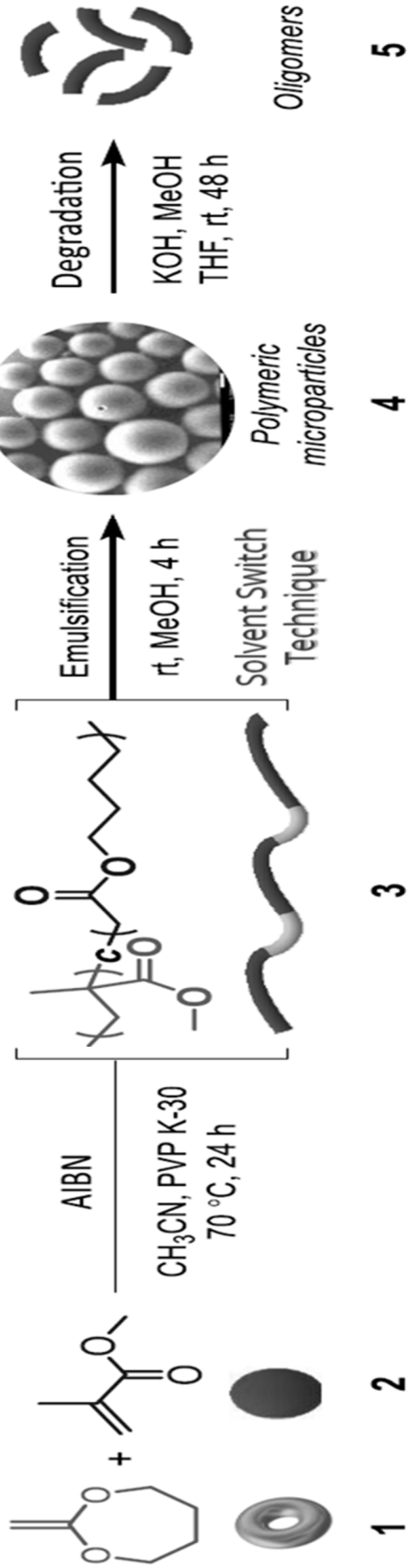

AIBN
CH3CN, PVP K-30
70 °C, 24 h
Emulsification
rt, MeOH, 4 h
Solvent Switch
Technique
Degradation
KOH, MeOH
THF, rt, 48 h
Polymeric
microparticles
Oligomers
1
2
3
4
5

FIG. 2

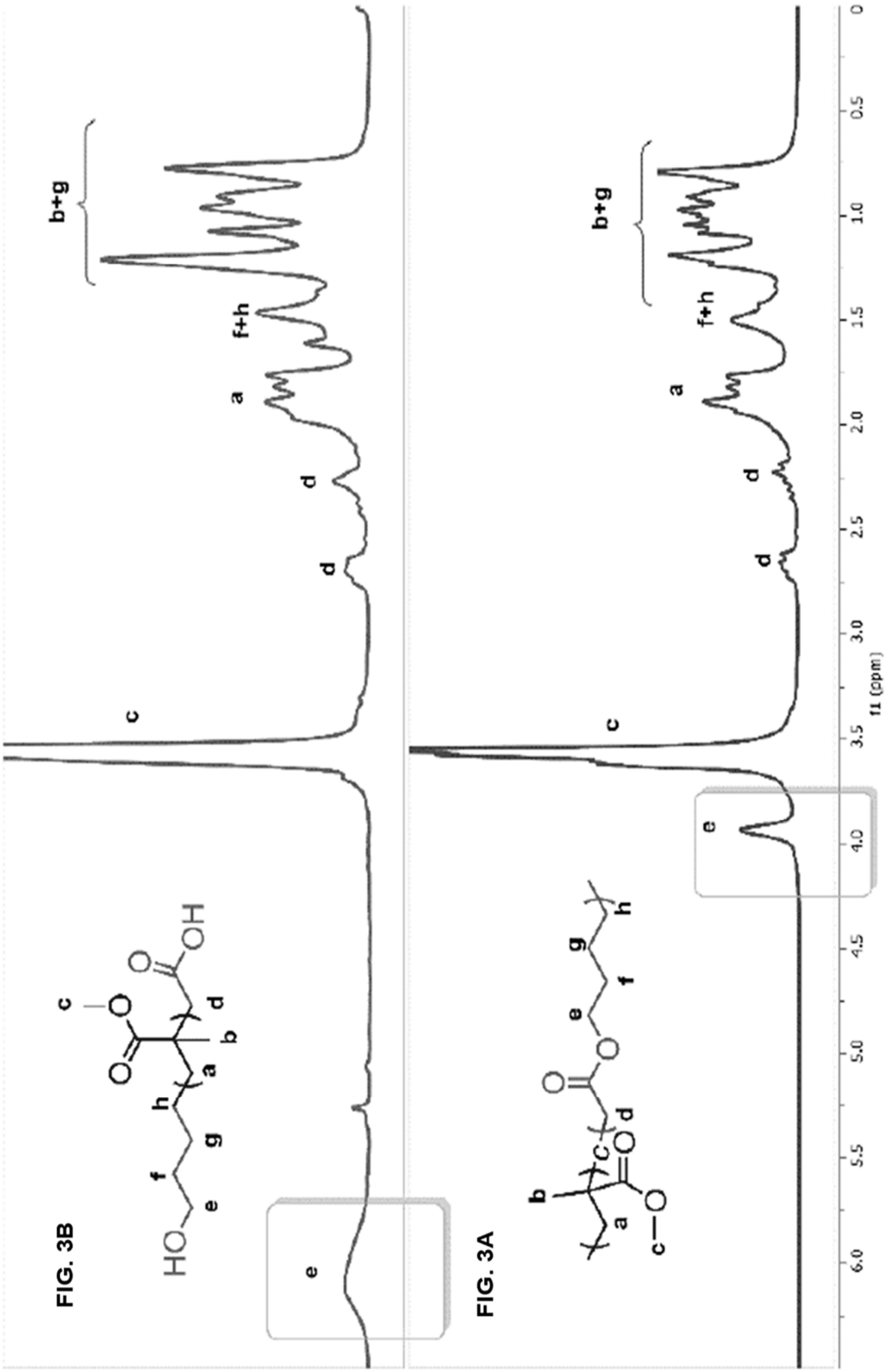


FIG. 3B

FIG. 3A

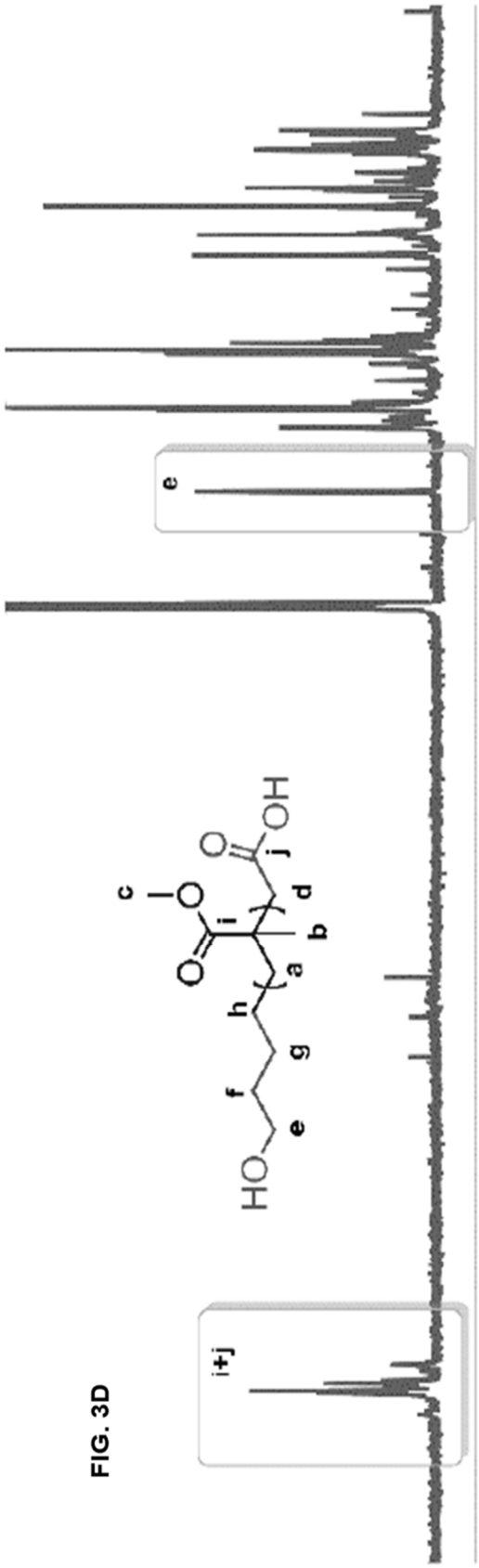


FIG. 3D

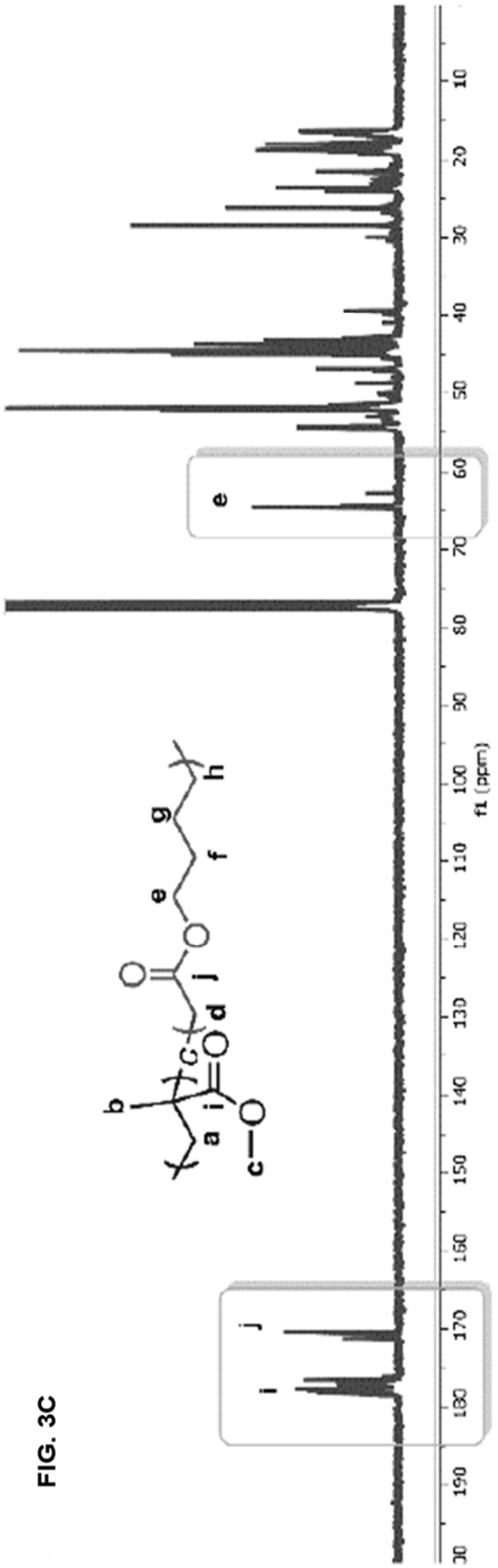


FIG. 3C

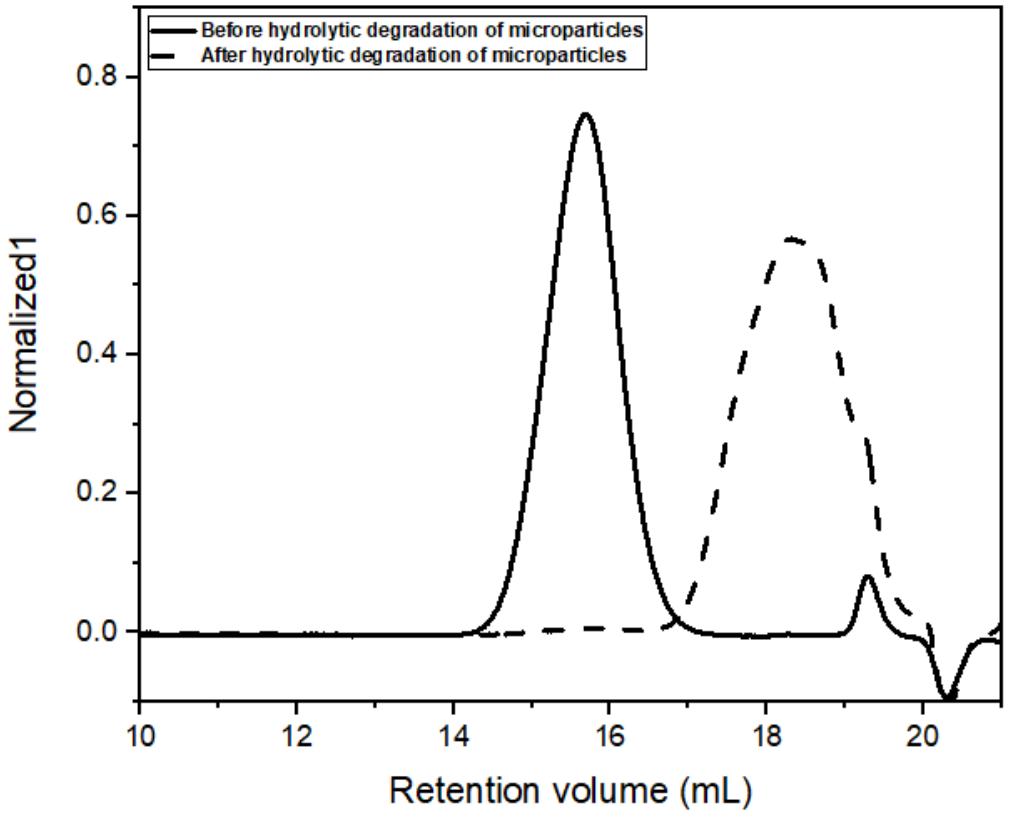

Before hydrolytic degradation of microparticles
After hydrolytic degradation of microparticles
Normalized1
0.0
0.2
0.4
0.6
0.8
10
12
14
16
18
20
Retention volume (mL)

FIG. 4A

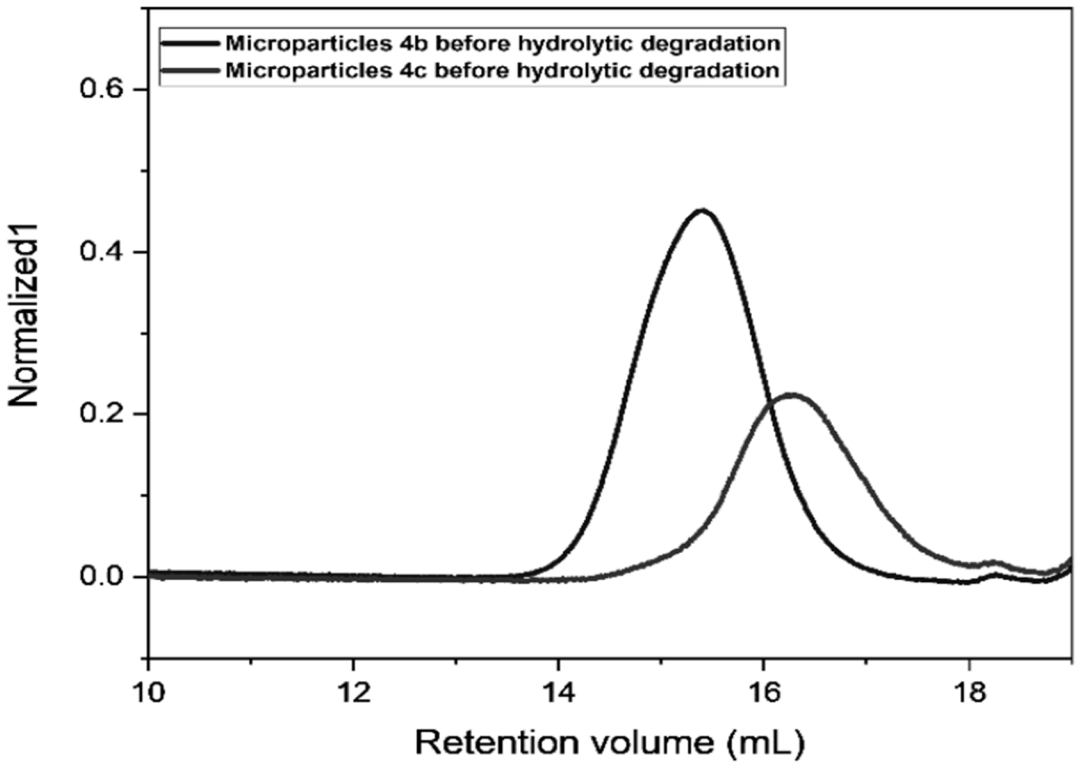
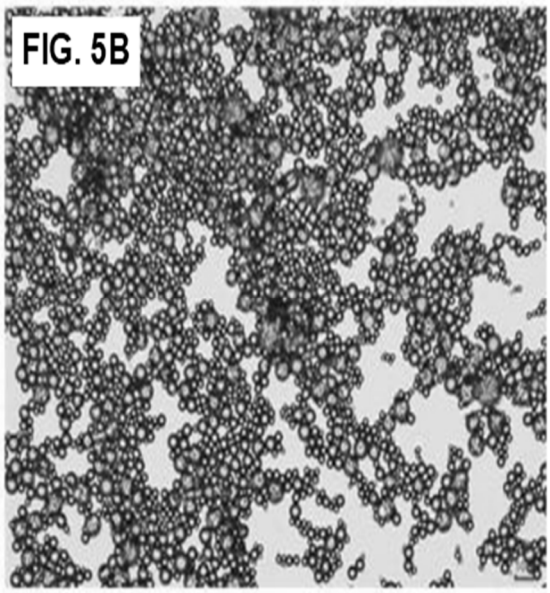
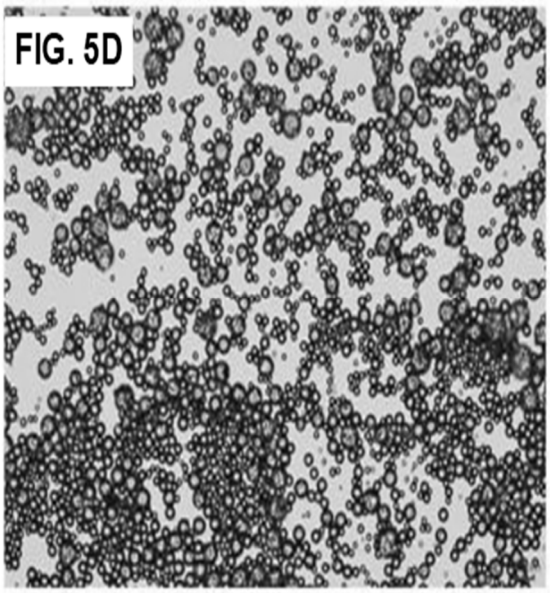
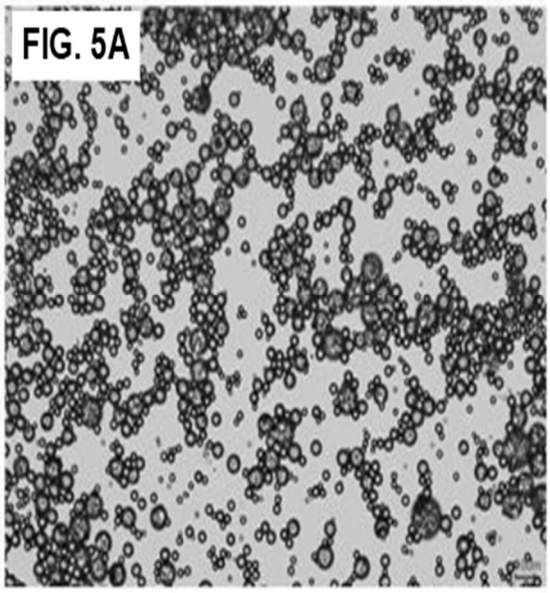
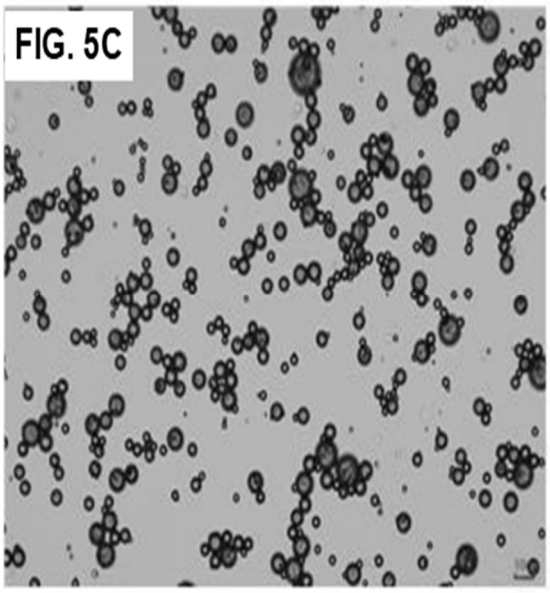

Microparticles 4b before hydrolytic degradation
Microparticles 4c before hydrolytic degradation
Normalized1
0.0
0.2
0.4
0.6
10
12
14
16
18
Retention volume (mL)

FIG. 4B


FIG. 5B


FIG. 5D


FIG. 5A


FIG. 5C

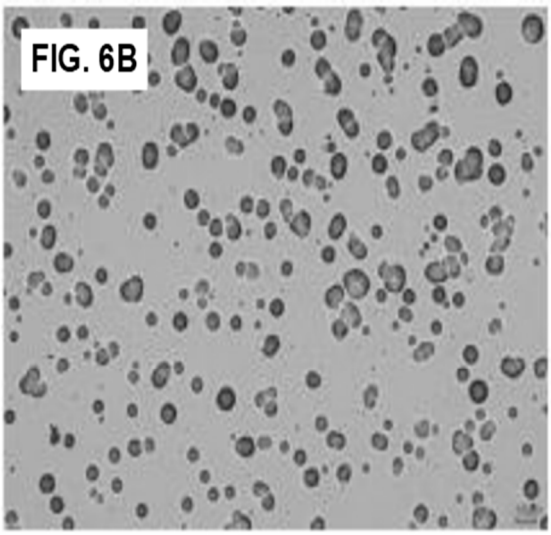


FIG. 6B

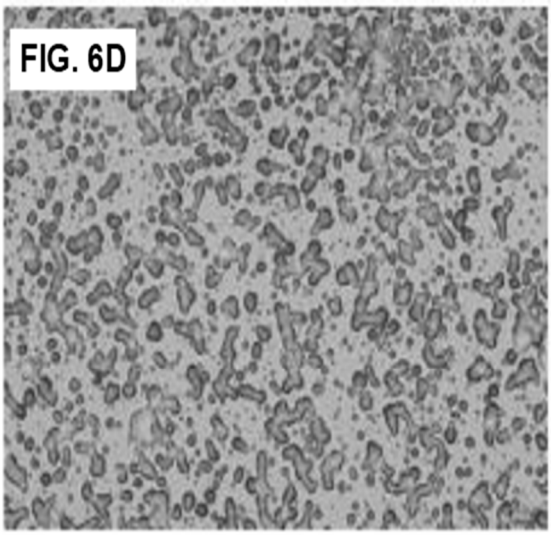


FIG. 6D

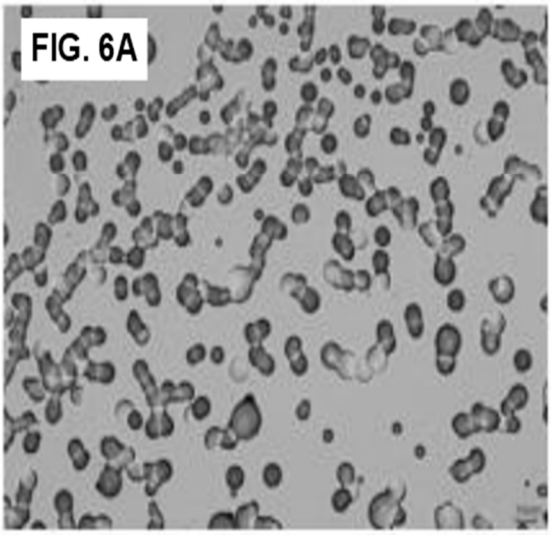


FIG. 6A

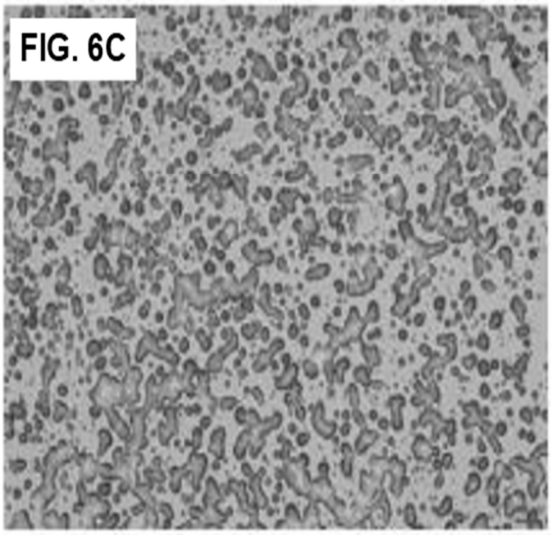


FIG. 6C

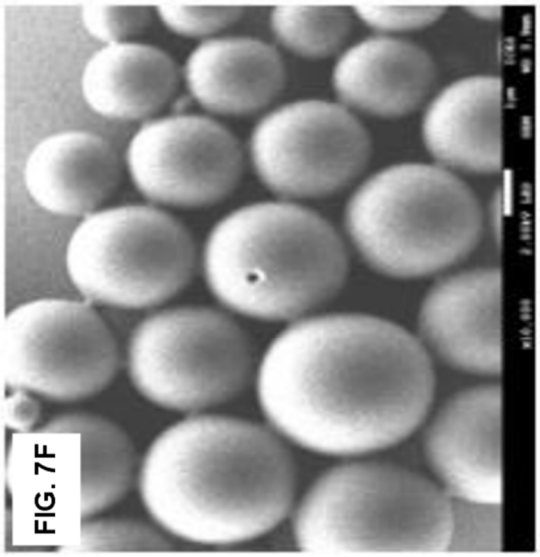


FIG. 7F

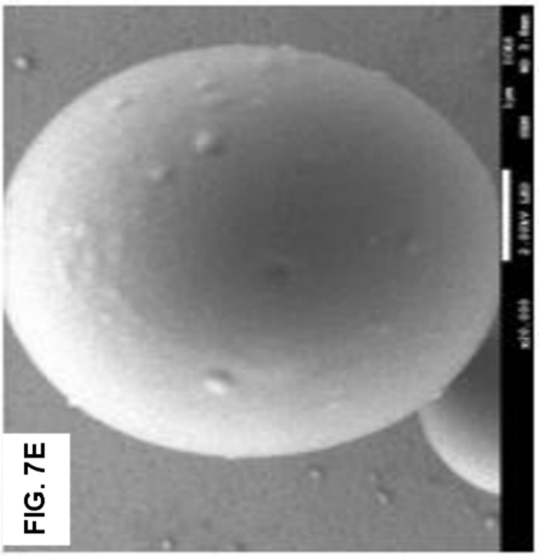


FIG. 7E

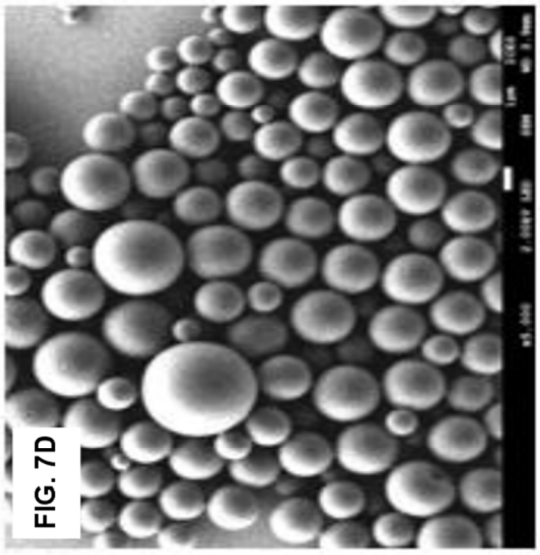


FIG. 7D

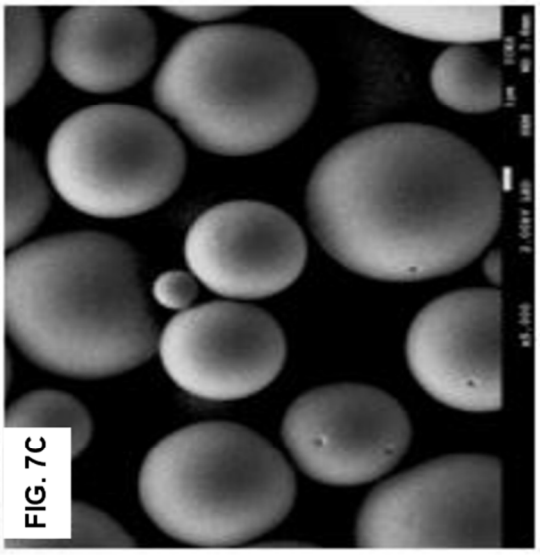


FIG. 7C

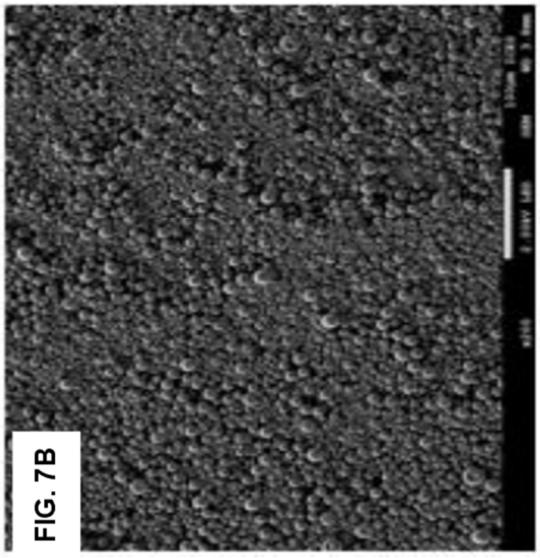


FIG. 7B

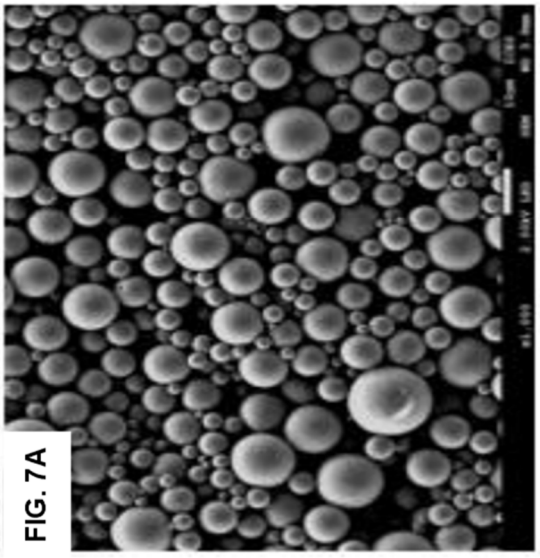
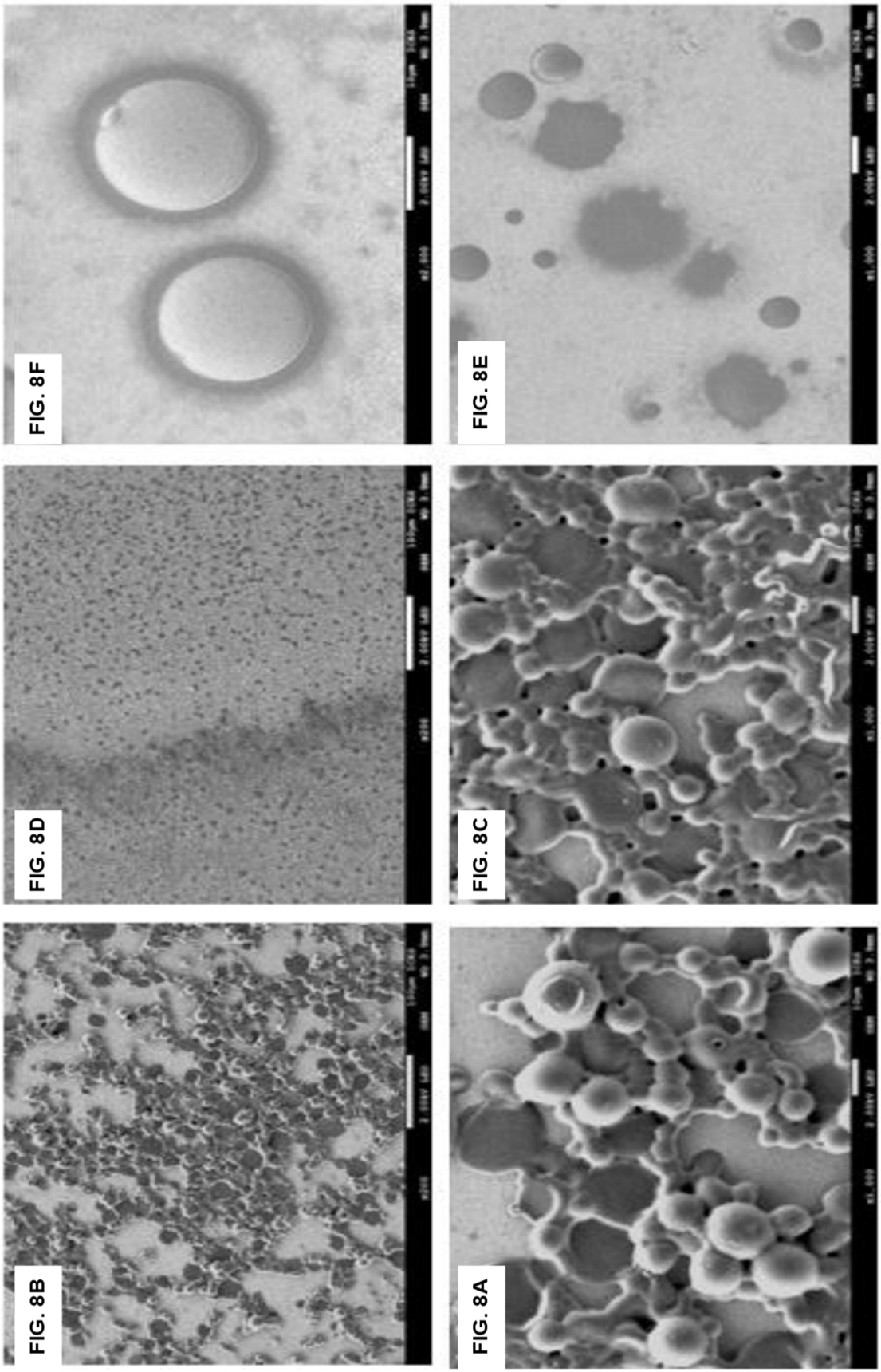


FIG. 7A


FIG. 8F
FIG. 8E
FIG. 8D
FIG. 8C
FIG. 8B
FIG. 8A

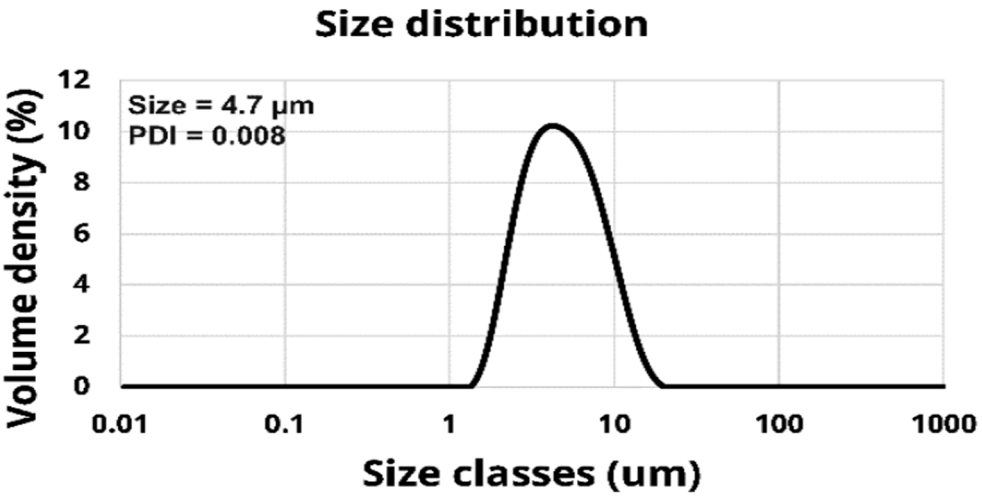


FIG. 9A

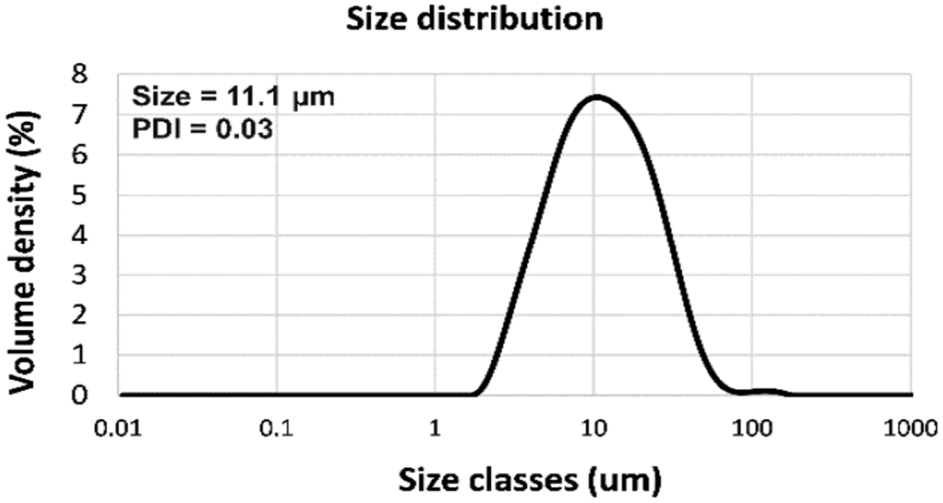


FIG. 9B

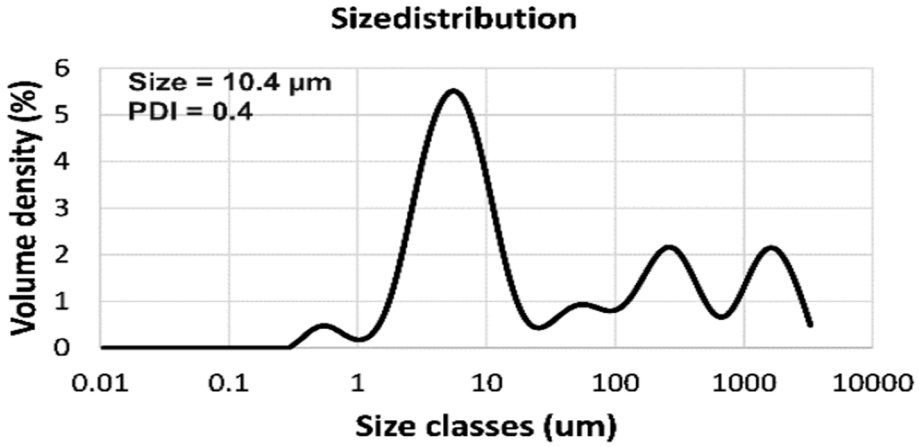
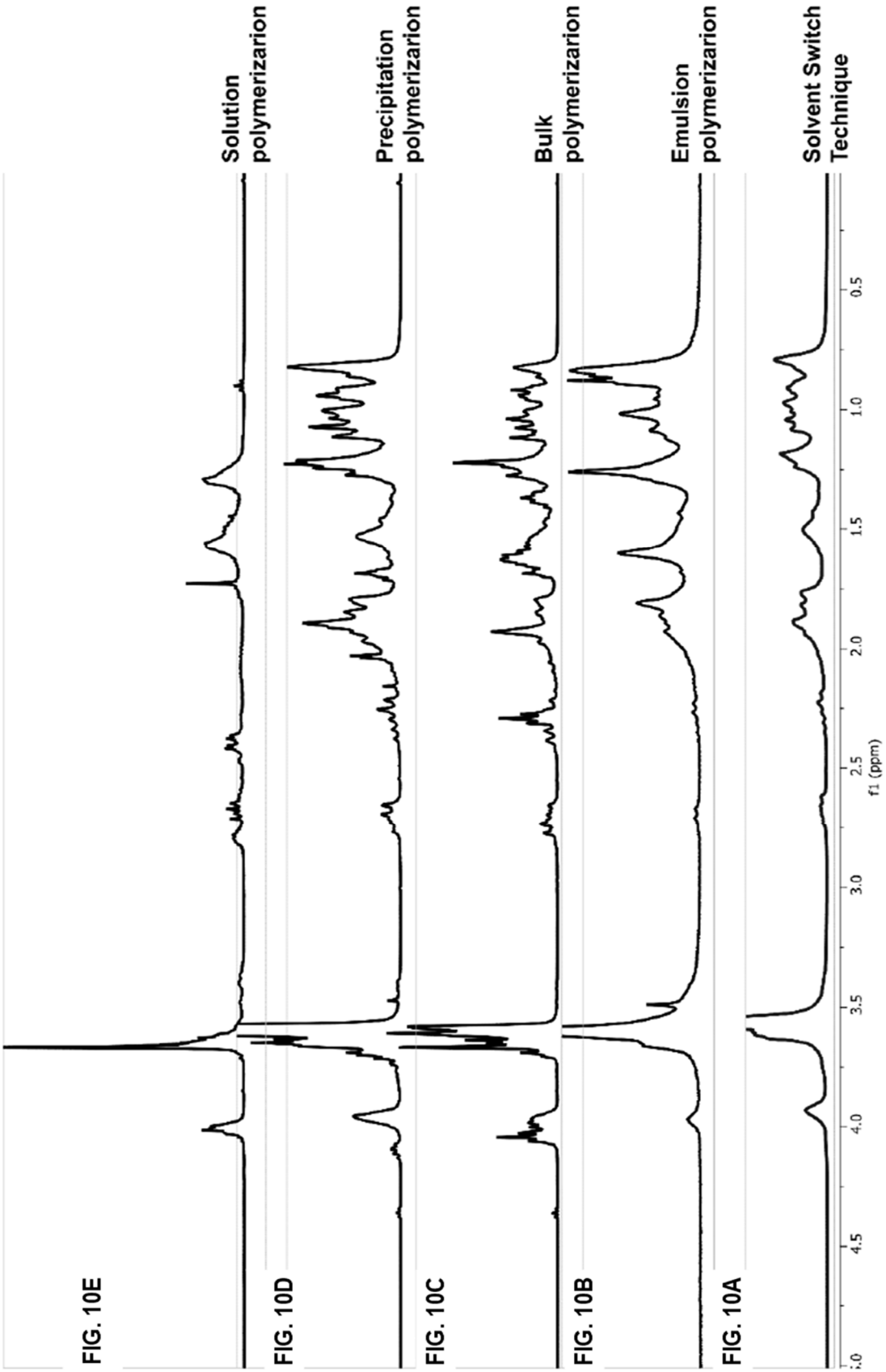


FIG. 9C


FIG. 10E
Solution polymerizarion
FIG. 10D
Precipitation polymerizarion
FIG. 10C
Bulk polymerizarion
FIG. 10B
Emulsion polymerizarion
FIG. 10A
Solvent Switch Technique
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
f1 (ppm)

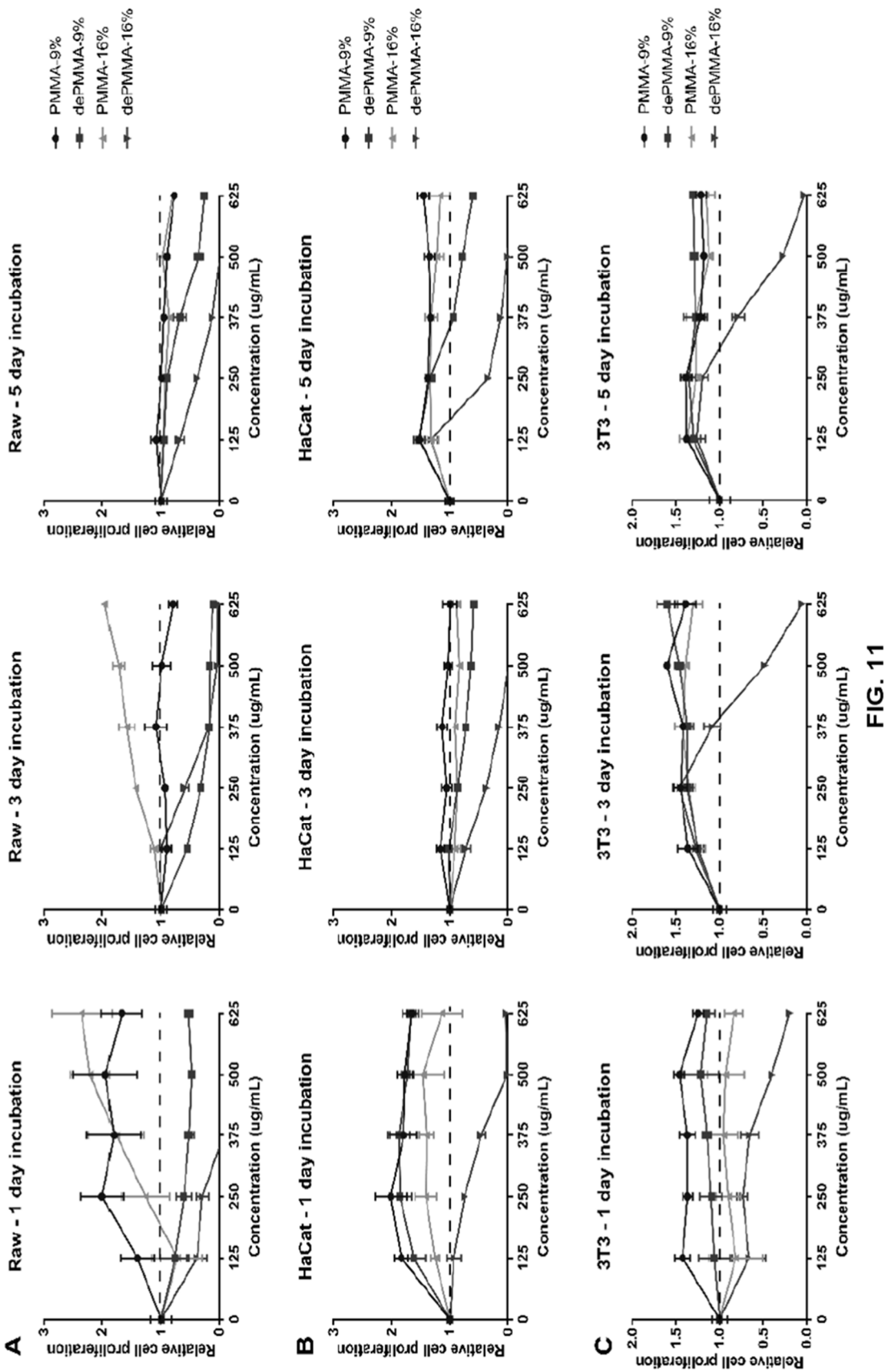

A
Raw - 1 day incubation
Raw - 3 day incubation
Raw - 5 day incubation
B
HaCat - 1 day incubation
HaCat - 3 day incubation
HaCat - 5 day incubation
C
3T3 - 1 day incubation
3T3 - 3 day incubation
3T3 - 5 day incubation
Relative cell proliferation
Concentration (ug/mL)
PMMA-9%
dePMMA-9%
PMMA-16%
dePMMA-16%

FIG. 11

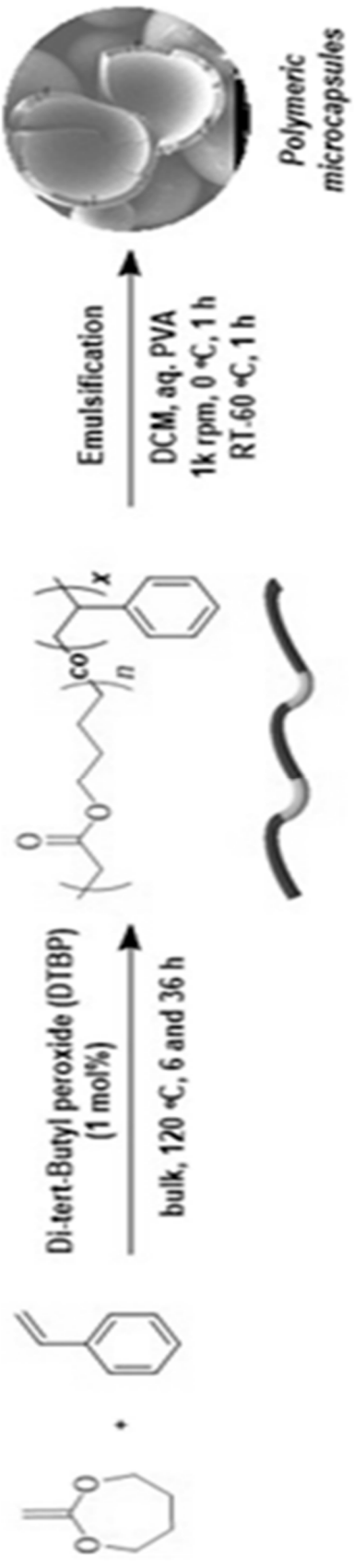

Di-tert-Butyl peroxide (DTBP)
(1 mol%)
bulk, 120 °C, 6 and 36 h
Emulsification
DCM, aq. PVA
1k rpm, 0 °C, 1 h
RT-60 °C, 1 h
Polymeric
microcapsules

FIG. 12

Oil phase	Weight (g)
Poly(St-*co*-MDO)	2.55
Hexadecane or Heptane	3.86 (*63 wt% of total disperse*)
DCM	70.5
Continuous phase	
Water	76.0 + 120 = 196
PVA	1.96 (1 wt%)

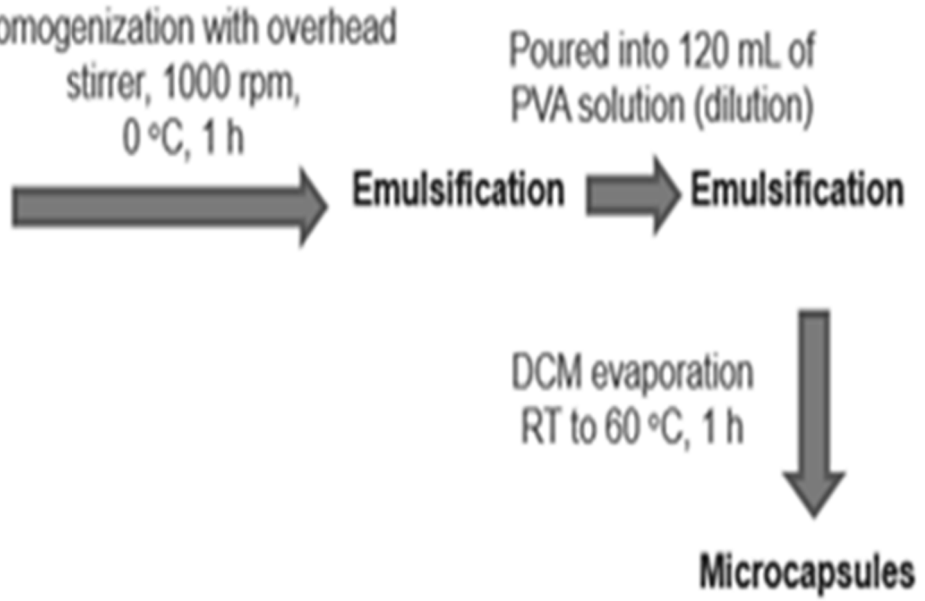


FIG. 13

FIG. 14B

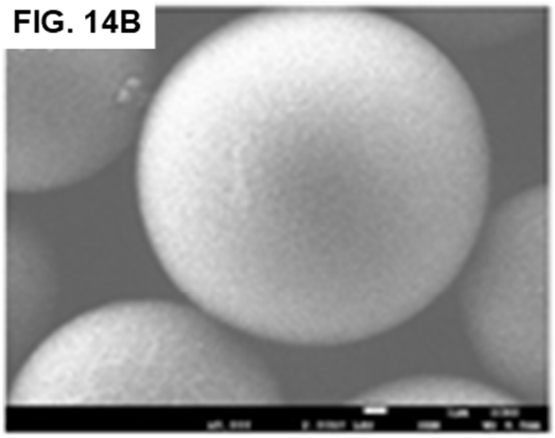


FIG. 14D

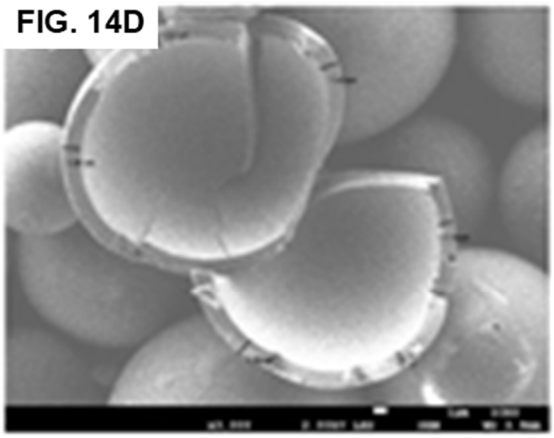


FIG. 14A

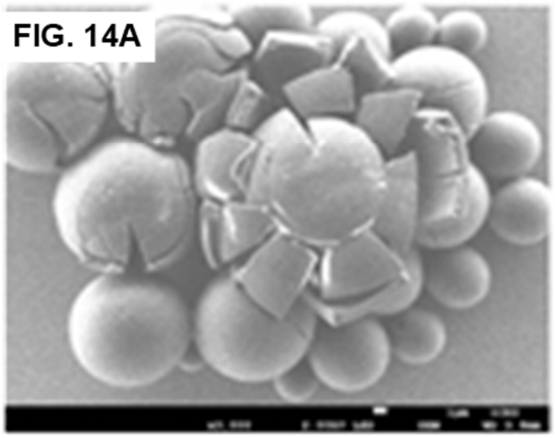


FIG. 14C

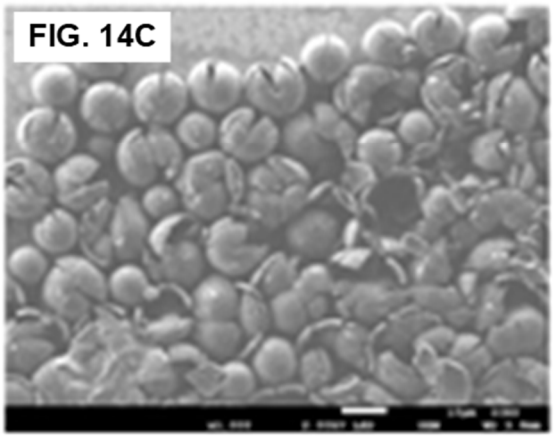


FIG. 15B

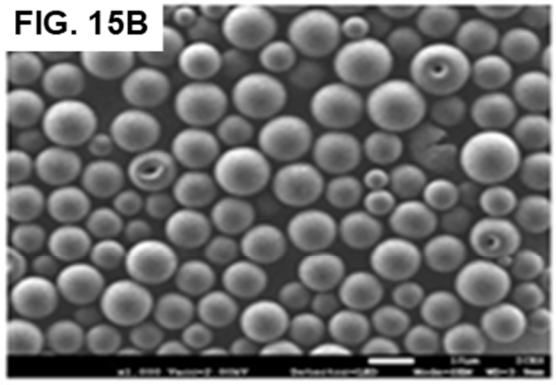


FIG. 15D

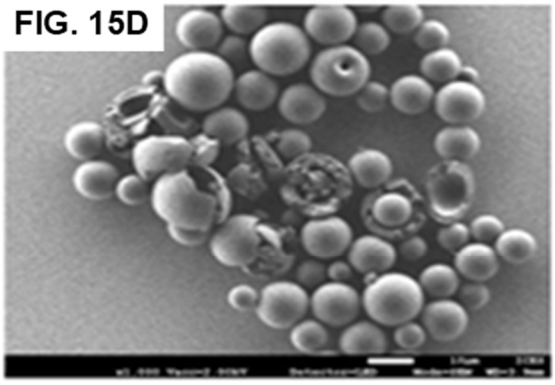


FIG. 15A

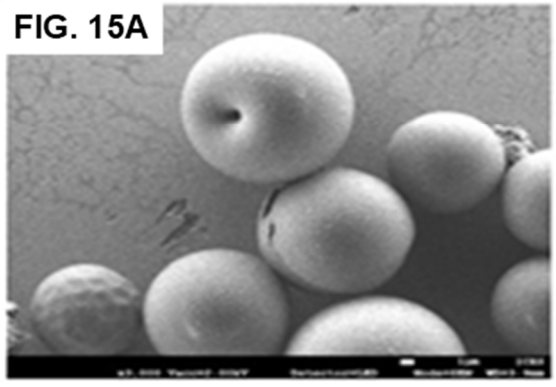
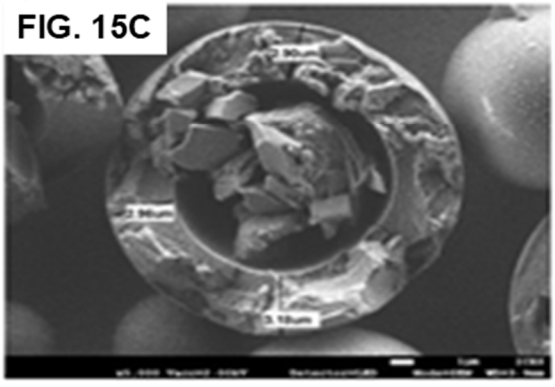


FIG. 15C



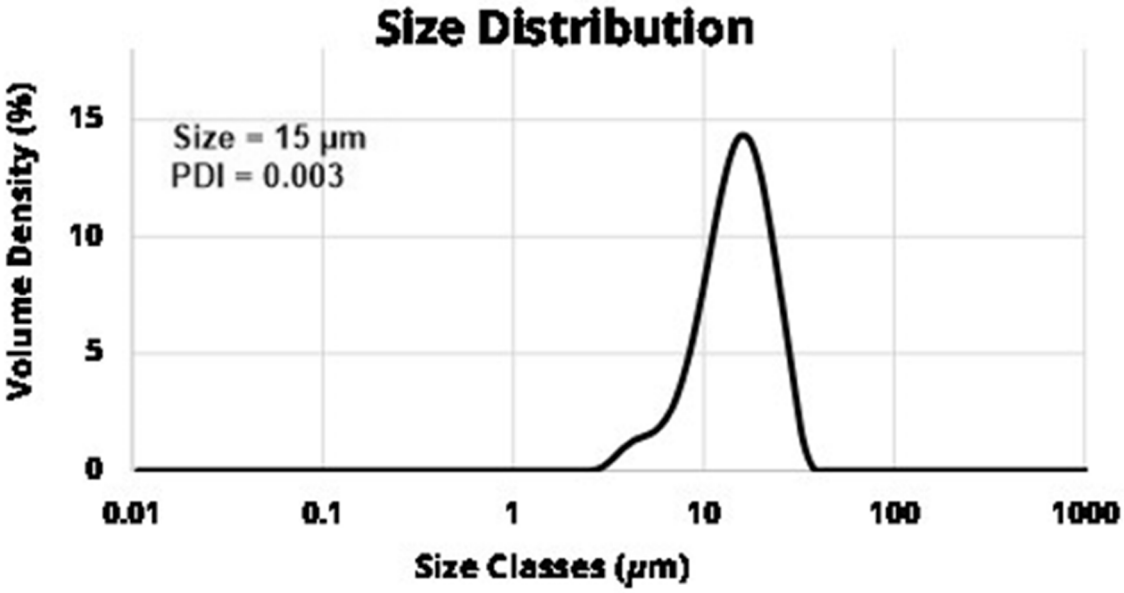


FIG. 16A

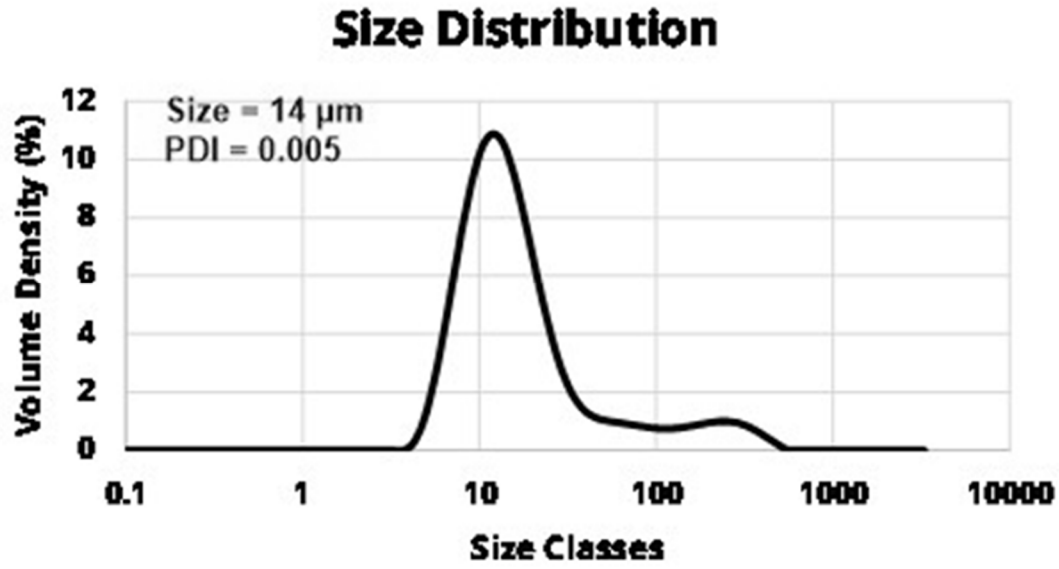


FIG. 16B