

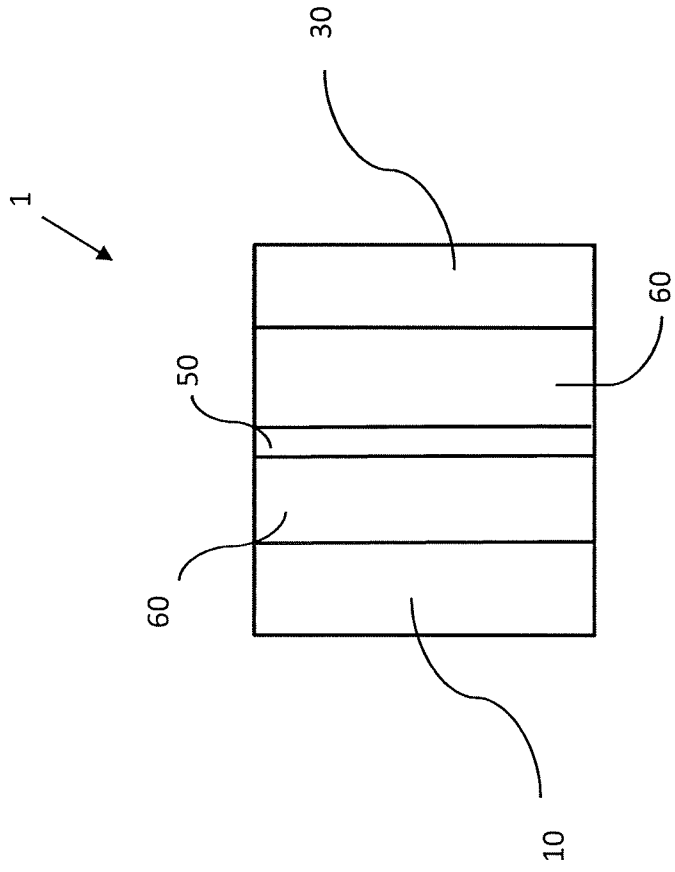


FIG. 1

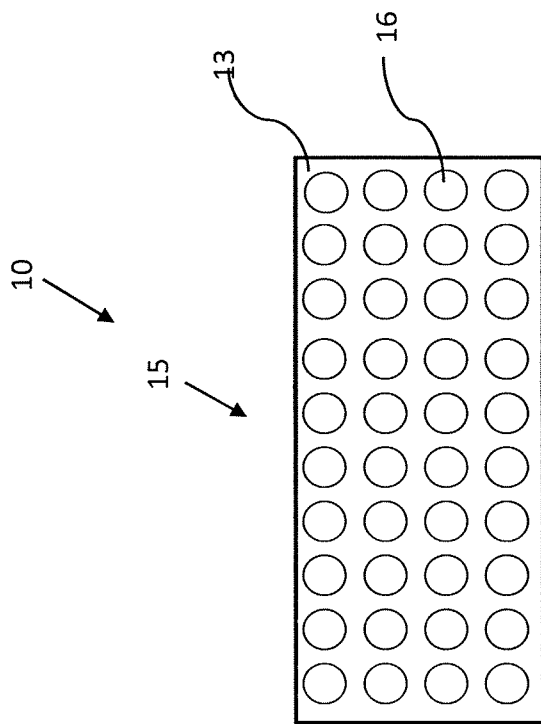


FIG. 2

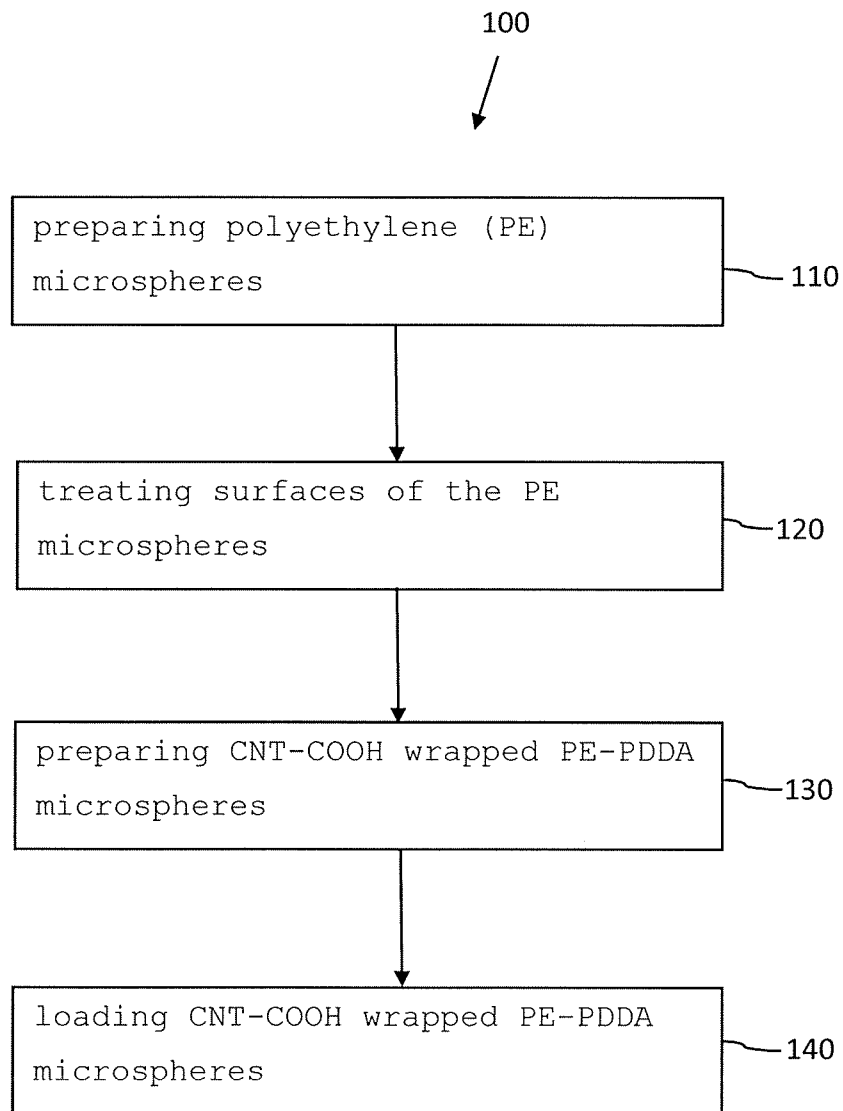


FIG. 3

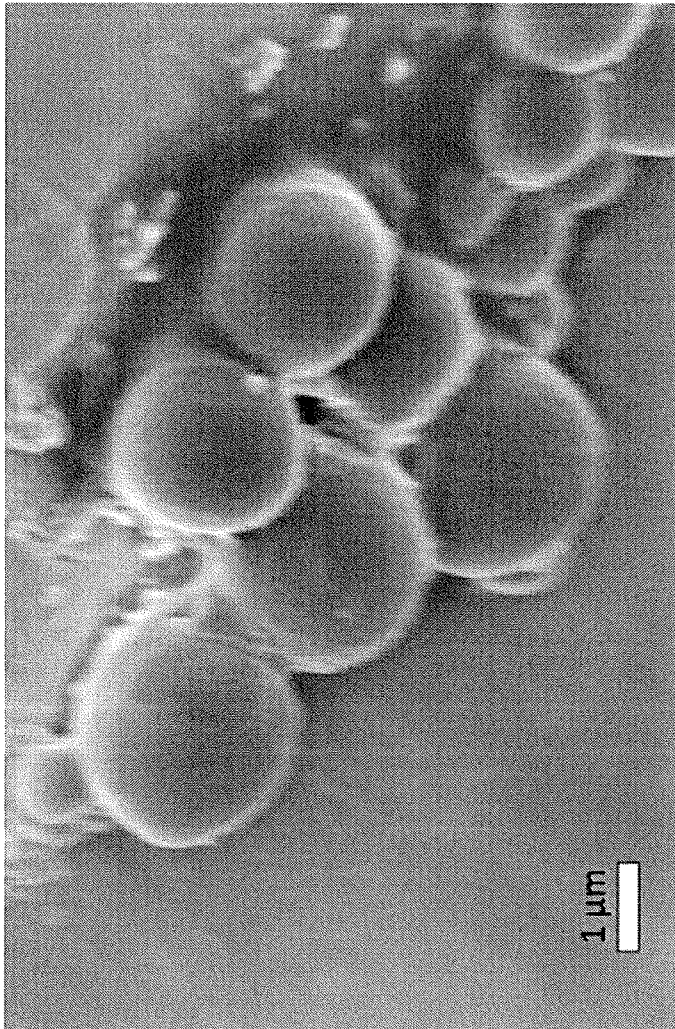


FIG. 4

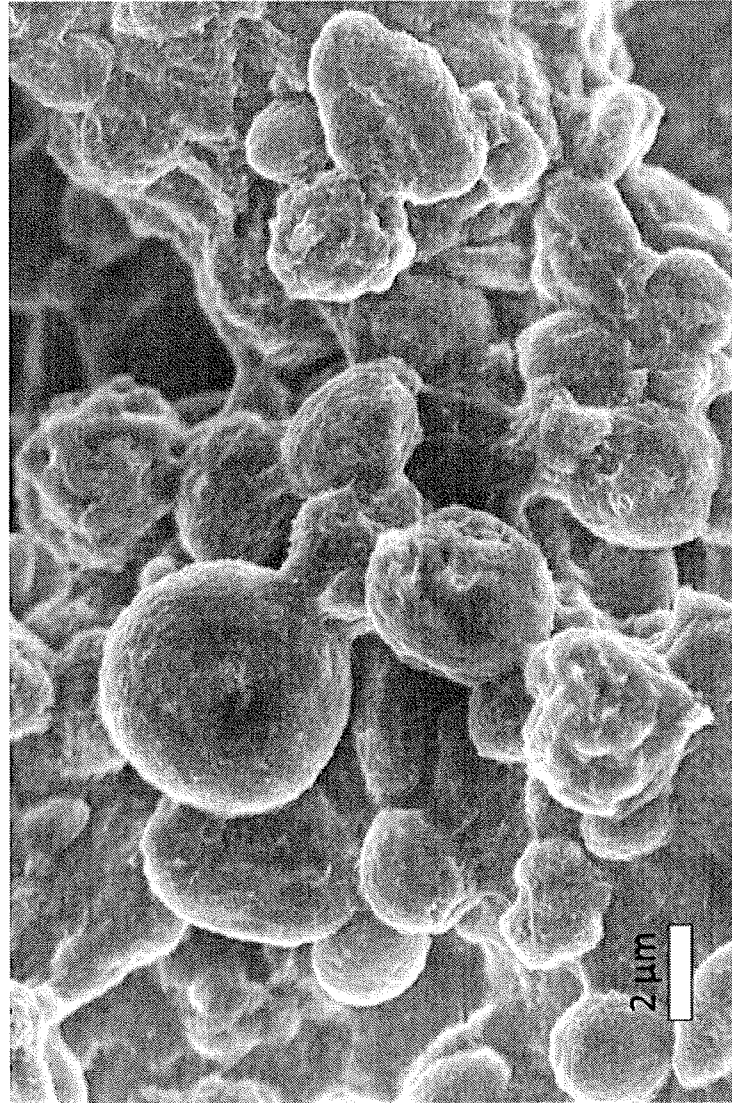


FIG. 5

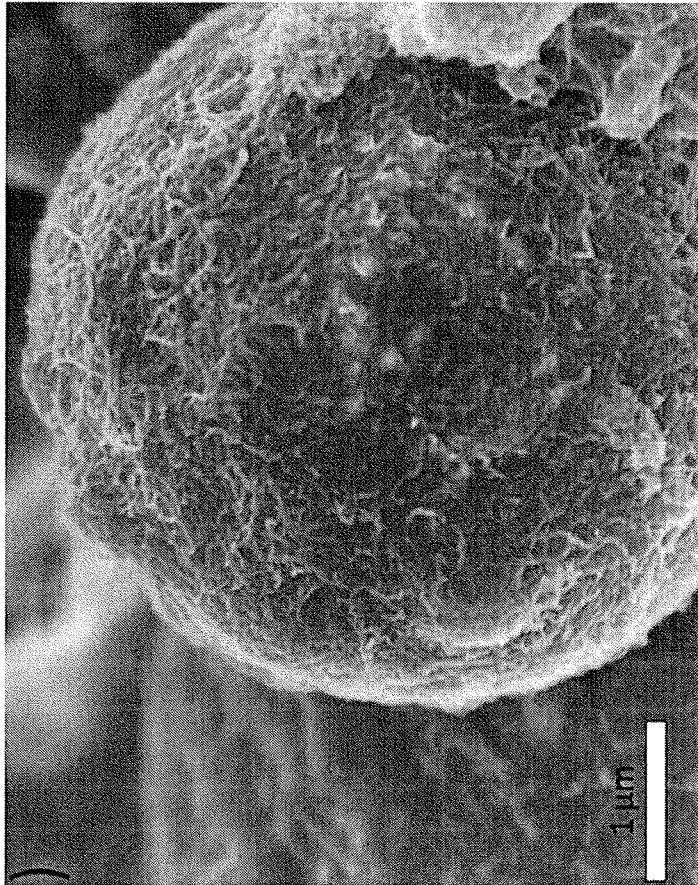


FIG. 6

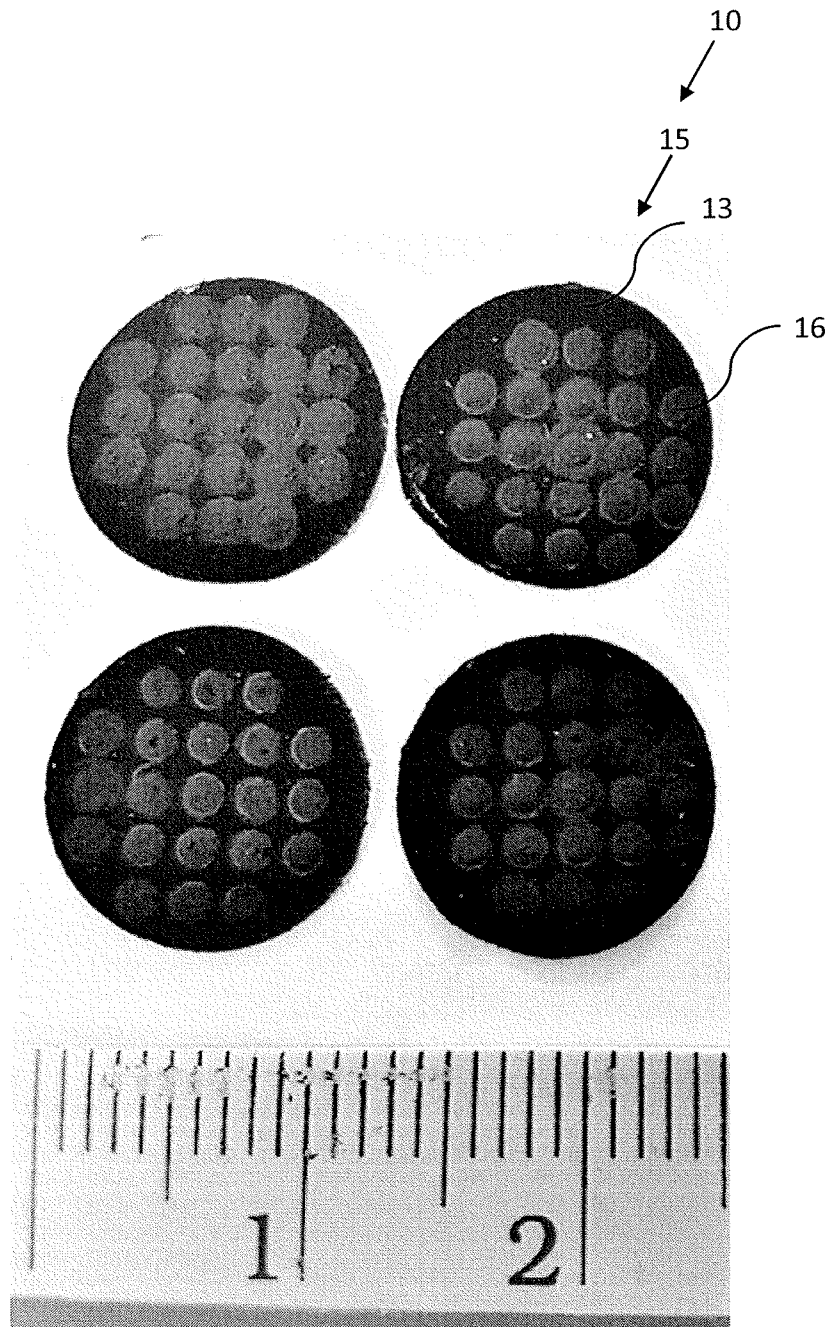


FIG. 7

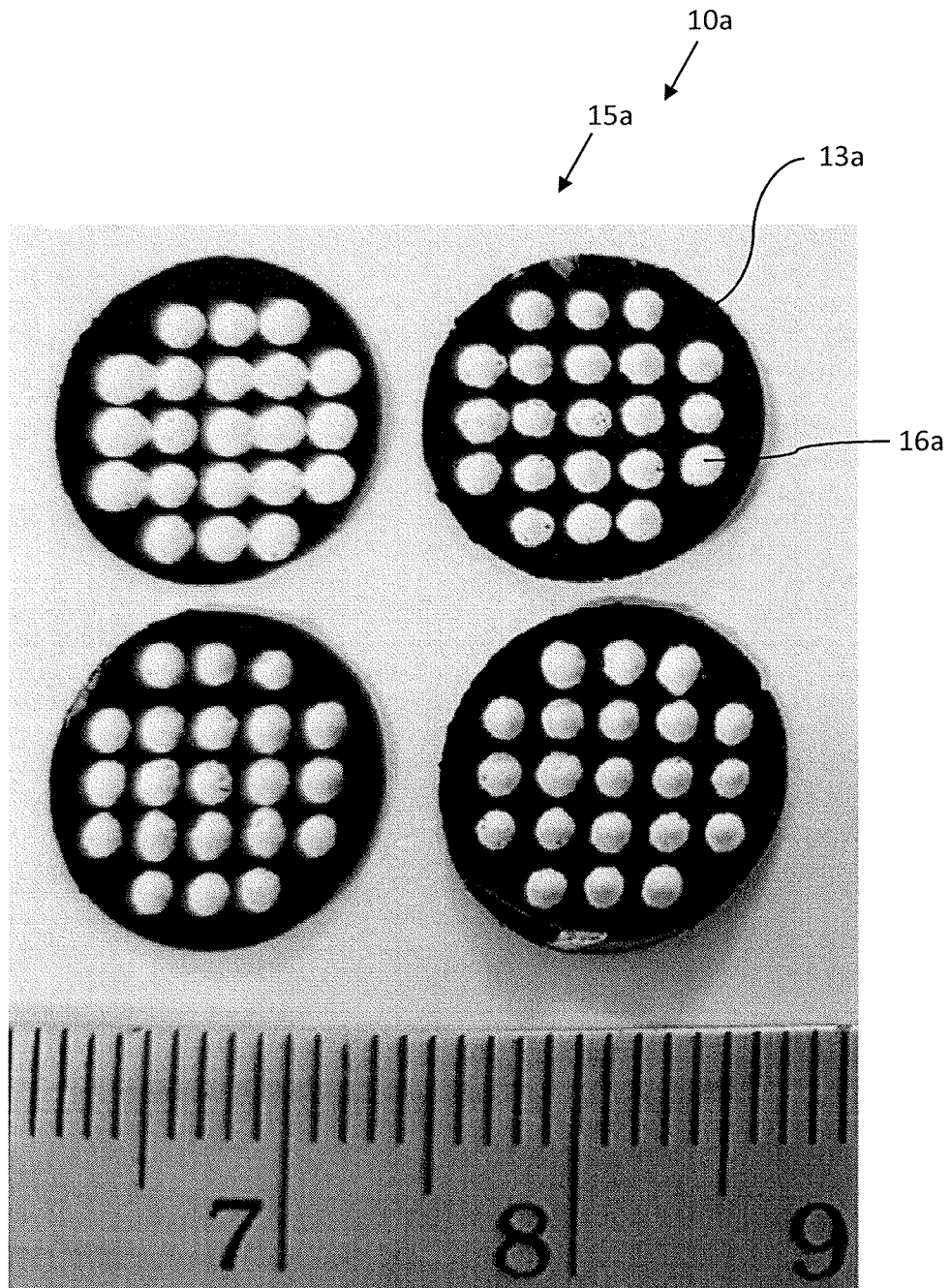


FIG. 8

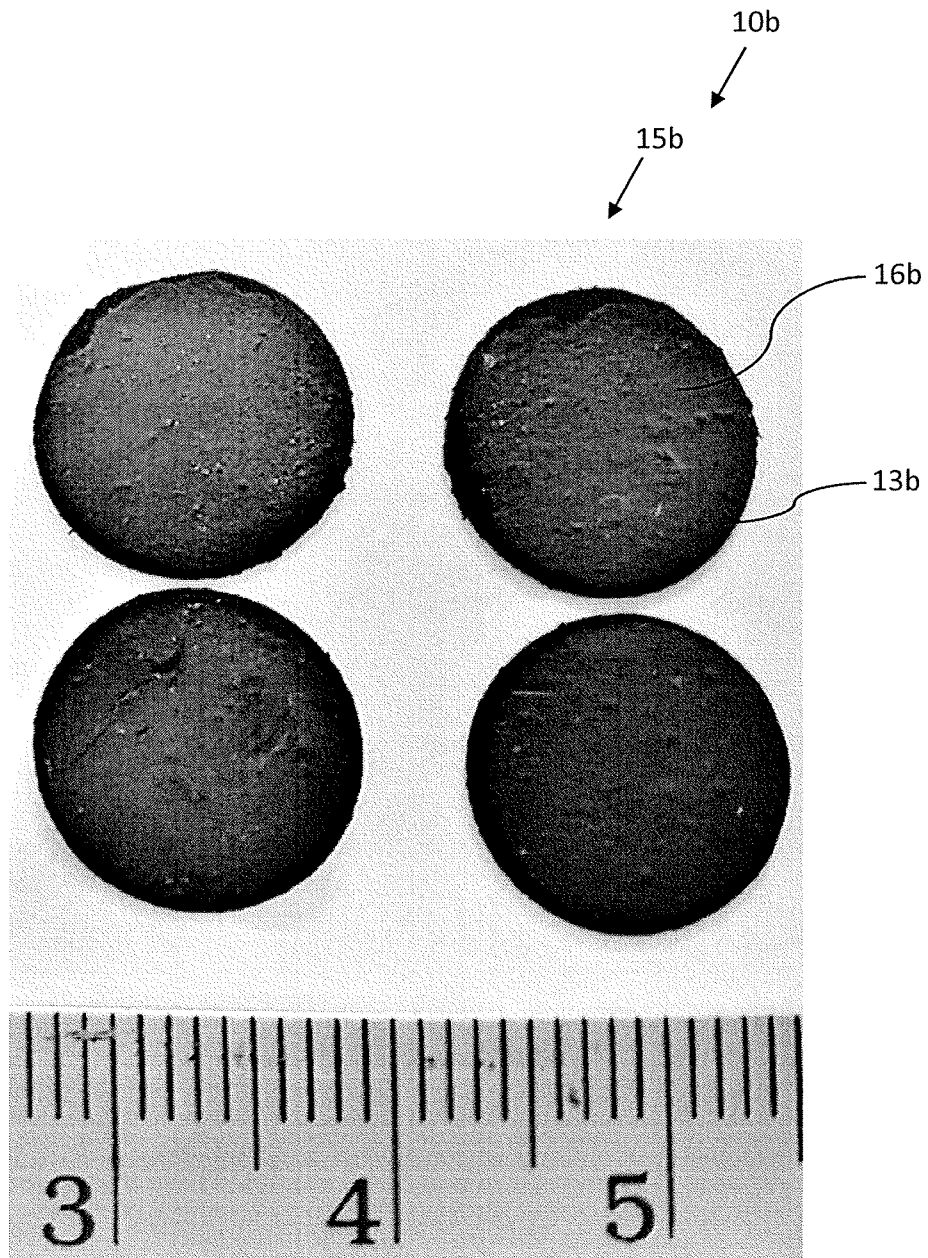


FIG. 9

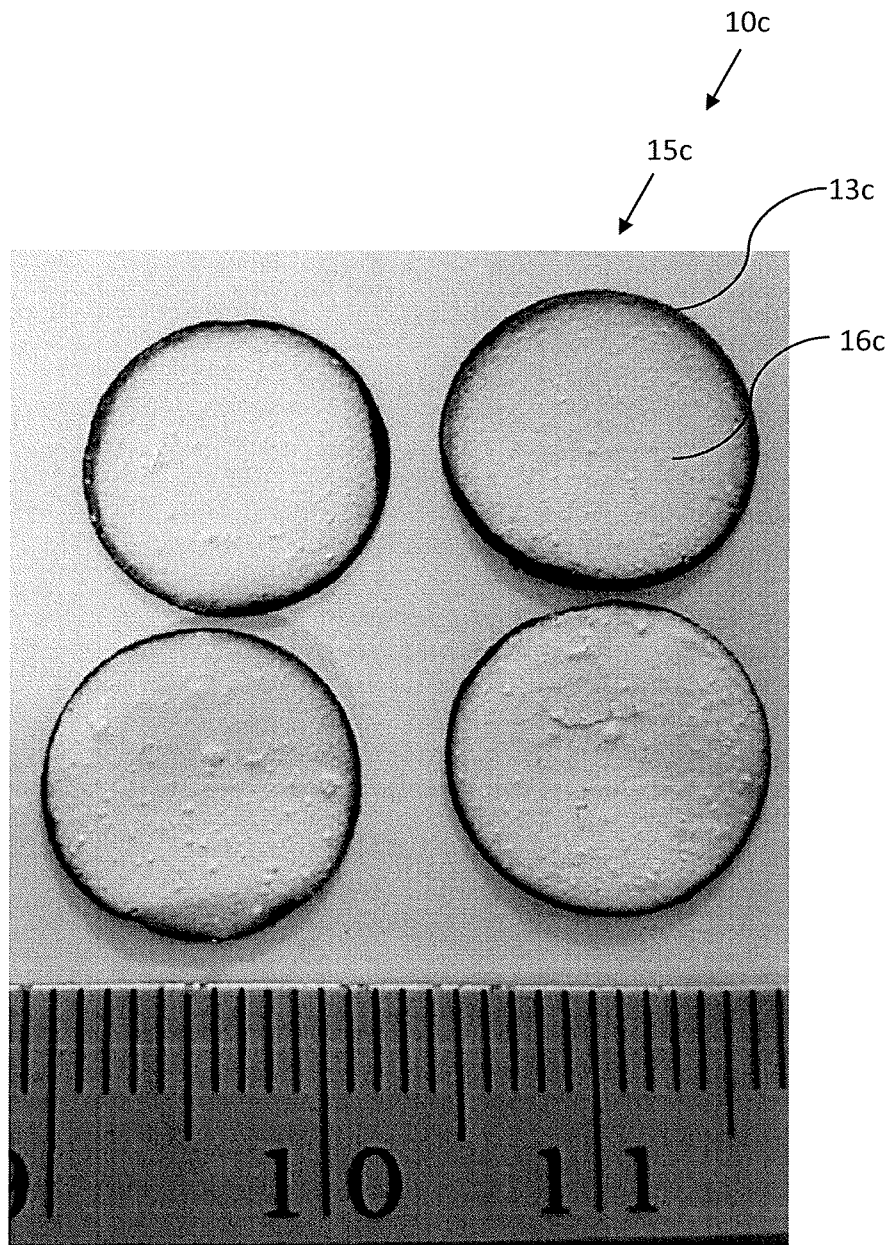
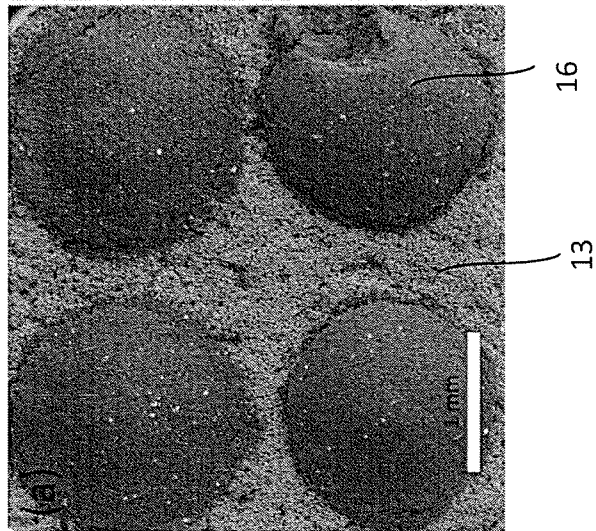
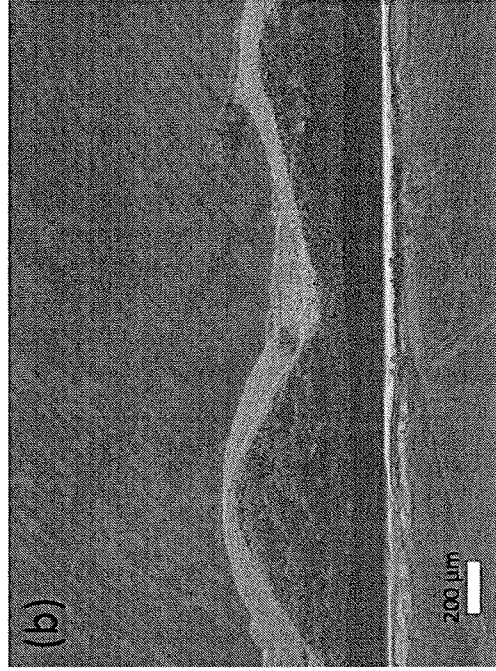


FIG. 10

15
top view



side view



magnified side view

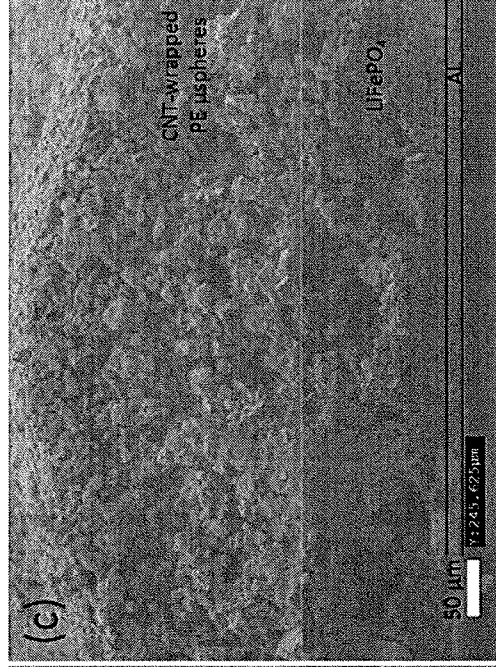


FIG. 11

FIG. 12

FIG. 13

15a
top view

magnified side view

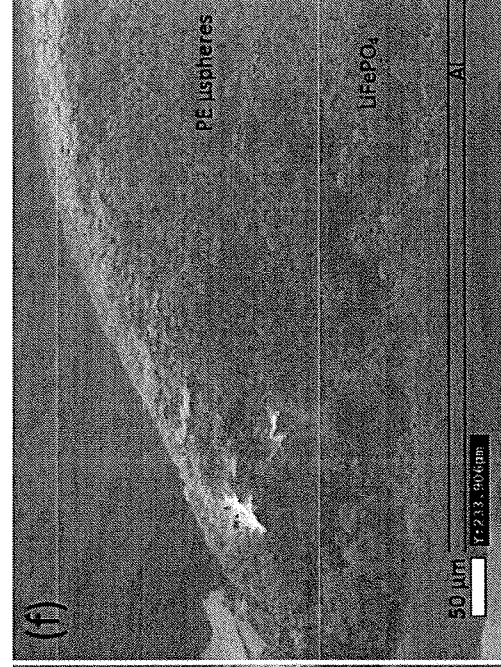
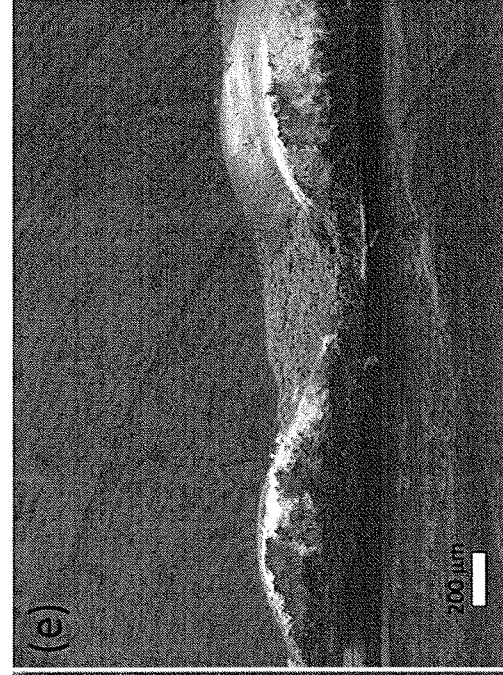
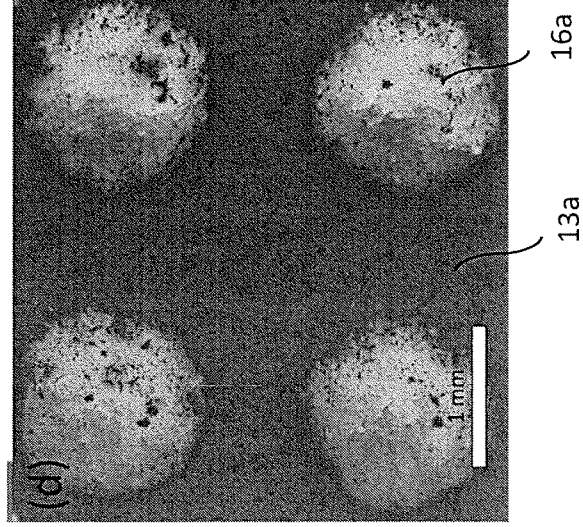


FIG. 14

FIG. 15

FIG. 16

top view

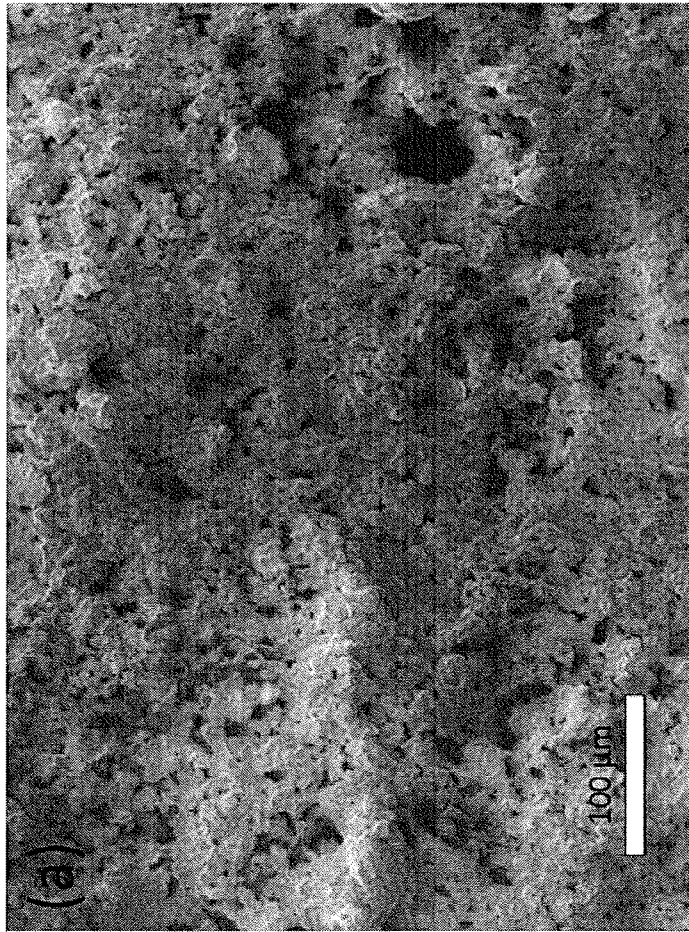


FIG. 17

side view

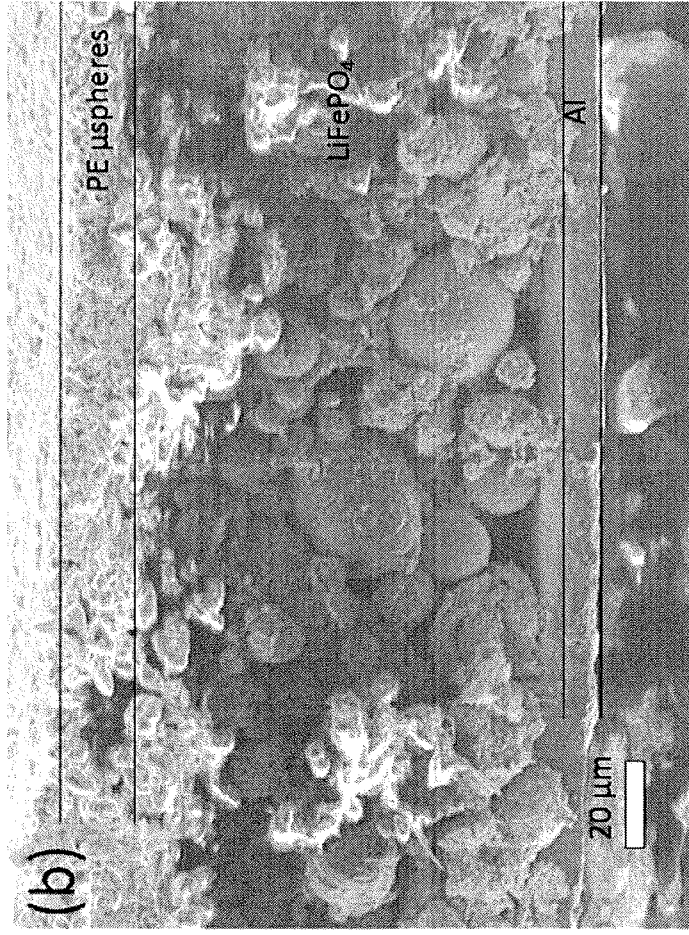
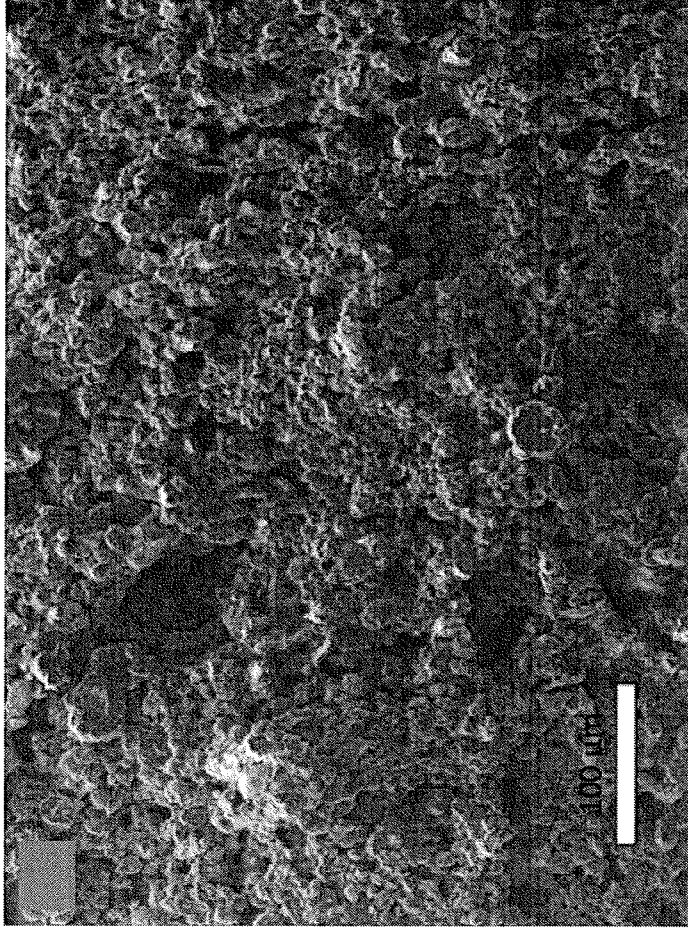


FIG. 18

top view



side view

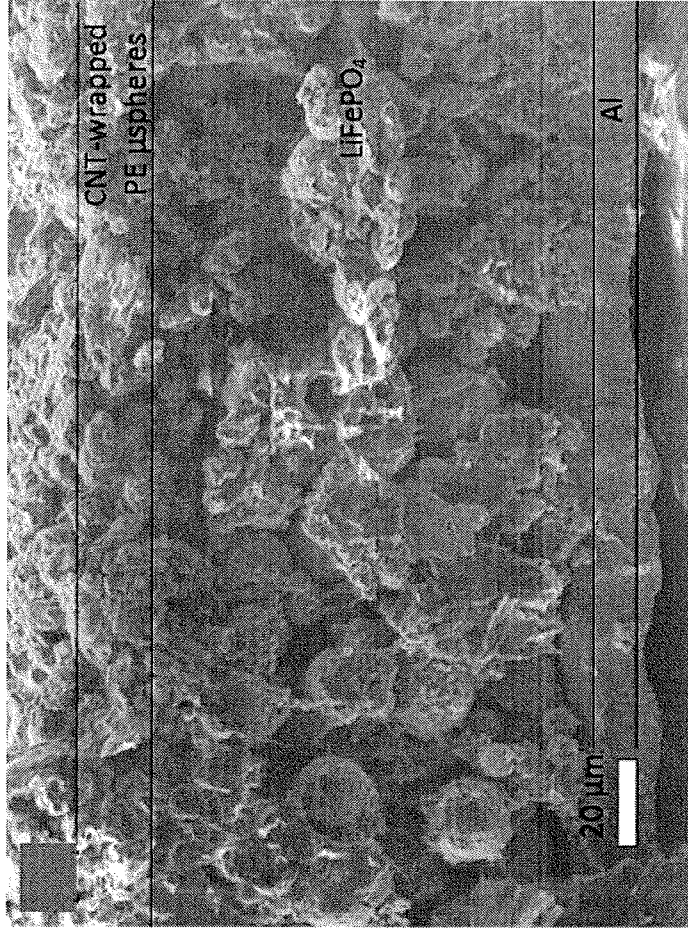


FIG. 19

FIG. 20

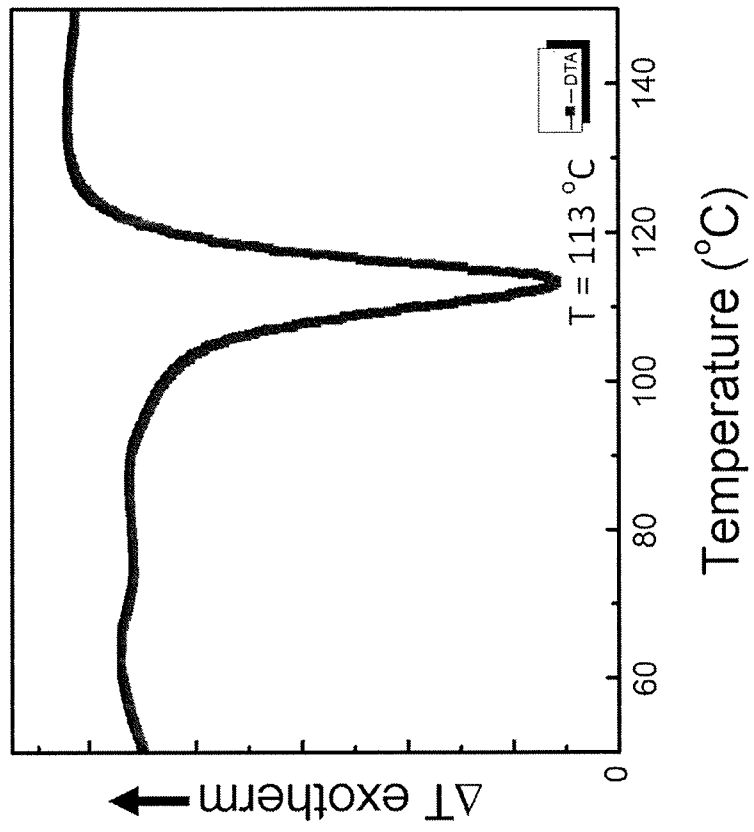


FIG. 21

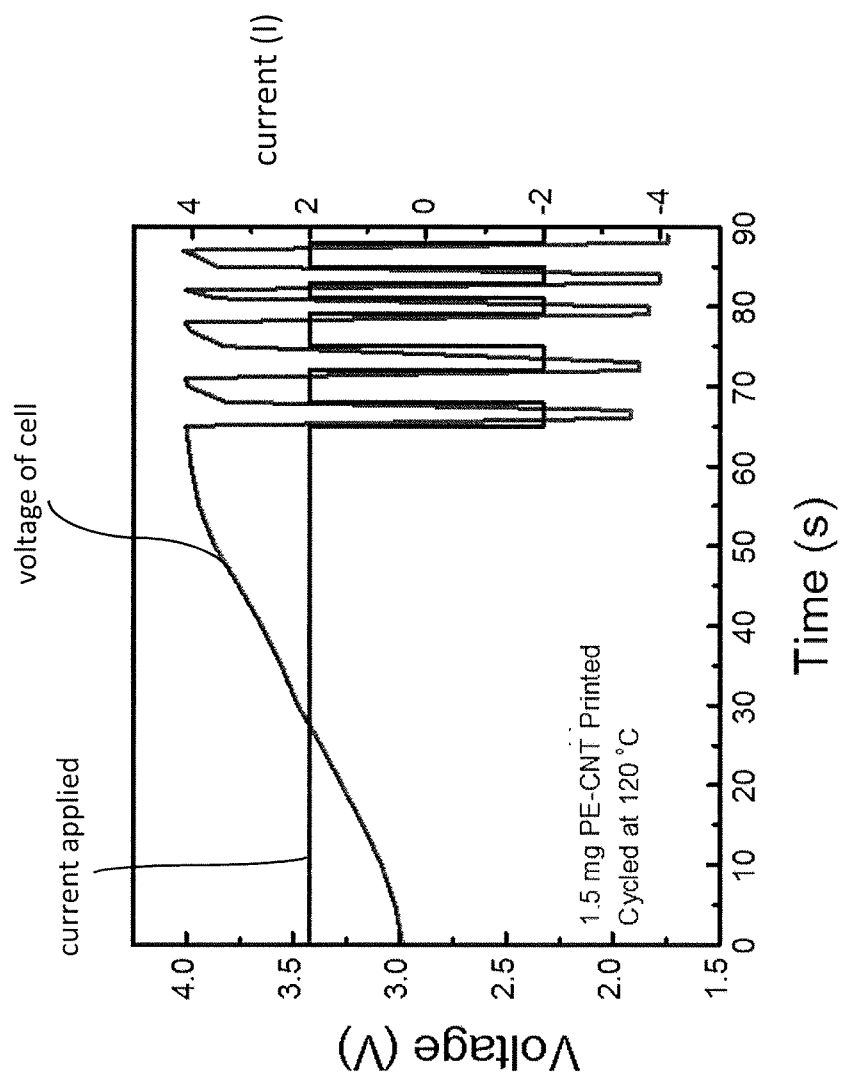


FIG. 22

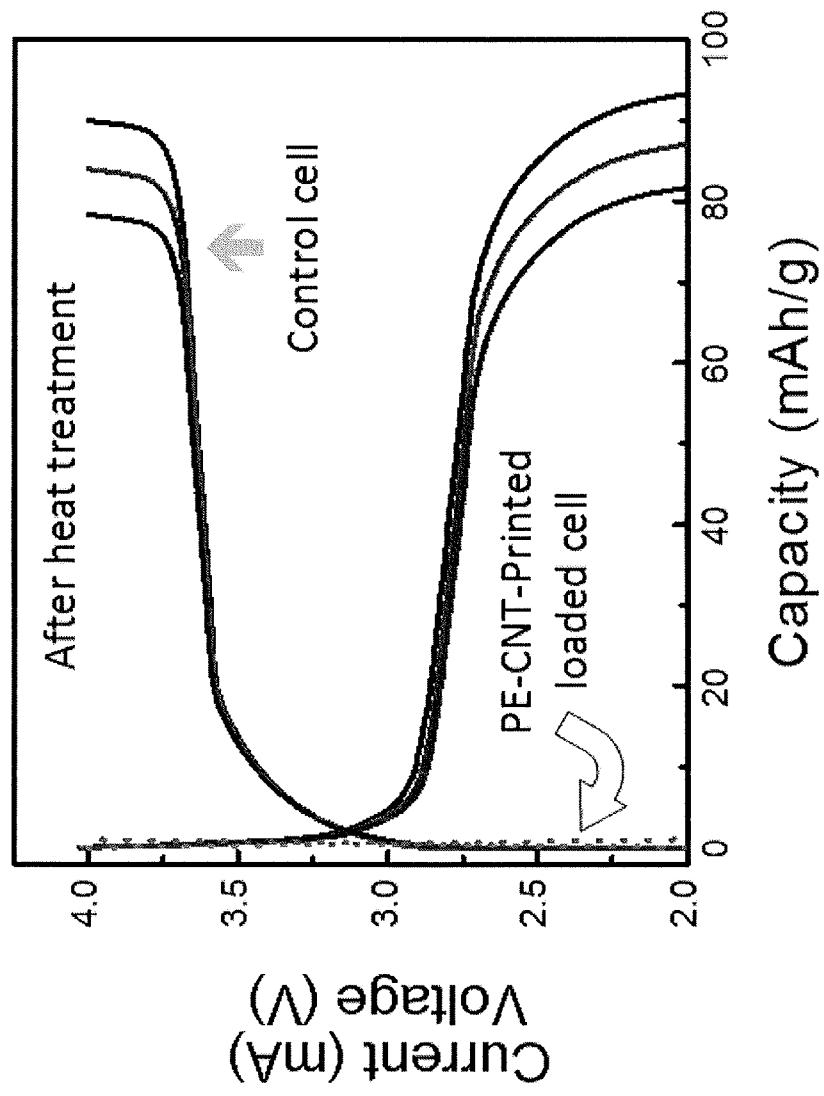


FIG. 23

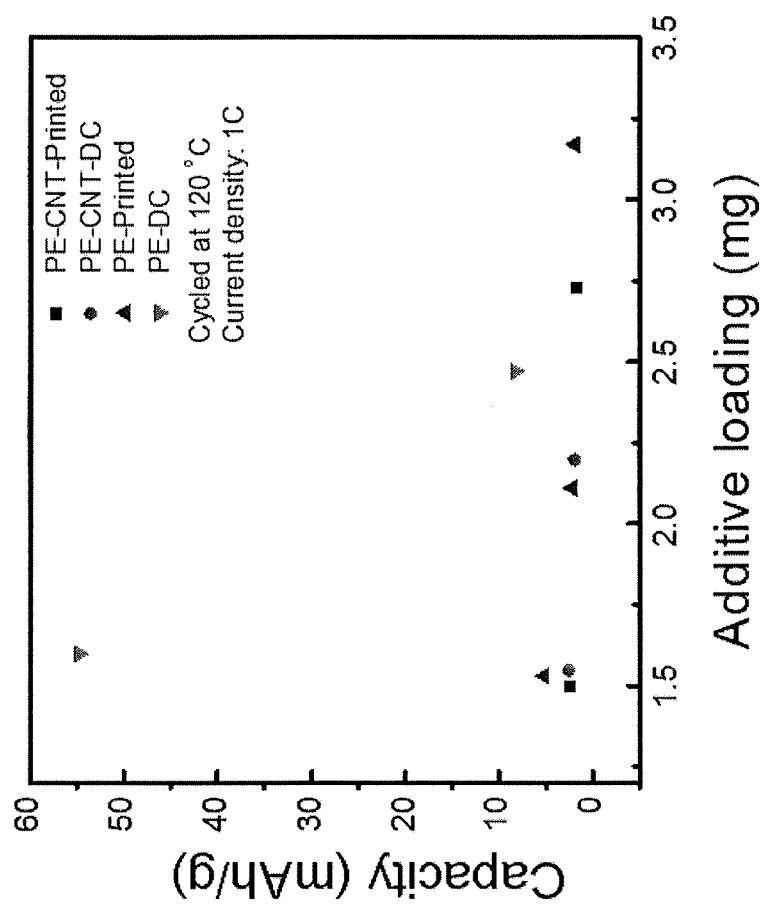


FIG. 24

top view

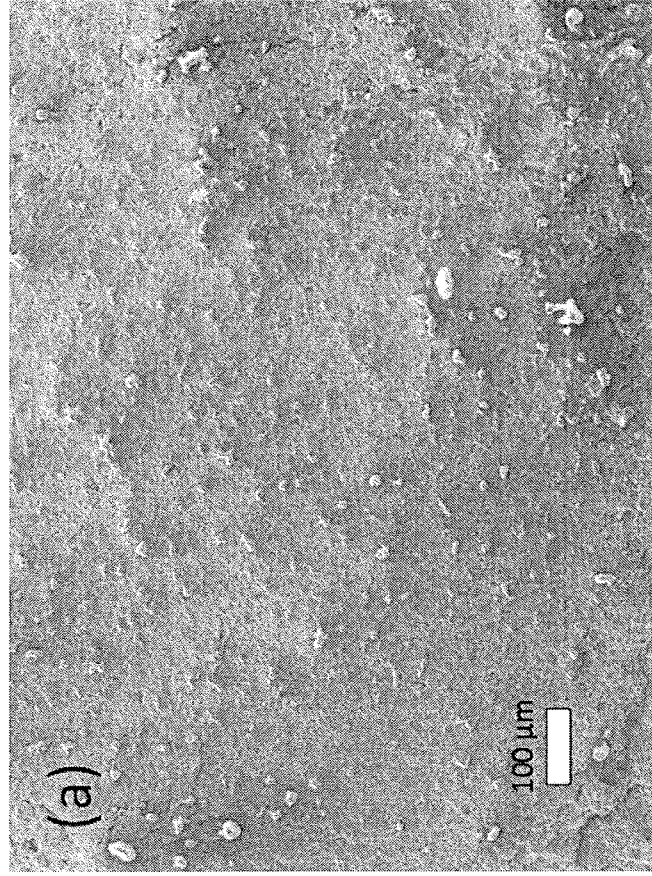


FIG. 25

side view



FIG. 26

top view

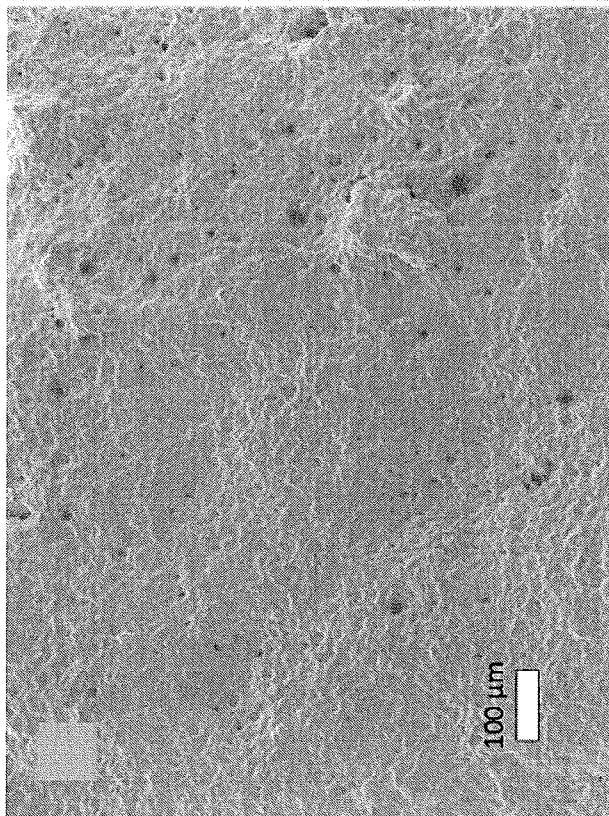


FIG. 27

side view

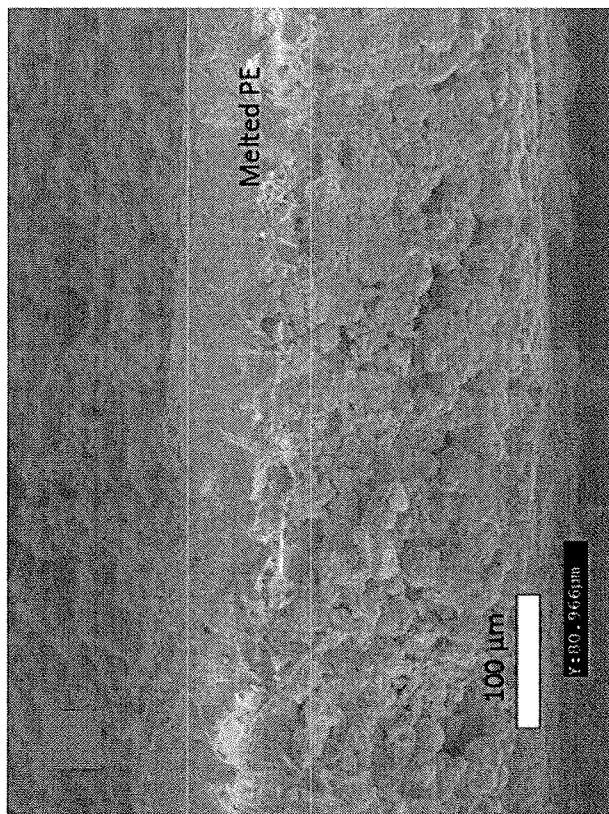


FIG. 28

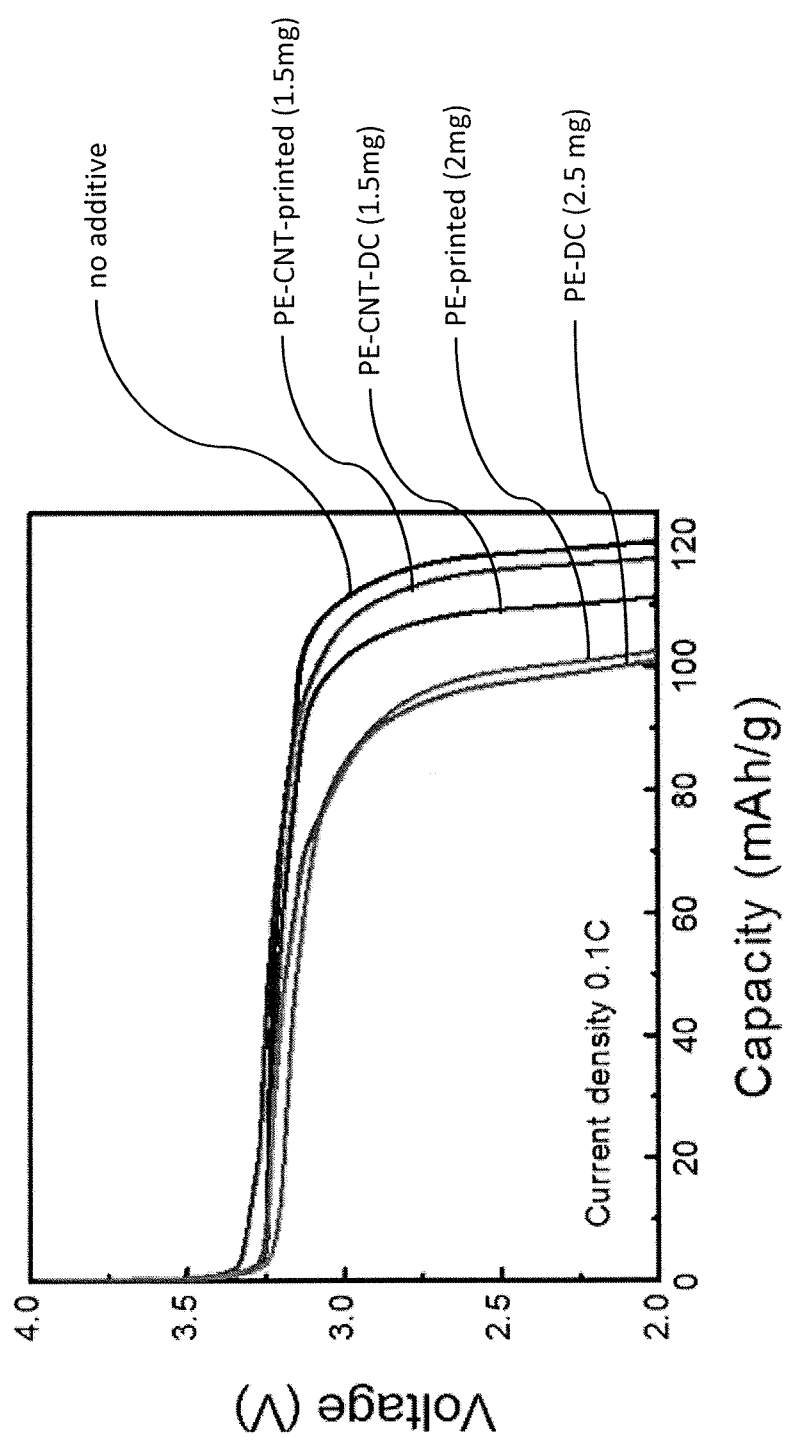


FIG. 29

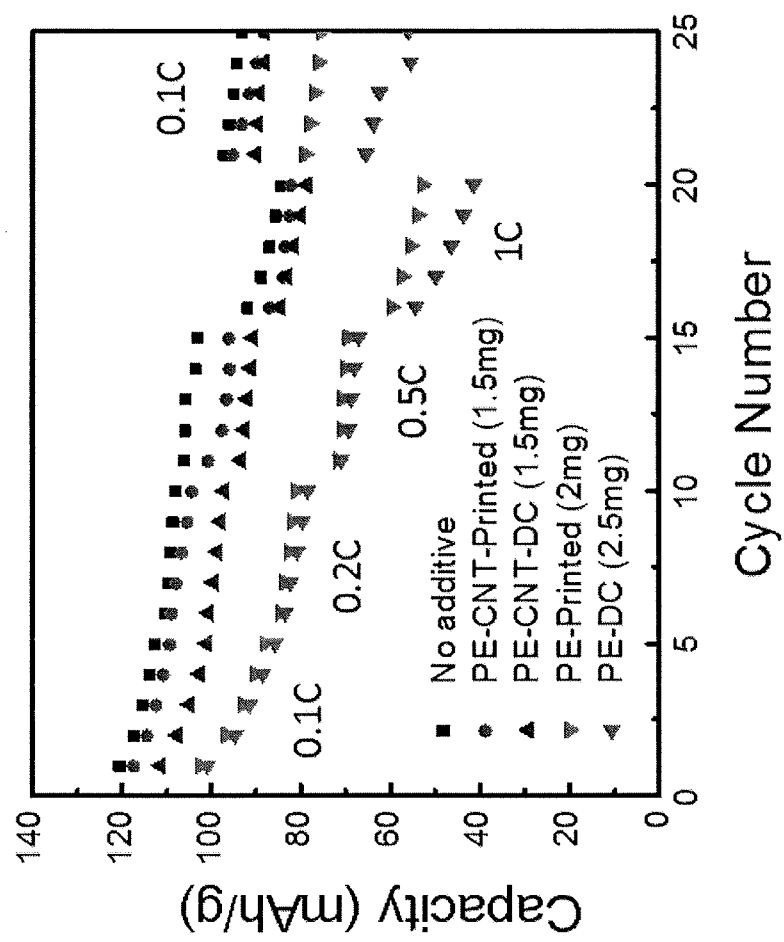


FIG. 30

shutdown time in relation to type of shutdown additives and their loading amount

electrode	loading amount (mg/cm ²)	shutdown time (s)
PE-CNT printed electrode	1.5	65
	2.7	45
PE-CNT DC electrode	1.5	75
	2.2	50
PE printed electrode	1.5	121
	2.1	55
PE DC electrode	1.6	1470
	2.5	371

FIG. 31

electrode electrochemical impedance at 1Hz at different temperatures

electrode	loading amount (mg/cm ²)	impedance (ohm) at 1 Hz	
		25 °C	120 °C
electrode with no additive	0	87	203
PE-CNT printed electrode	1.5	102	1285
PE-CNT DC electrode	1.5	113	1245
PE printed electrode	2.1	132	1450
PE DC electrode	2.5	144	1574

FIG. 32