

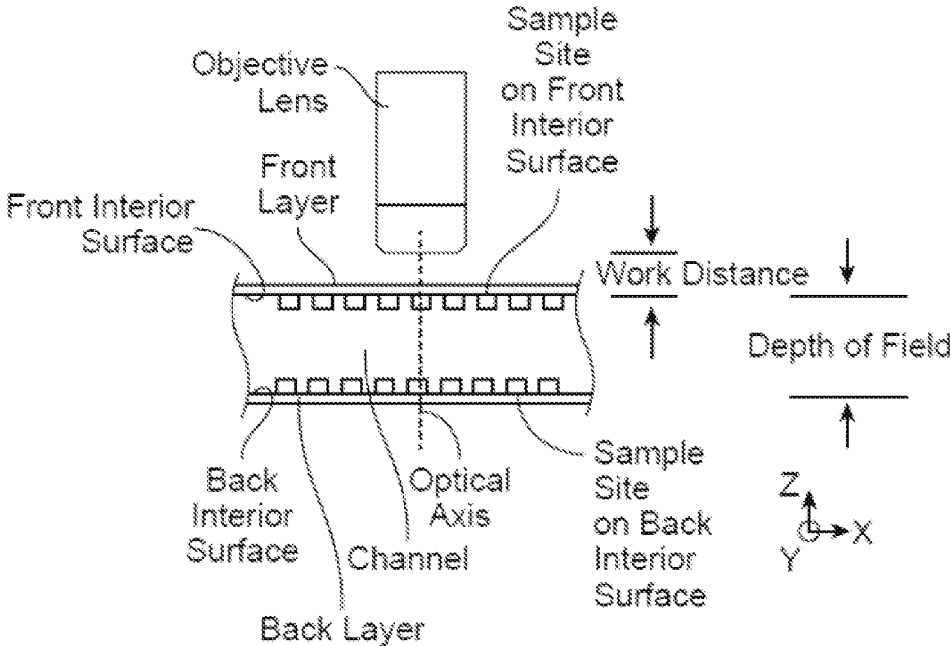


FIG. 1A

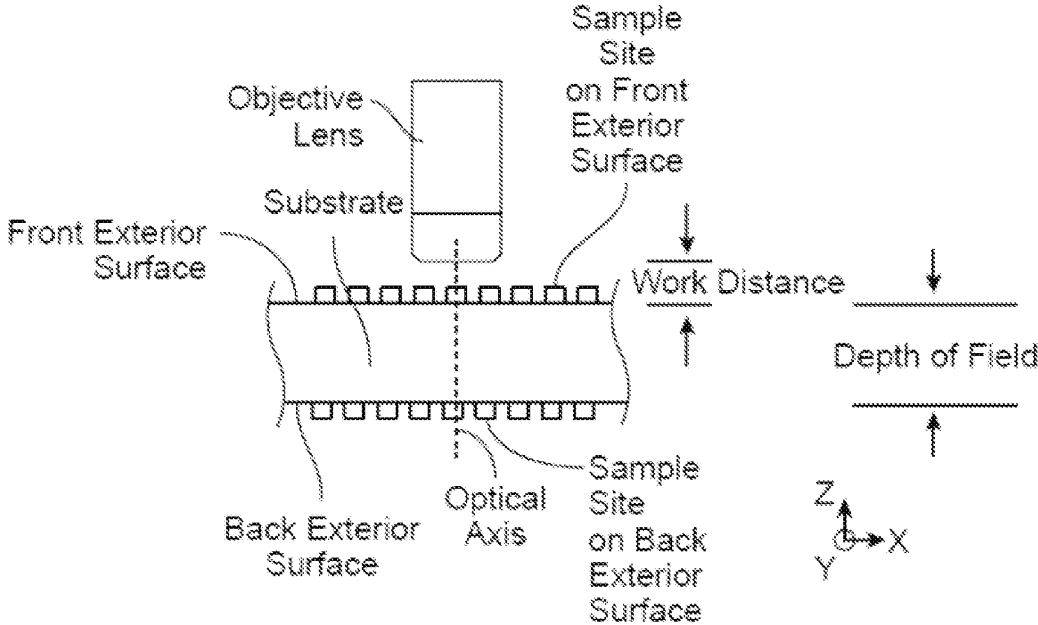


FIG. 1B

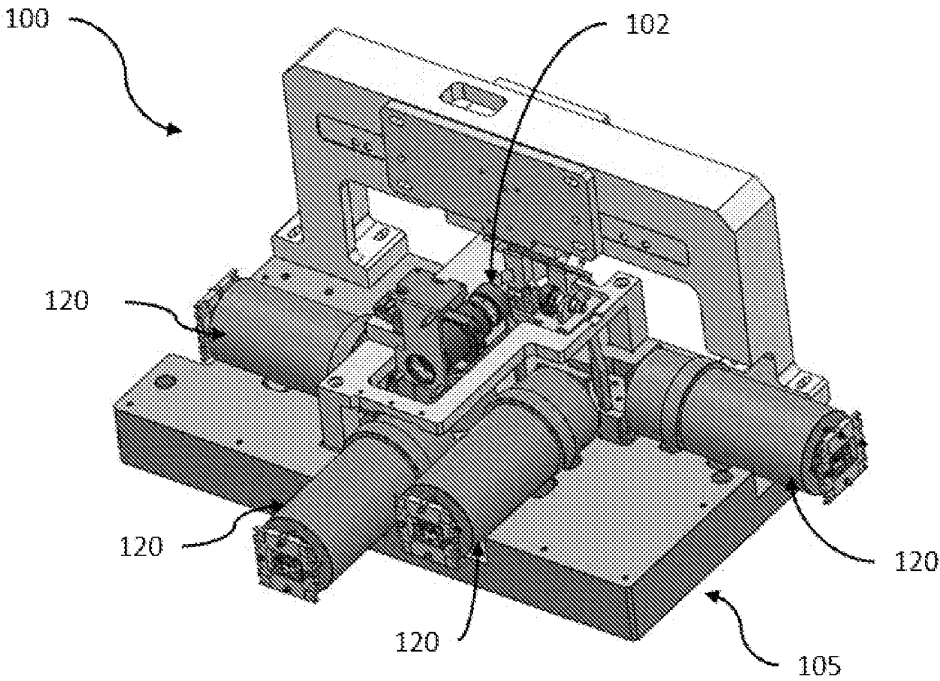


FIG. 2A

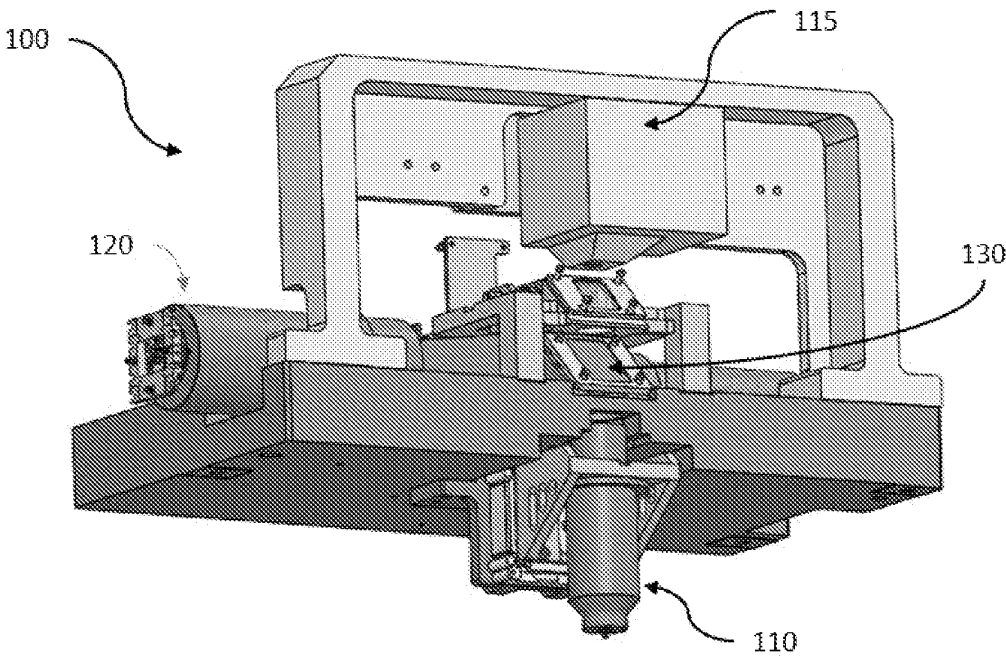


FIG. 2B

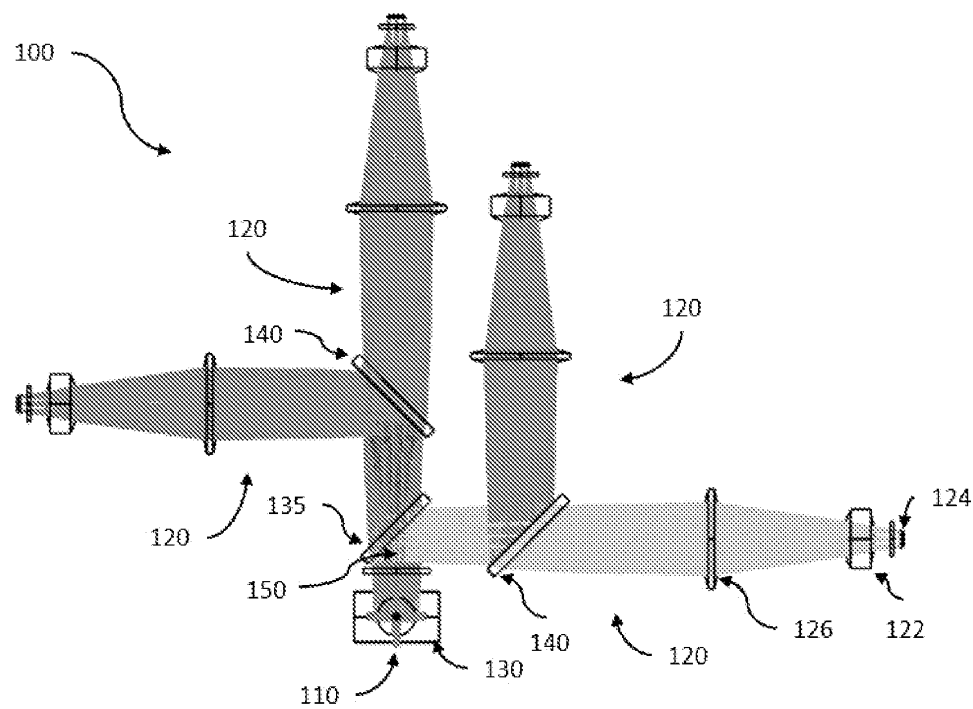


FIG. 3A

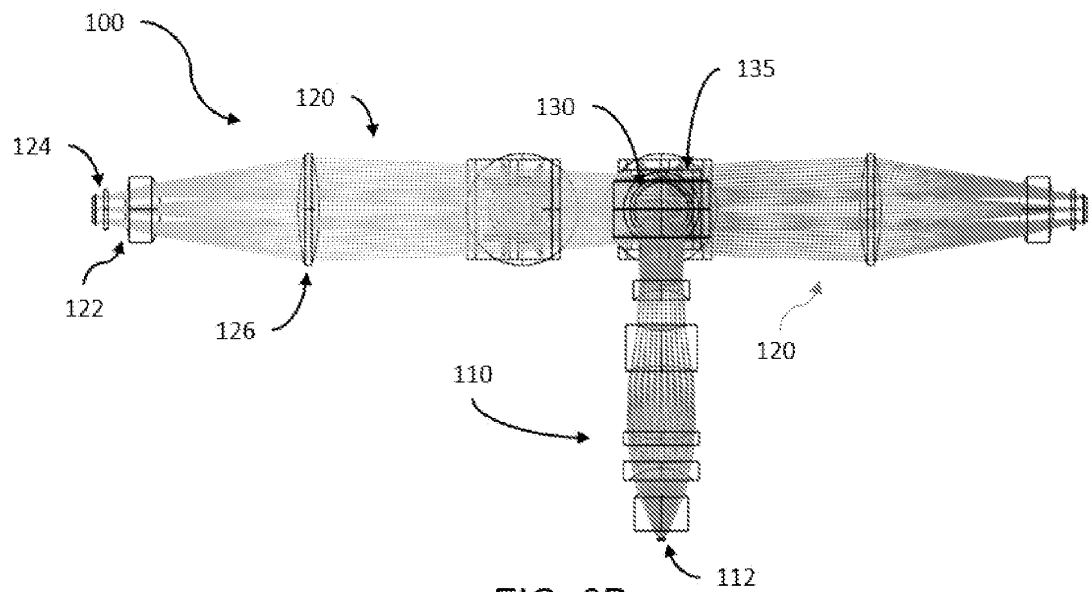


FIG. 3B

4/127

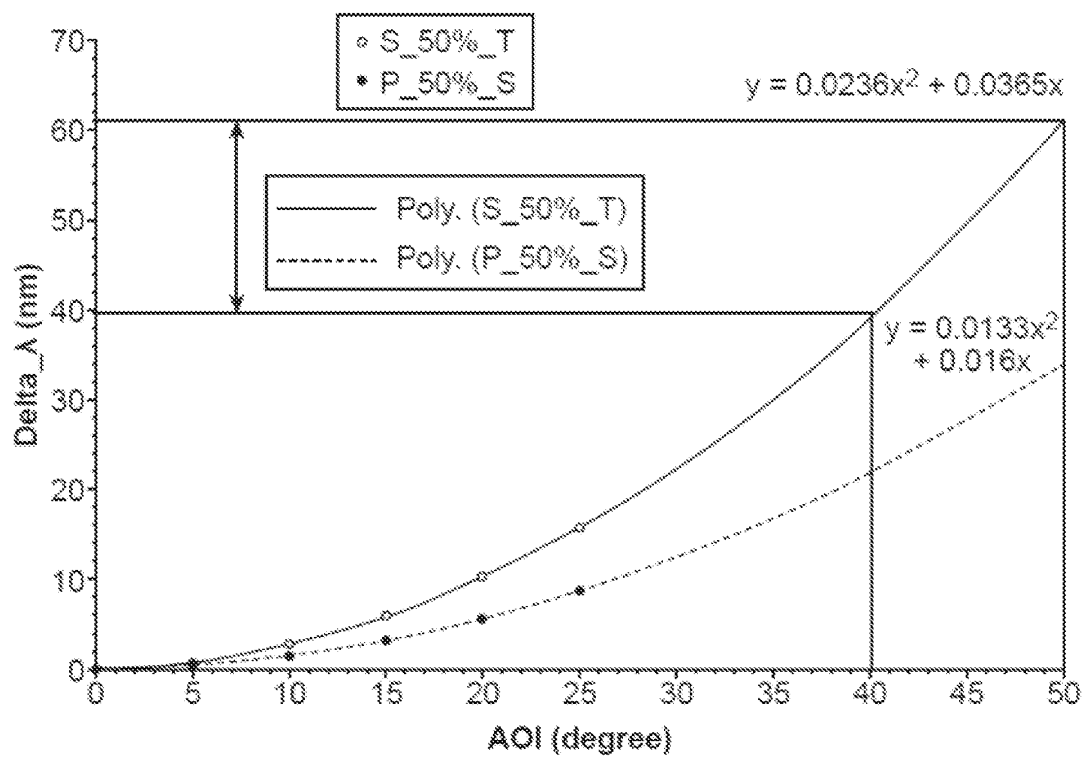


FIG. 4

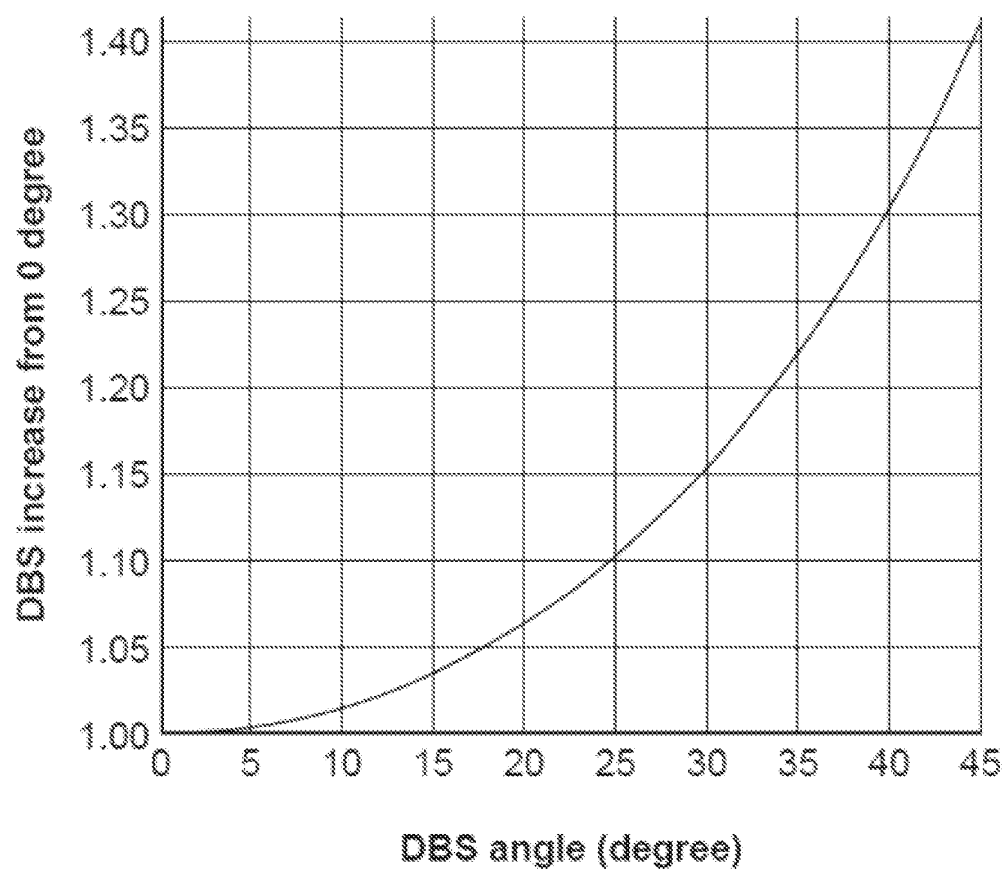
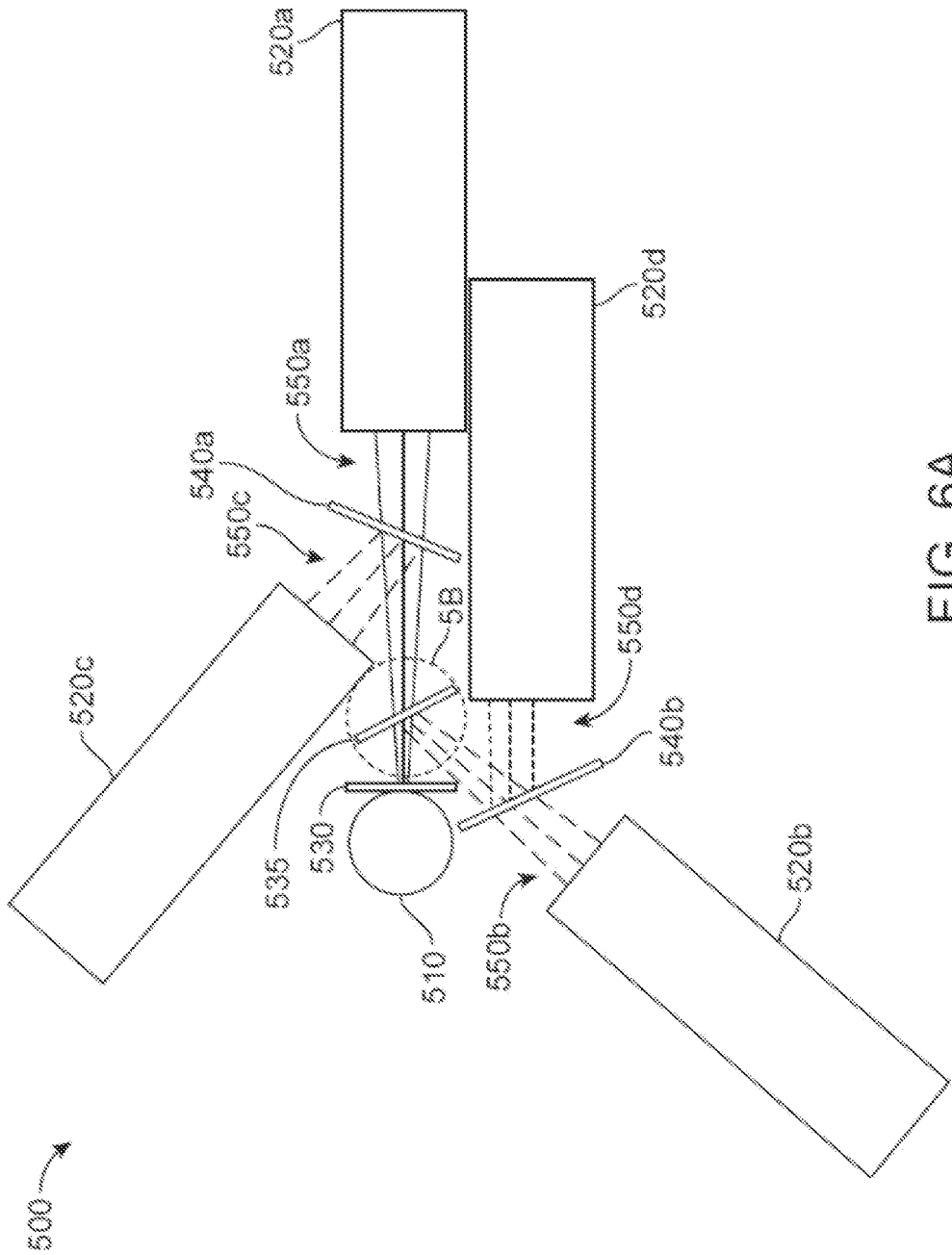


FIG. 5



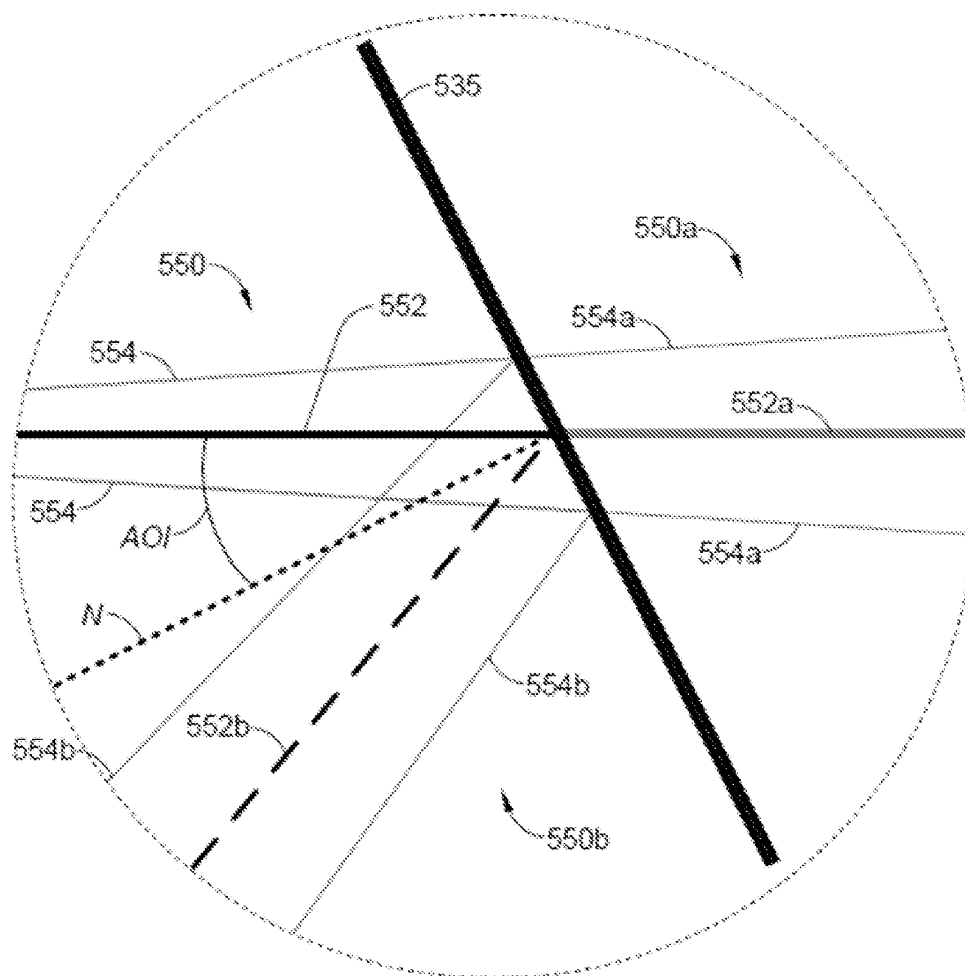


FIG. 6B

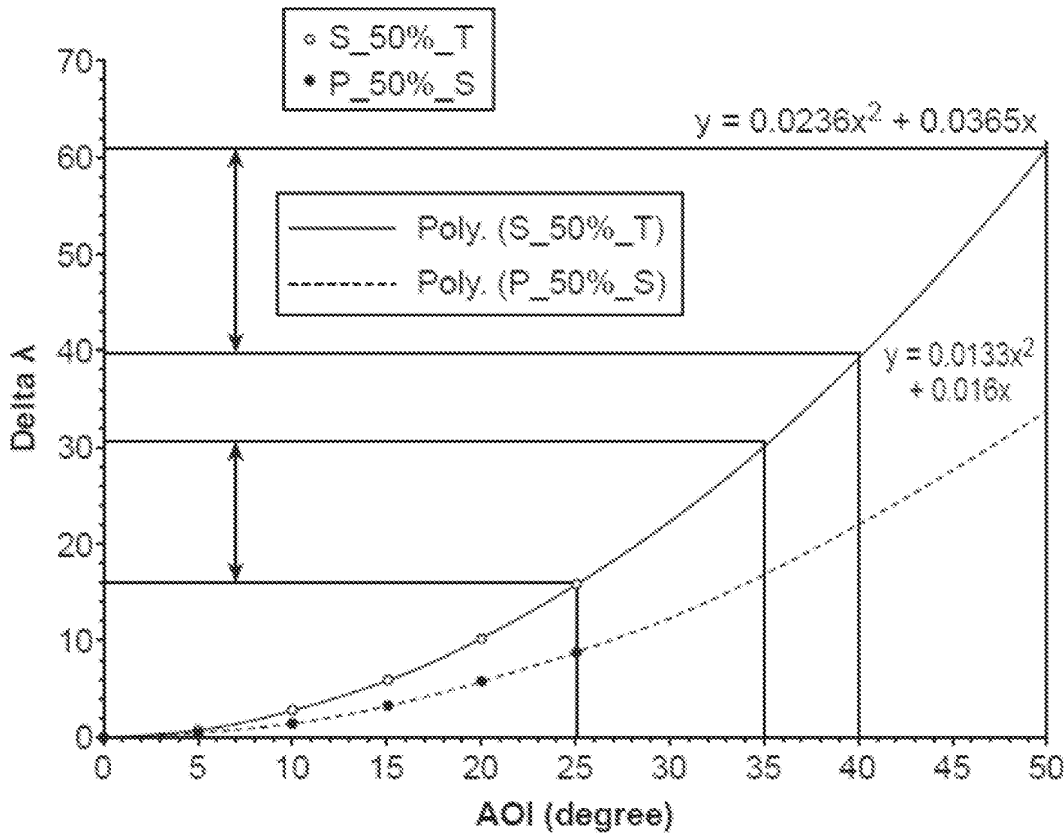


FIG. 7

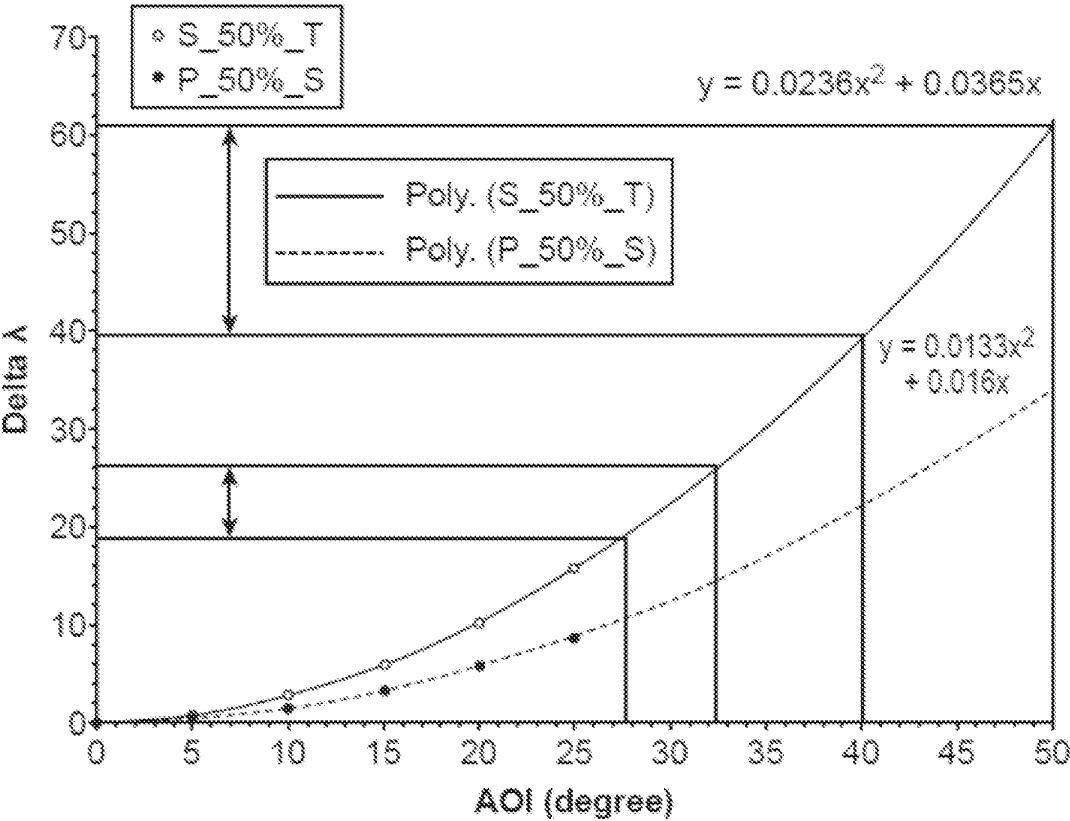


FIG. 8

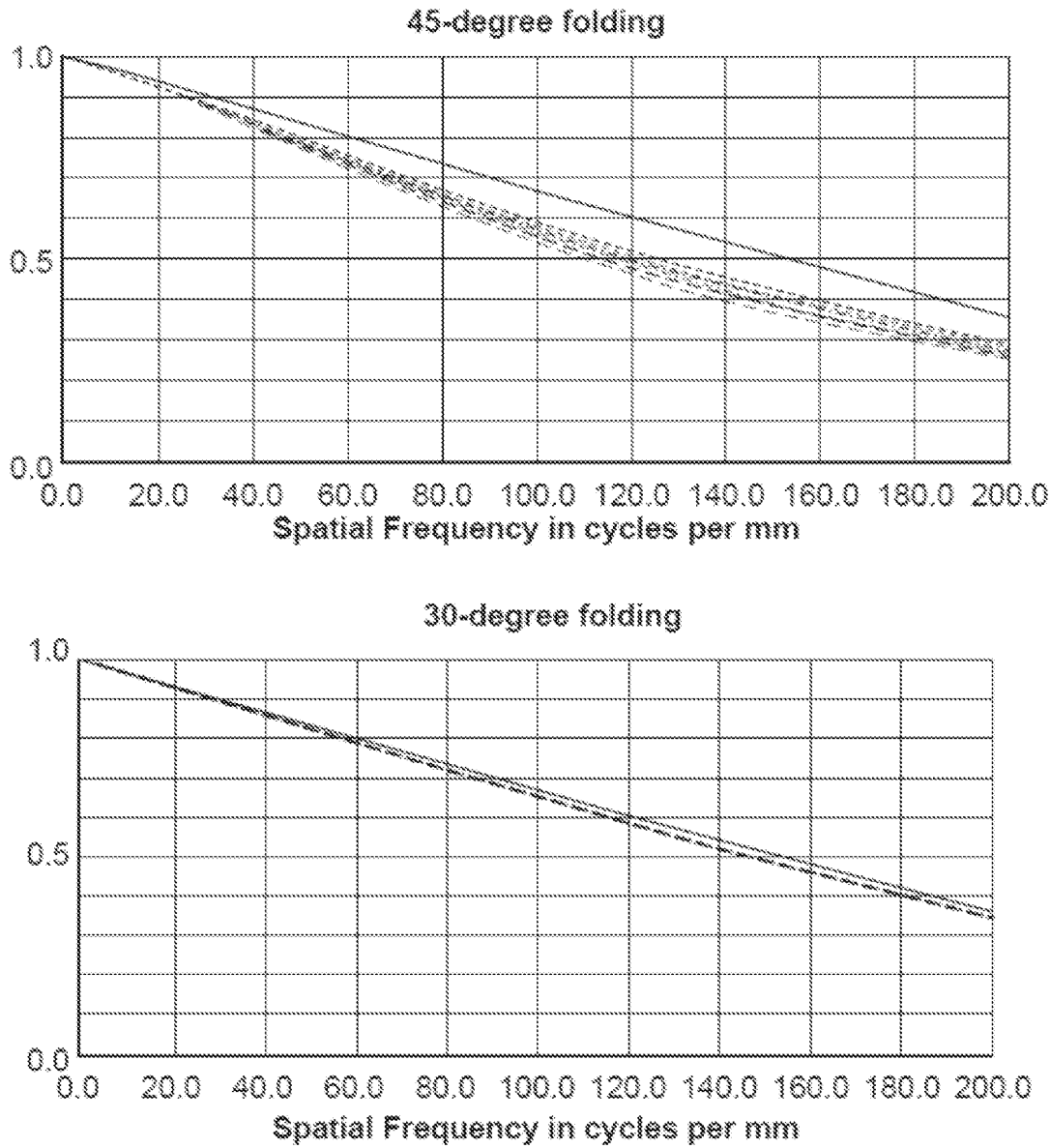


FIG. 9A

11/127

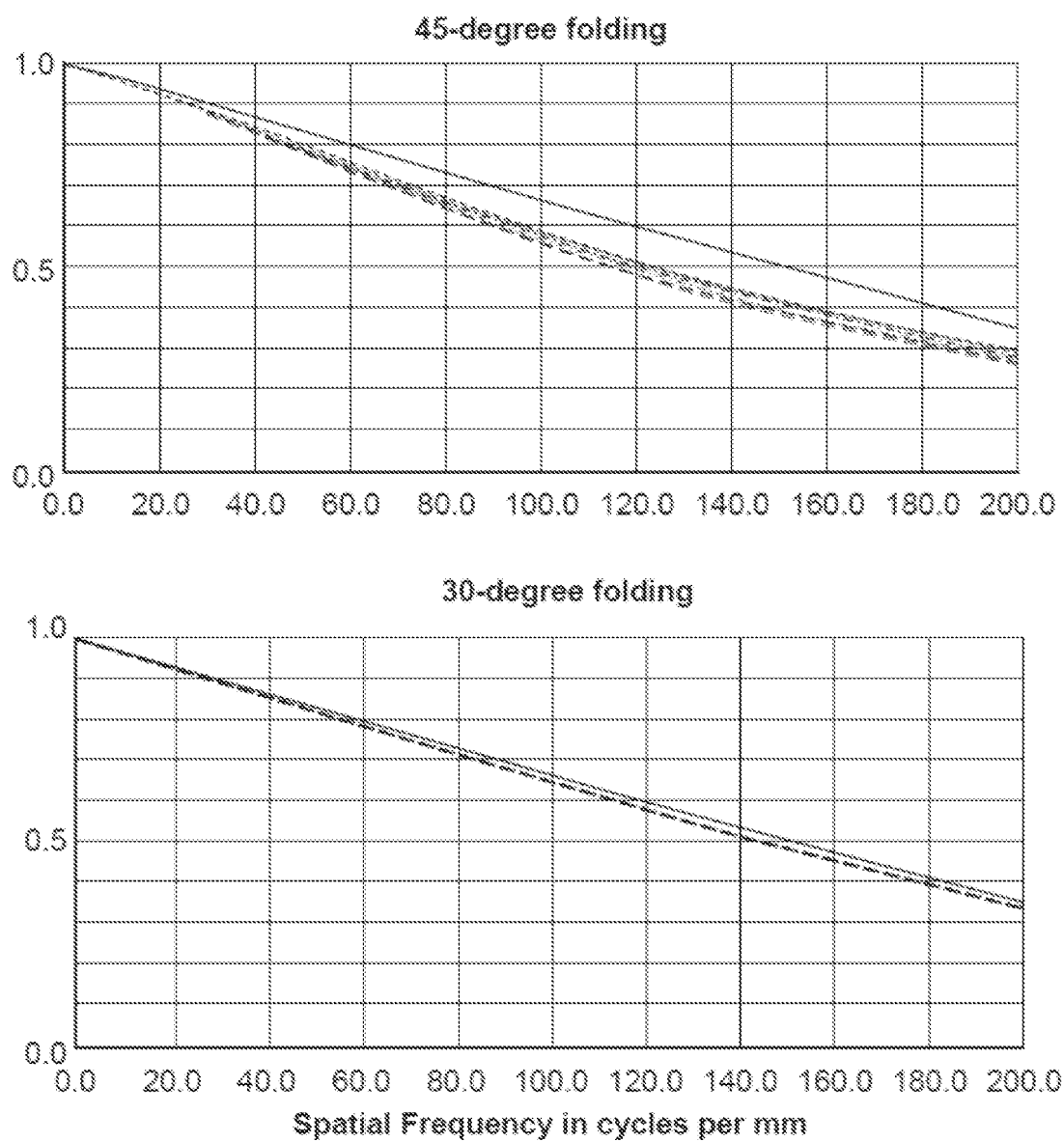


FIG. 9B

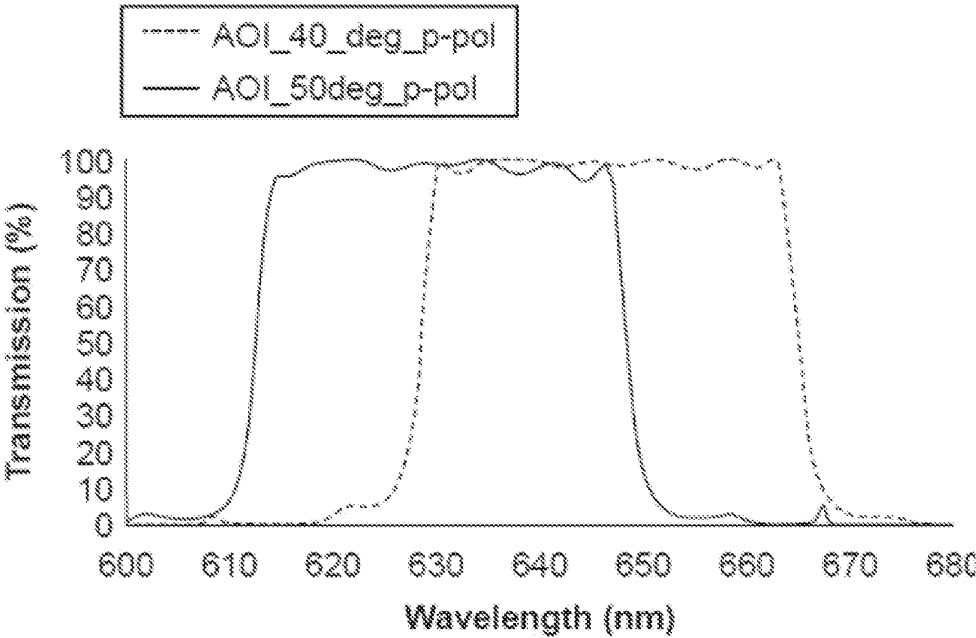


FIG. 10A

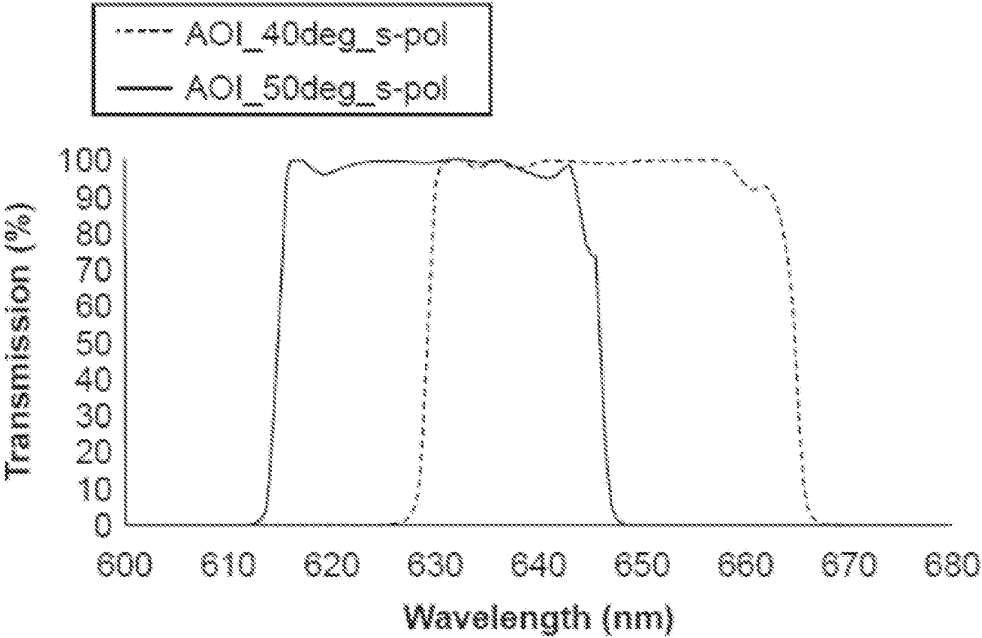


FIG. 10B

13/127

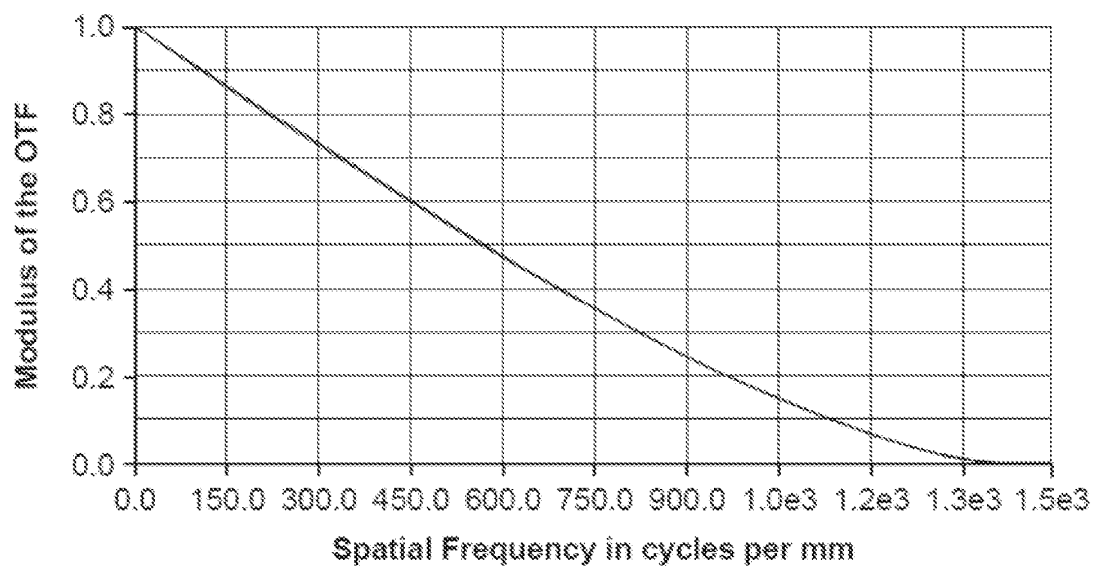


FIG. 11A

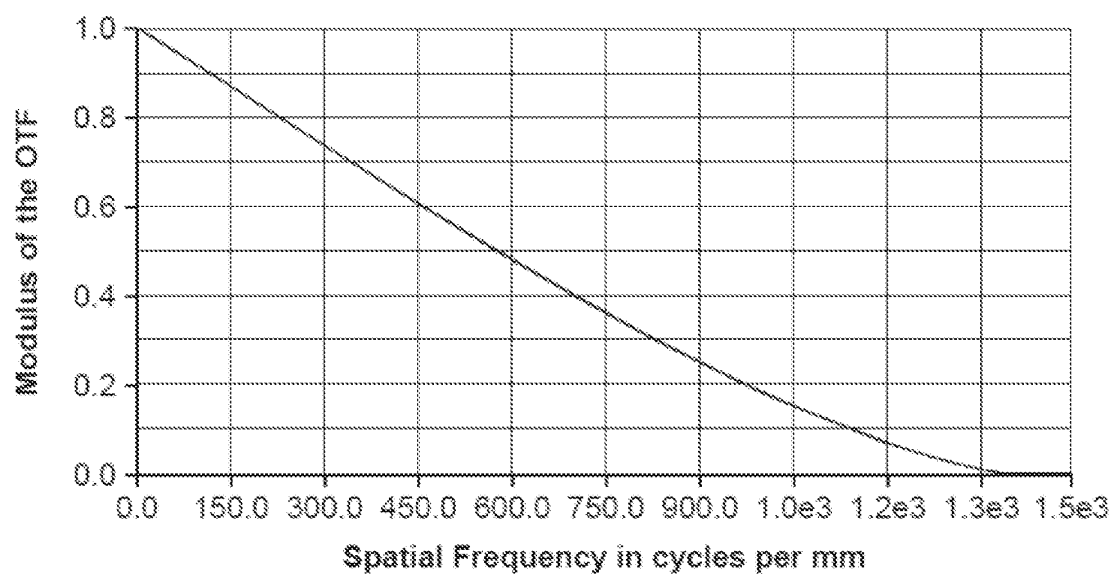


FIG. 11B

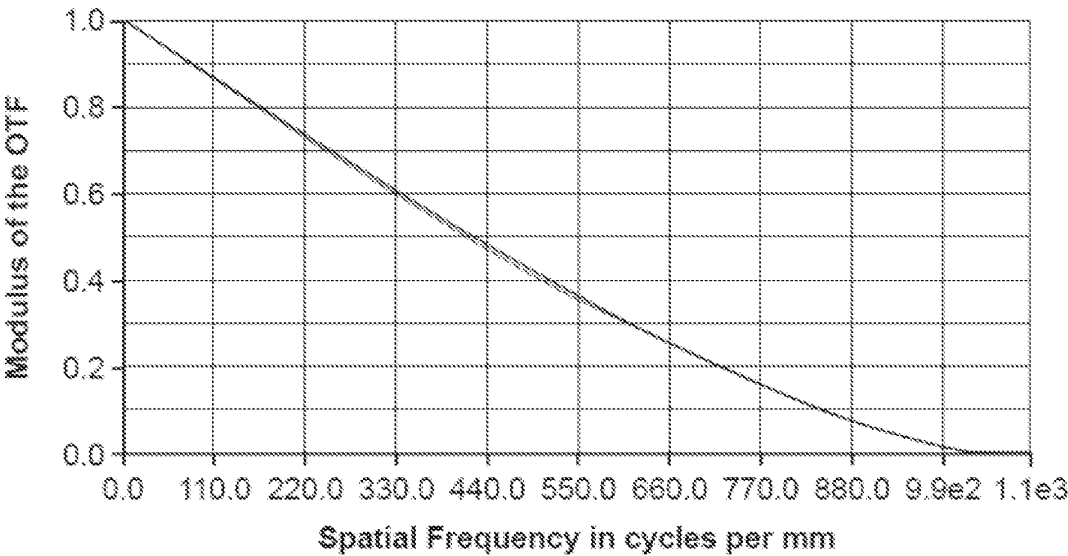


FIG. 12A

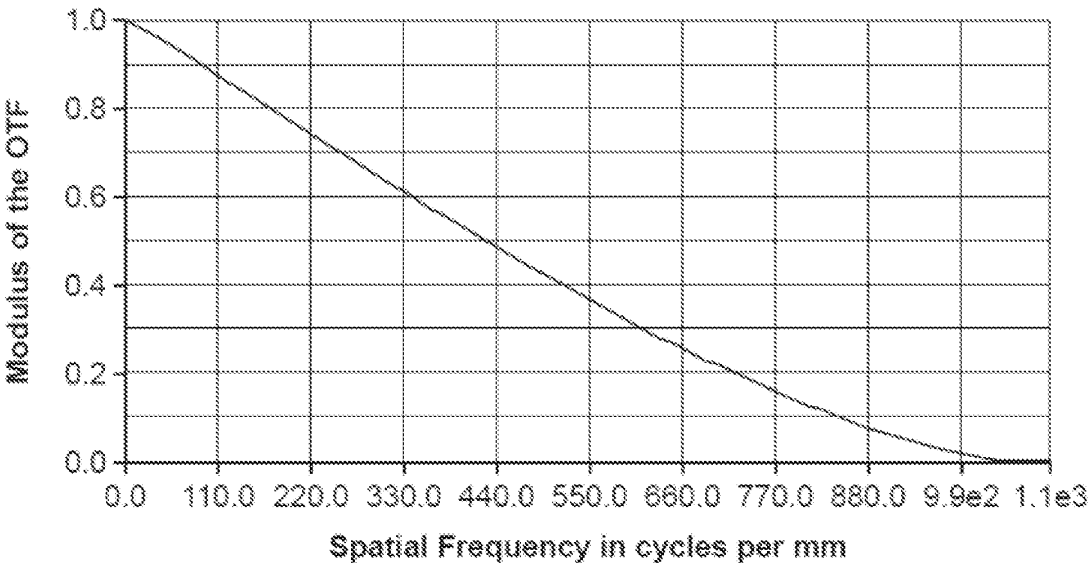


FIG. 12B

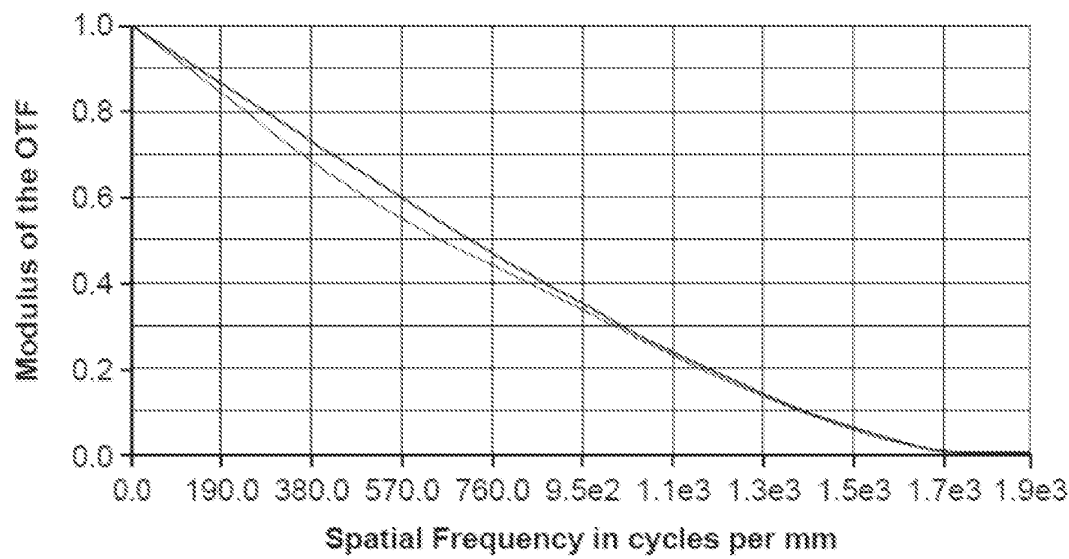


FIG. 13A

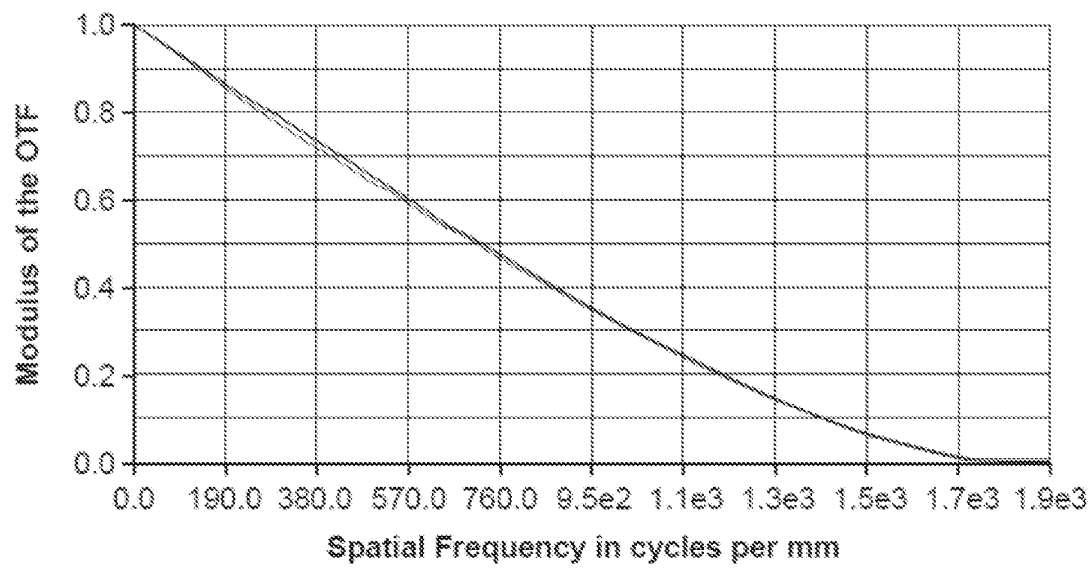


FIG. 13B

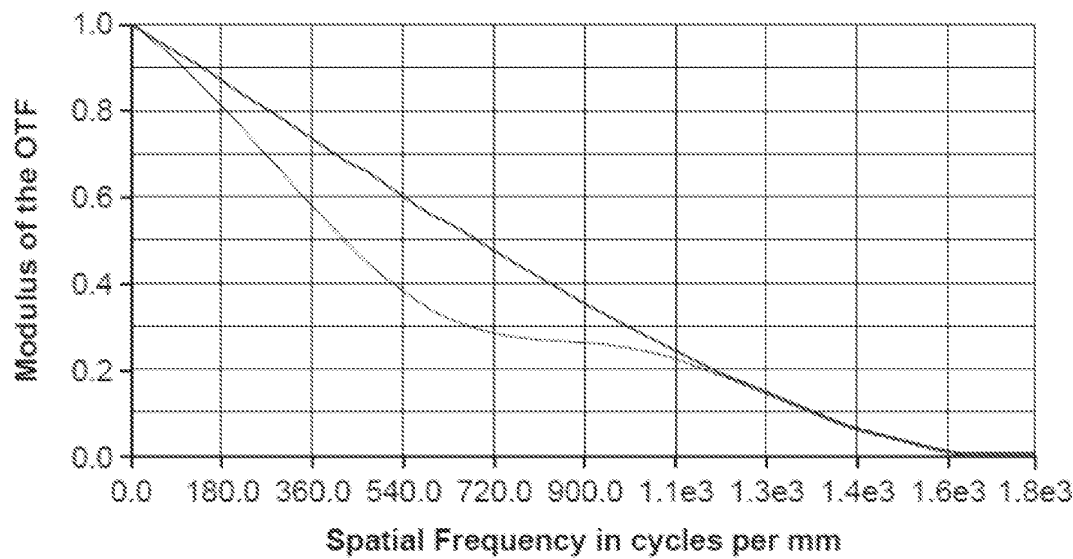


FIG. 14A

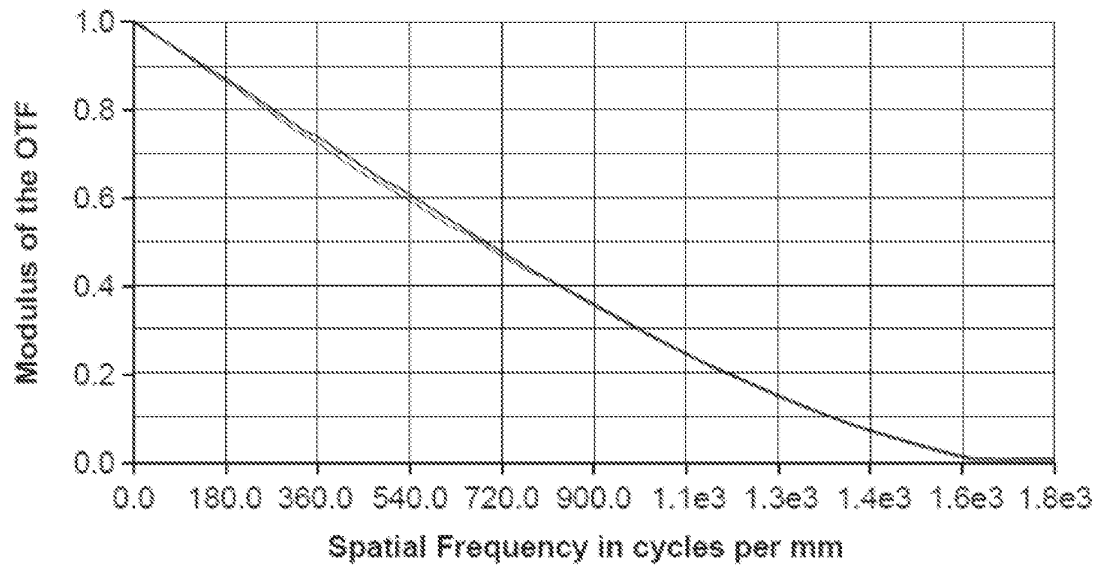


FIG. 14B

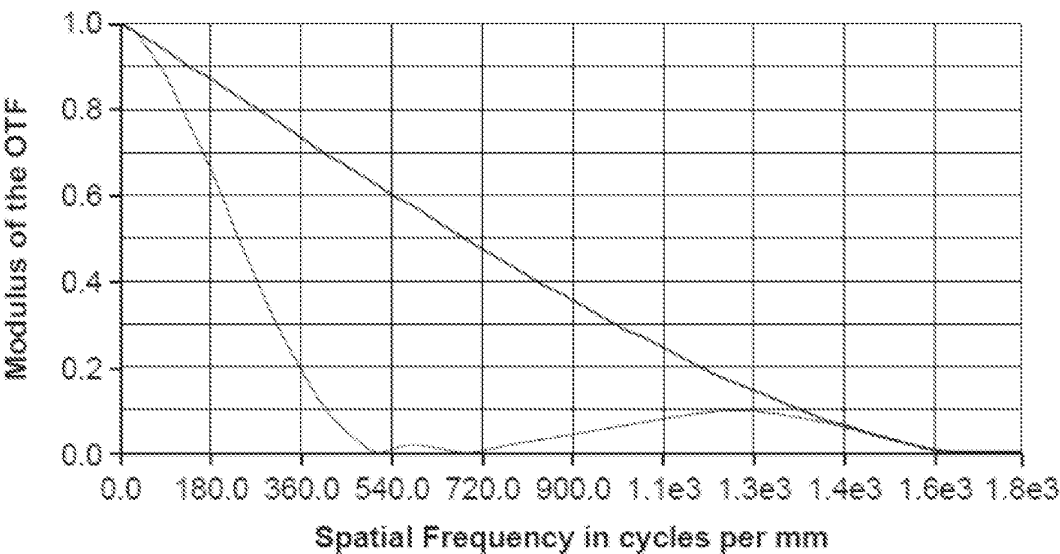


FIG. 15A

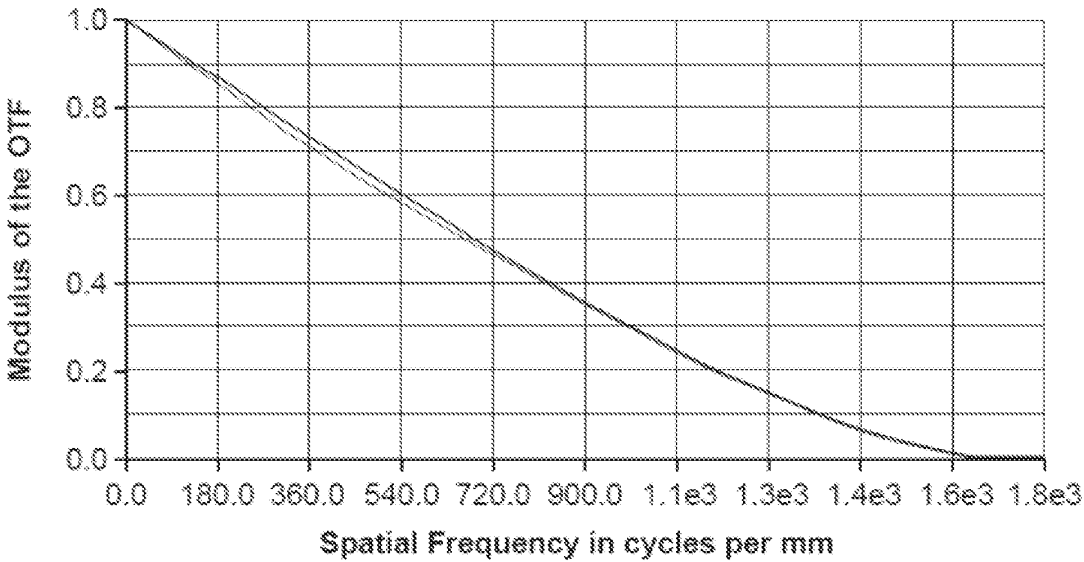


FIG. 15B

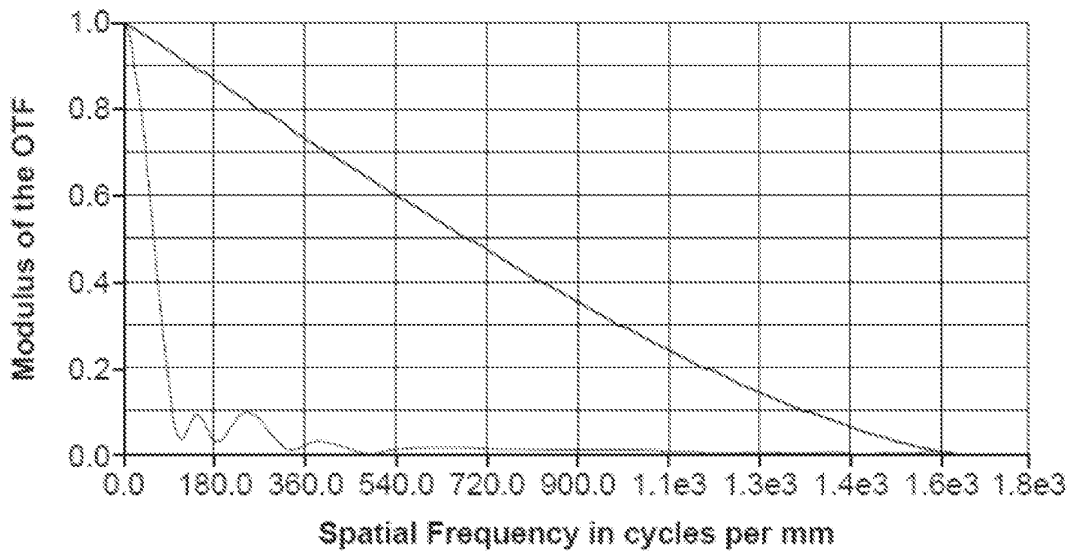


FIG. 16A

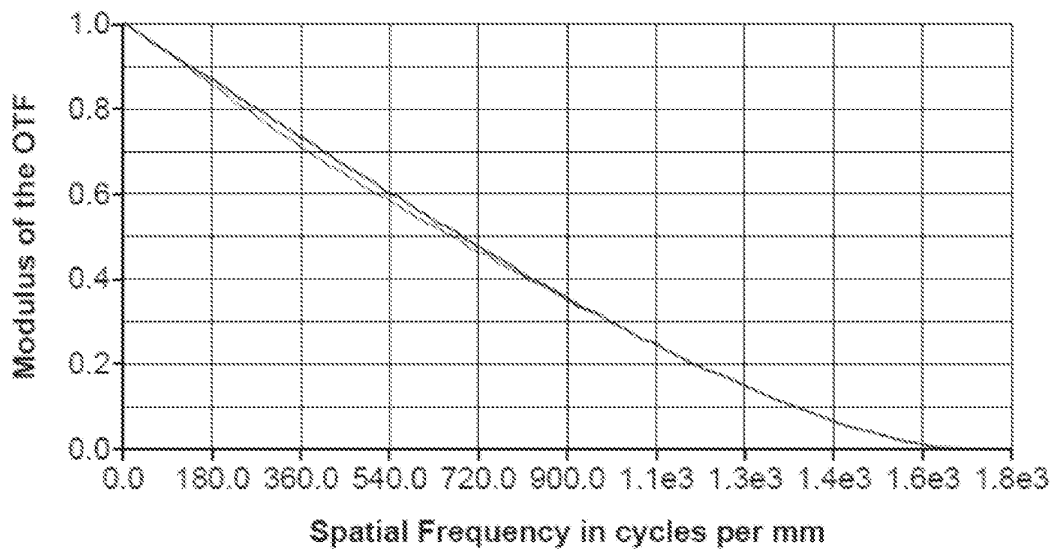


FIG. 16B

Strehl ratio change with thickness, field=0mm, EFL_objective=20mm, Mag=5

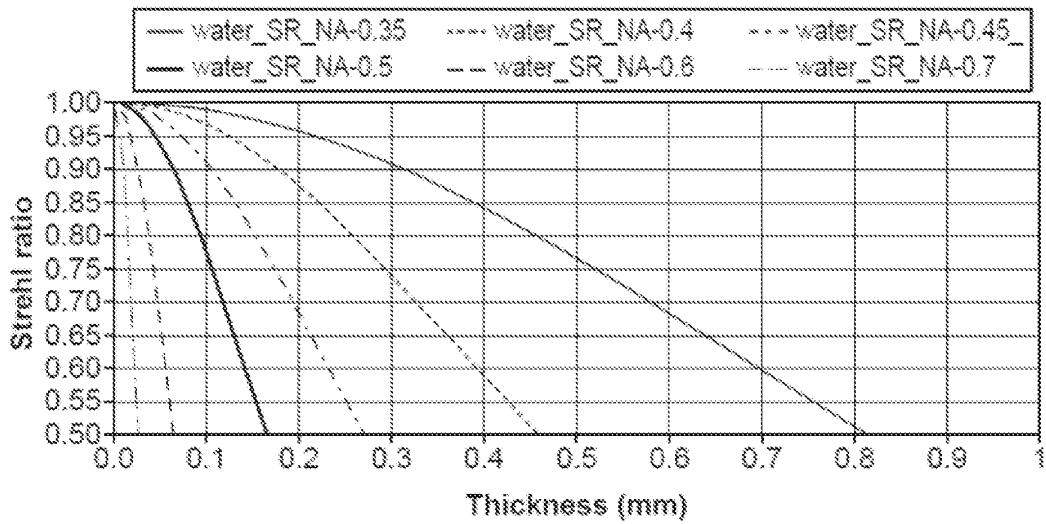


FIG. 17A

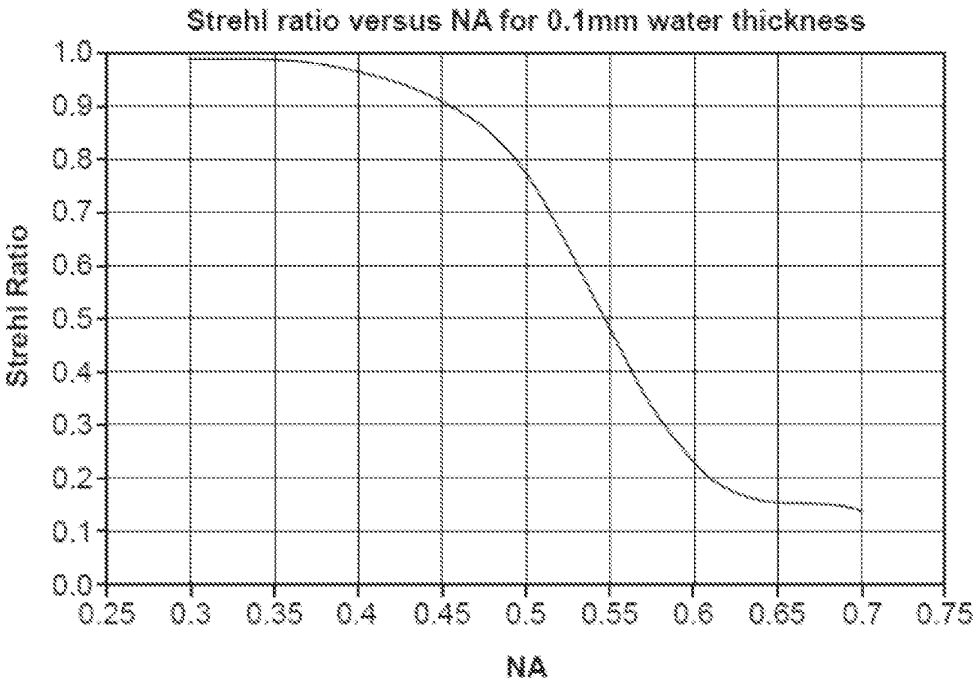


FIG. 17B

20/127

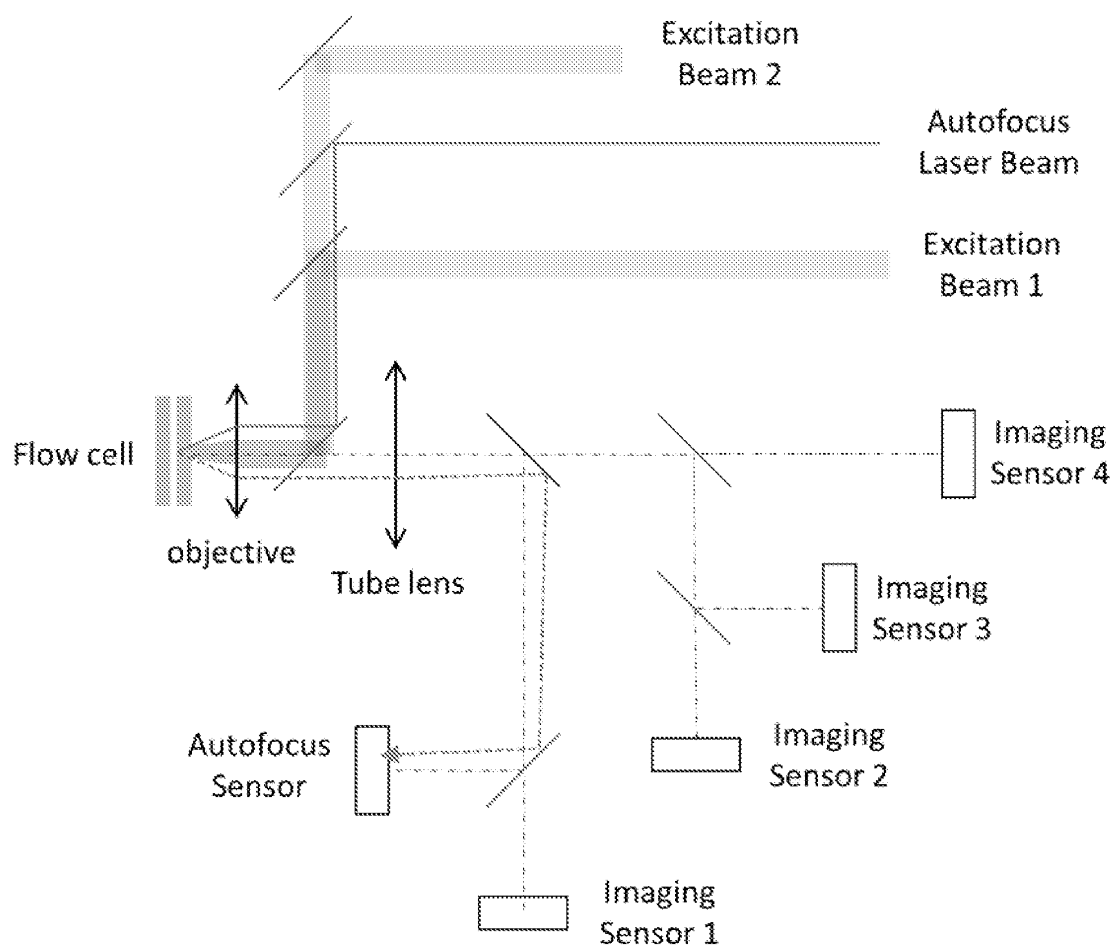


FIG. 18

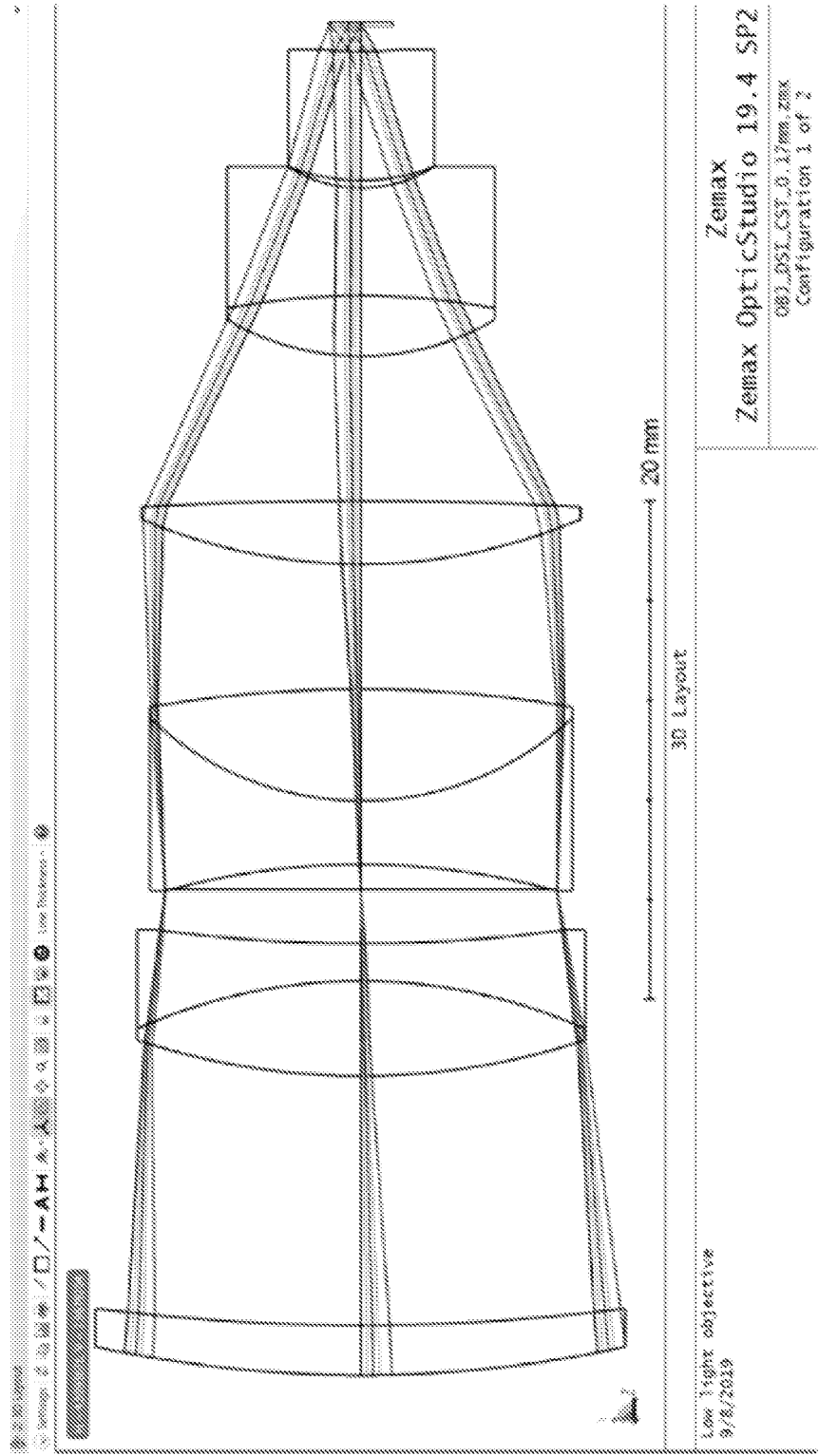
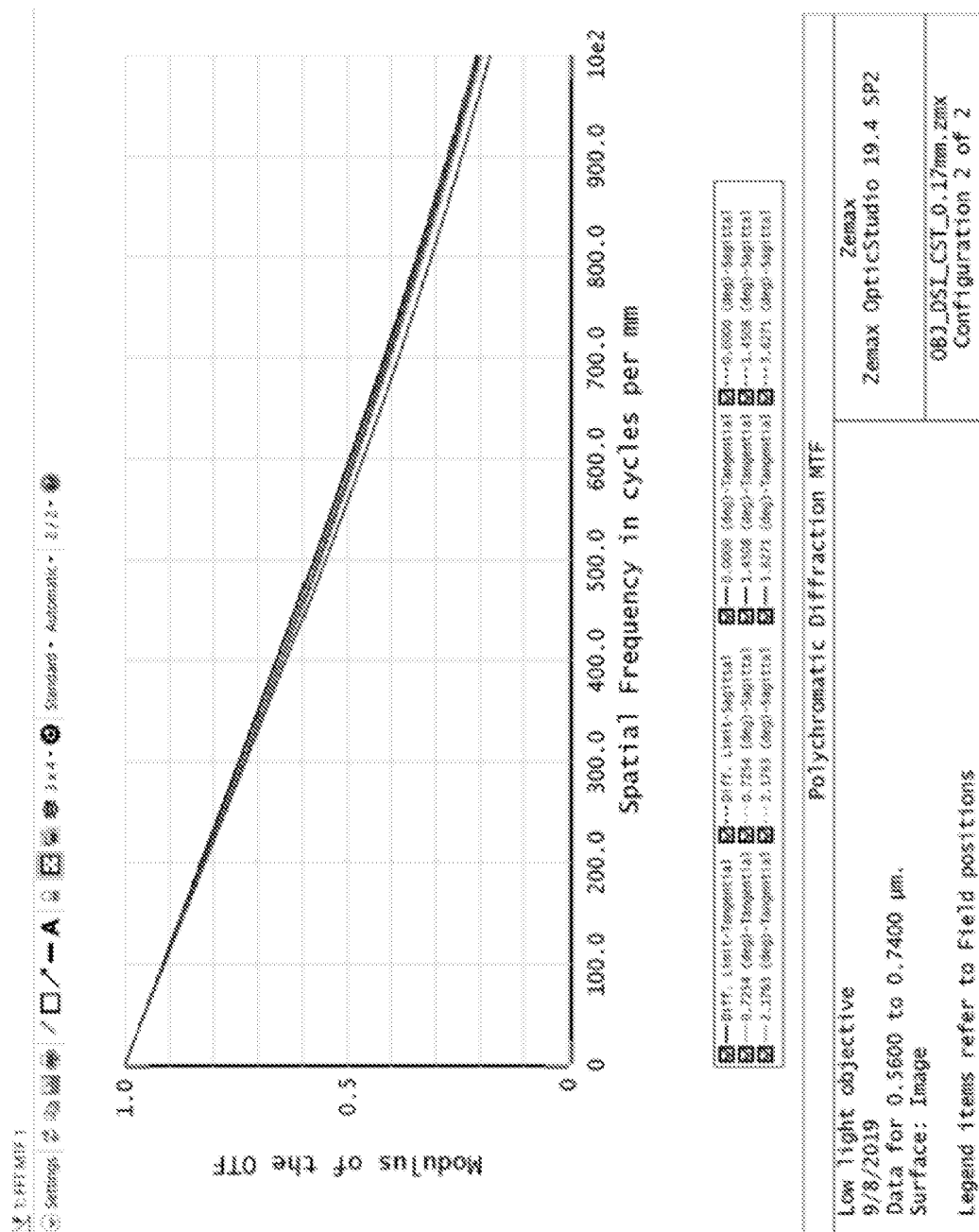
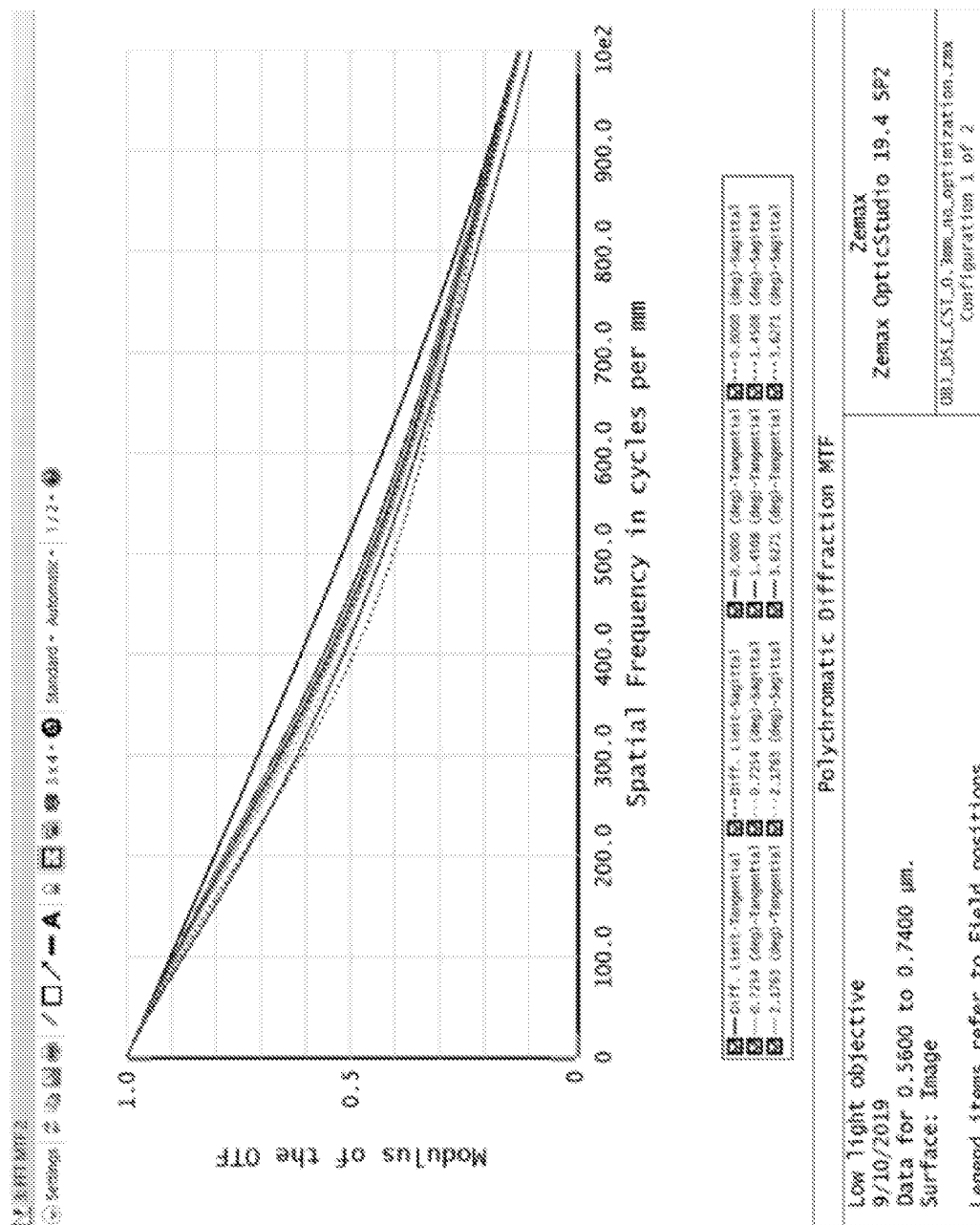


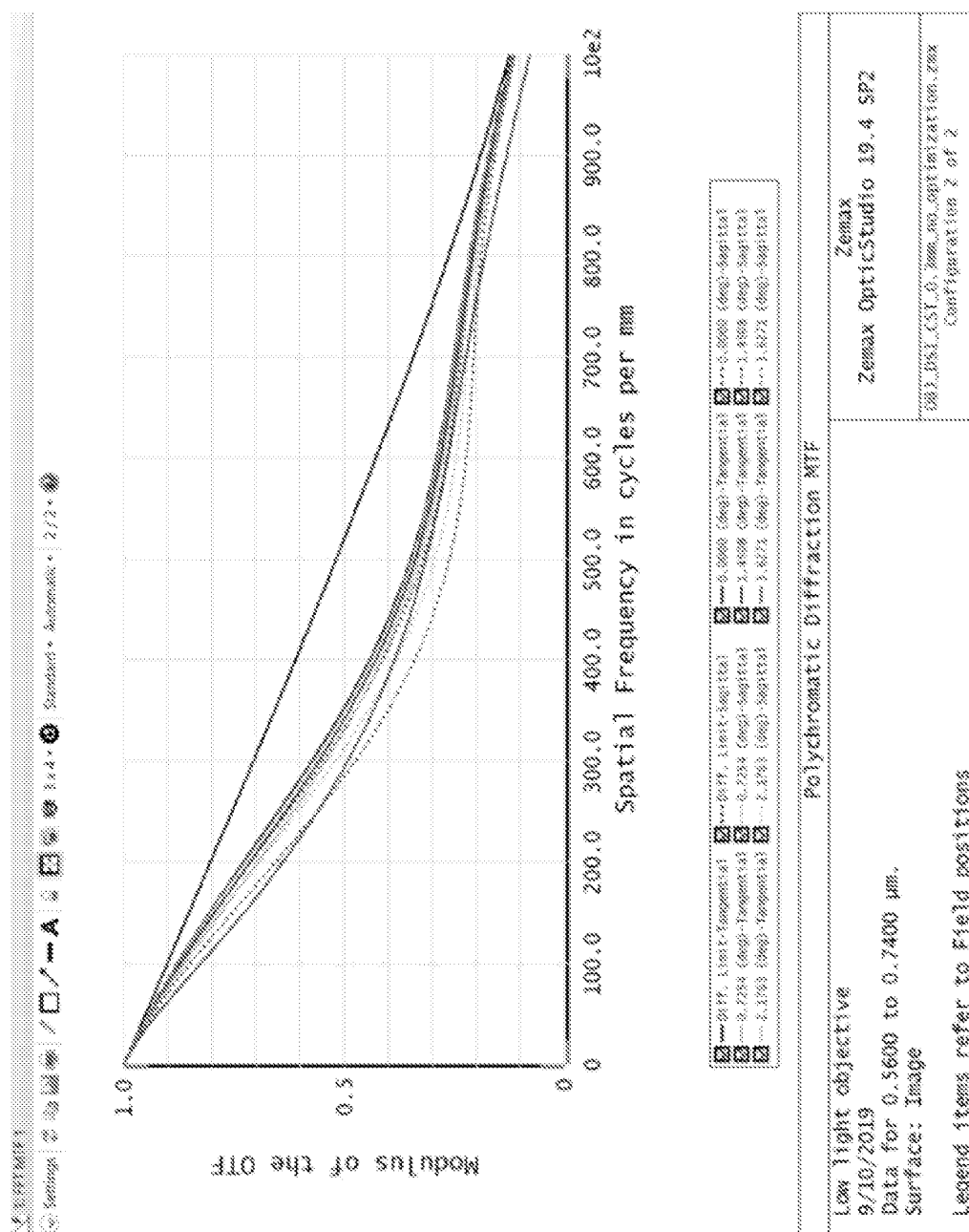
FIG. 19



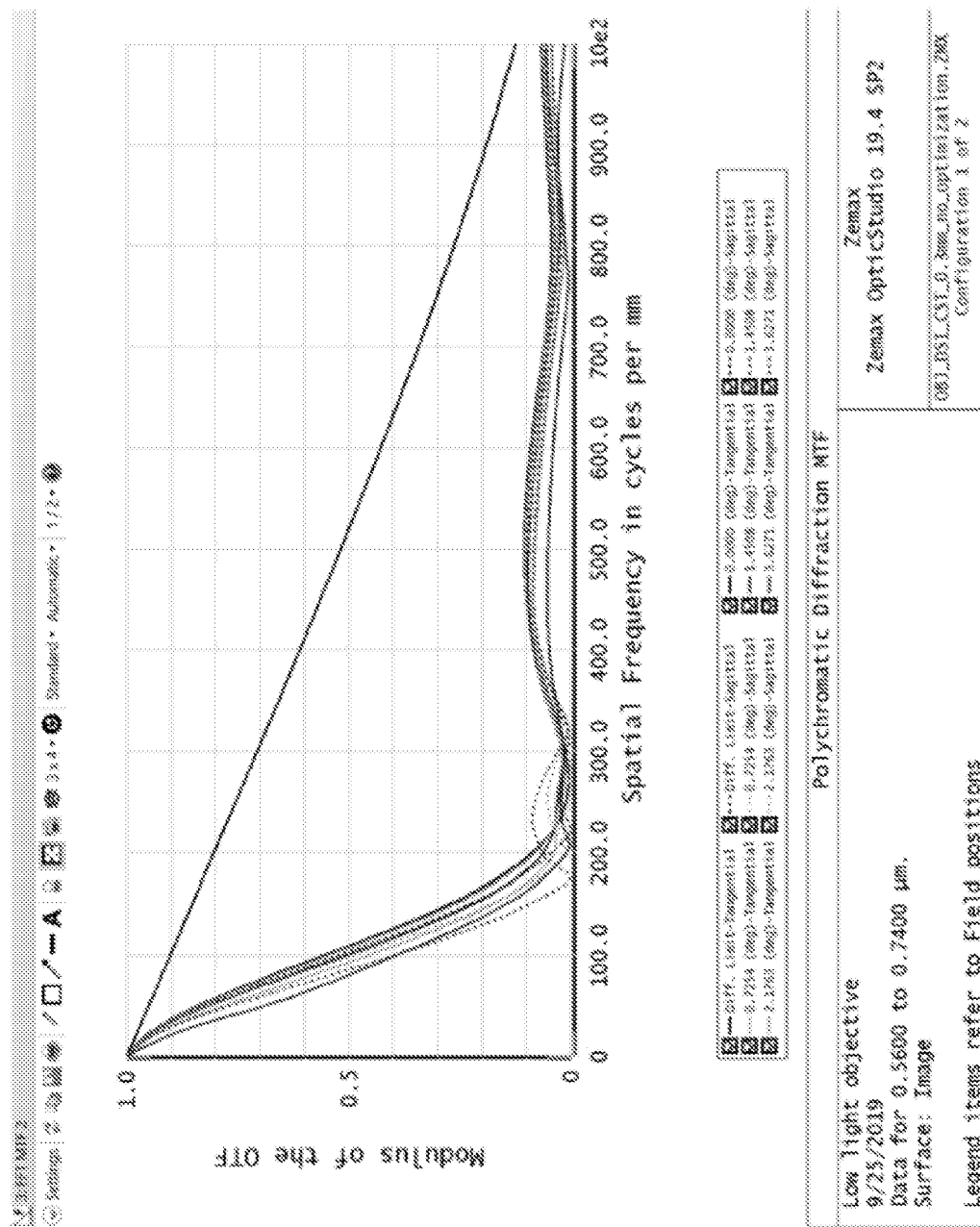
2020



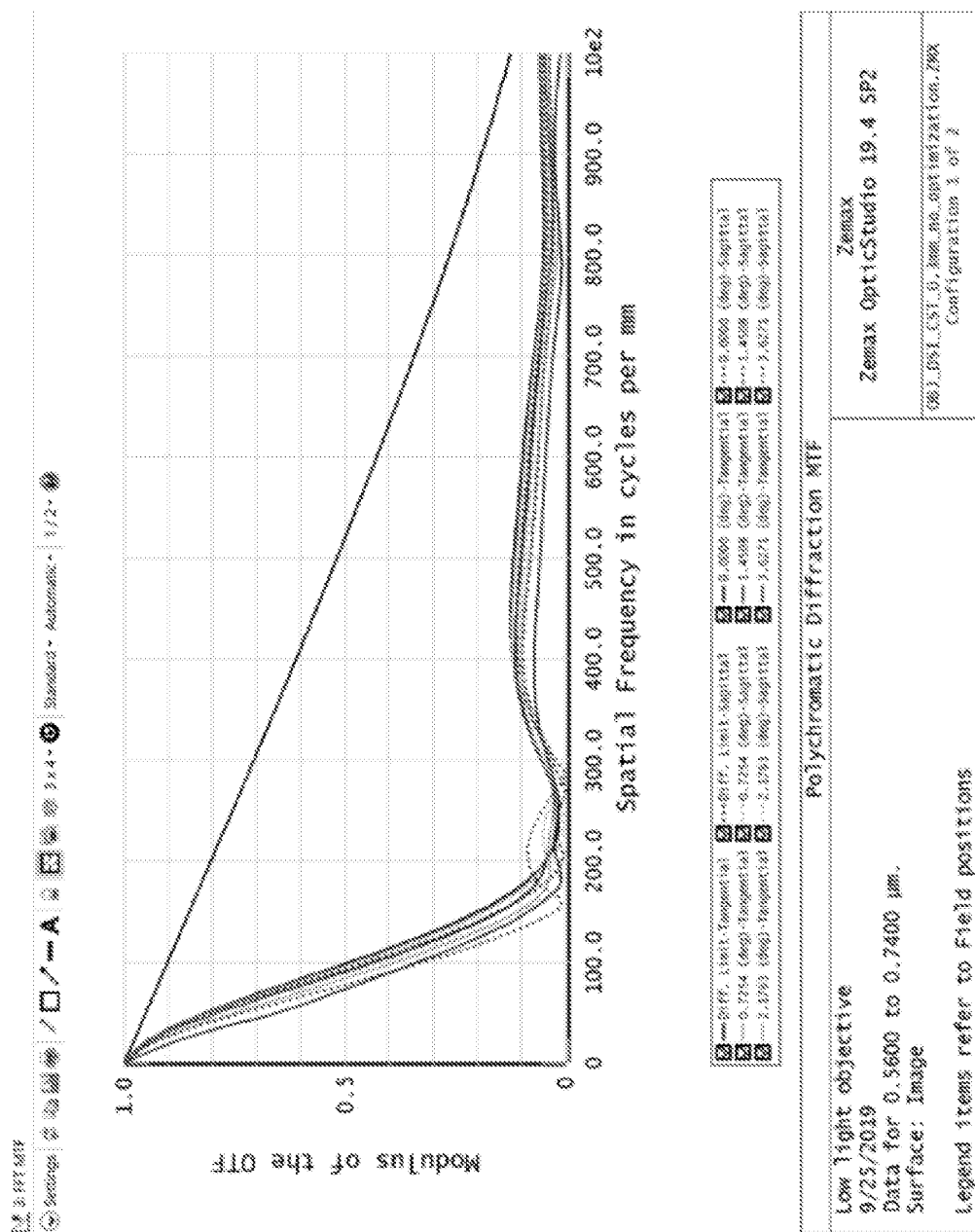
26



226



264



24

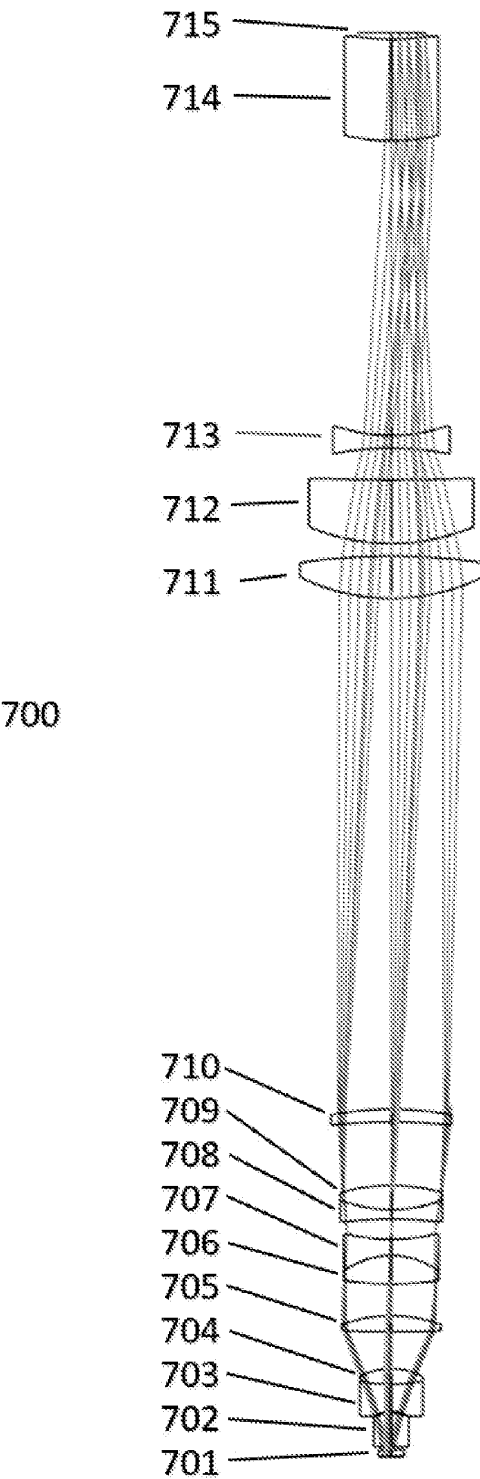
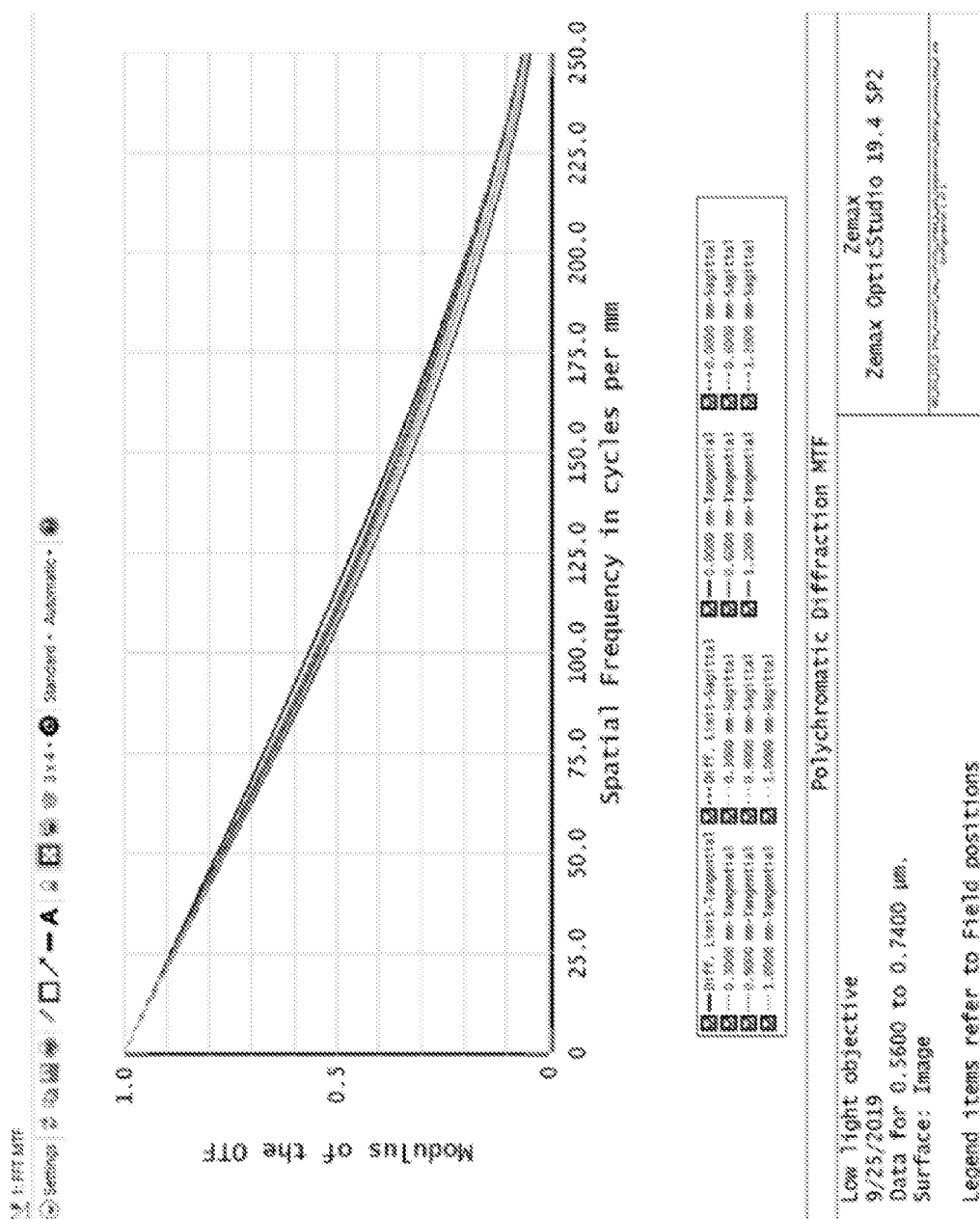
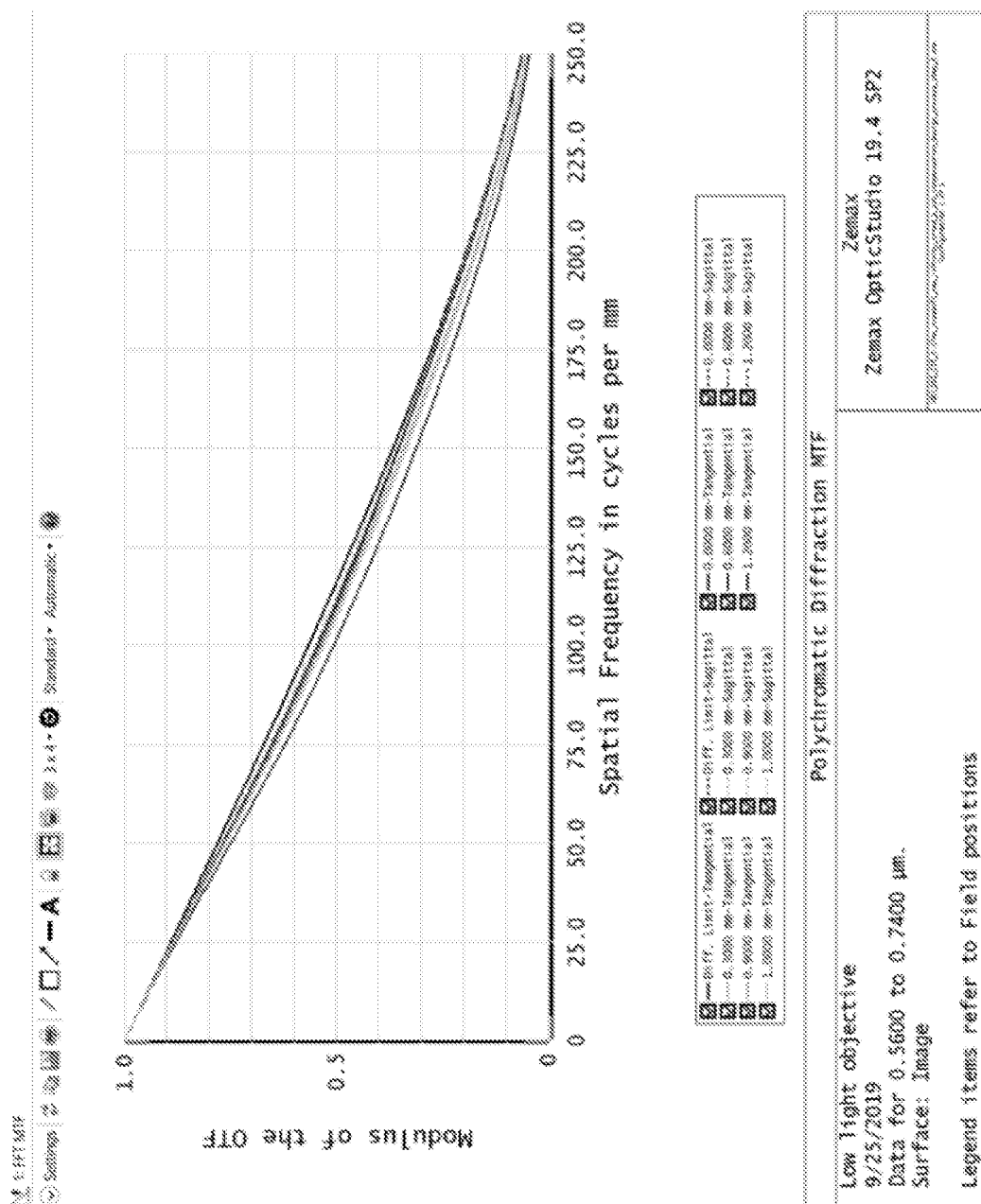


FIG. 25



2024



30/127

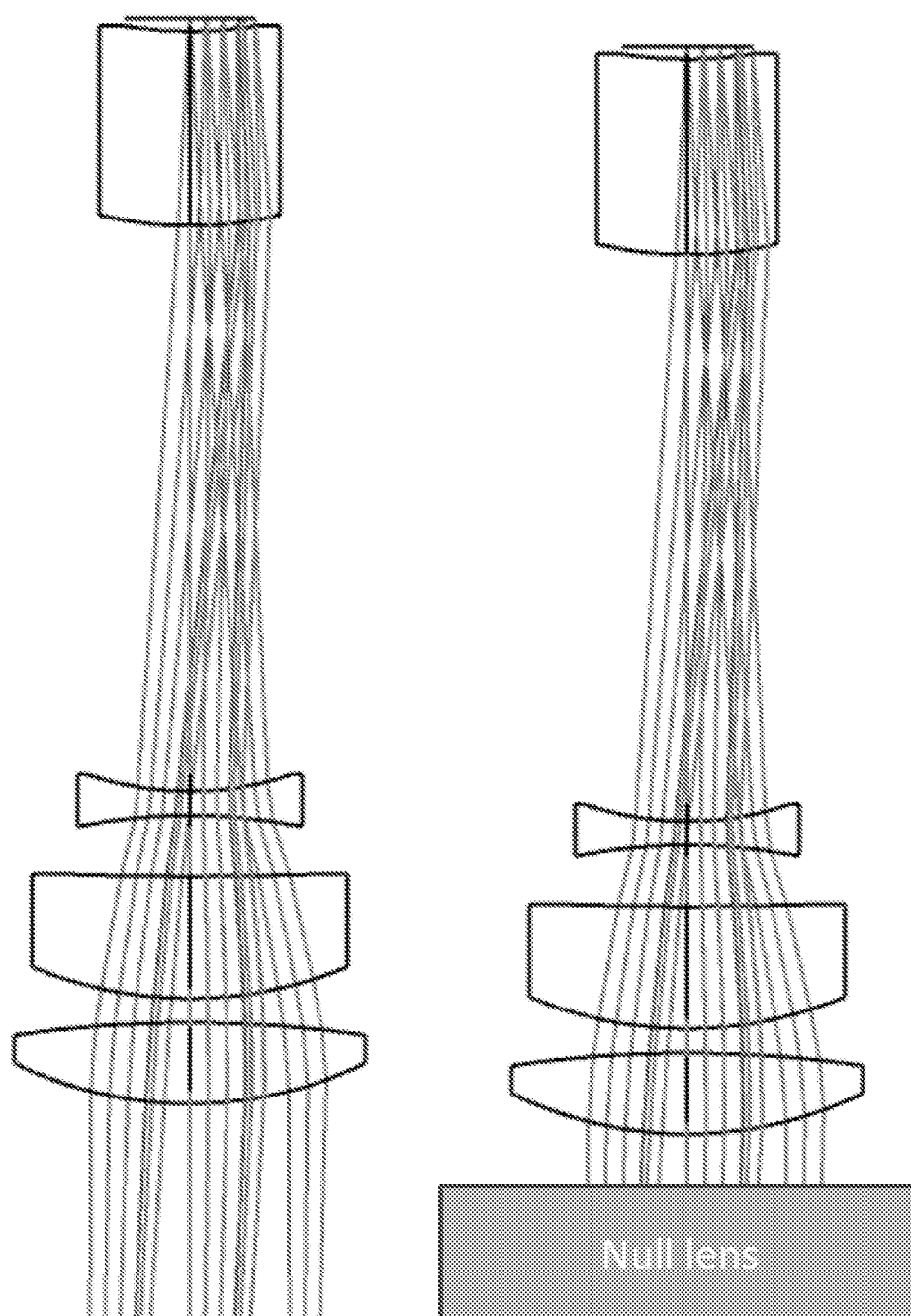


FIG. 28

31/127

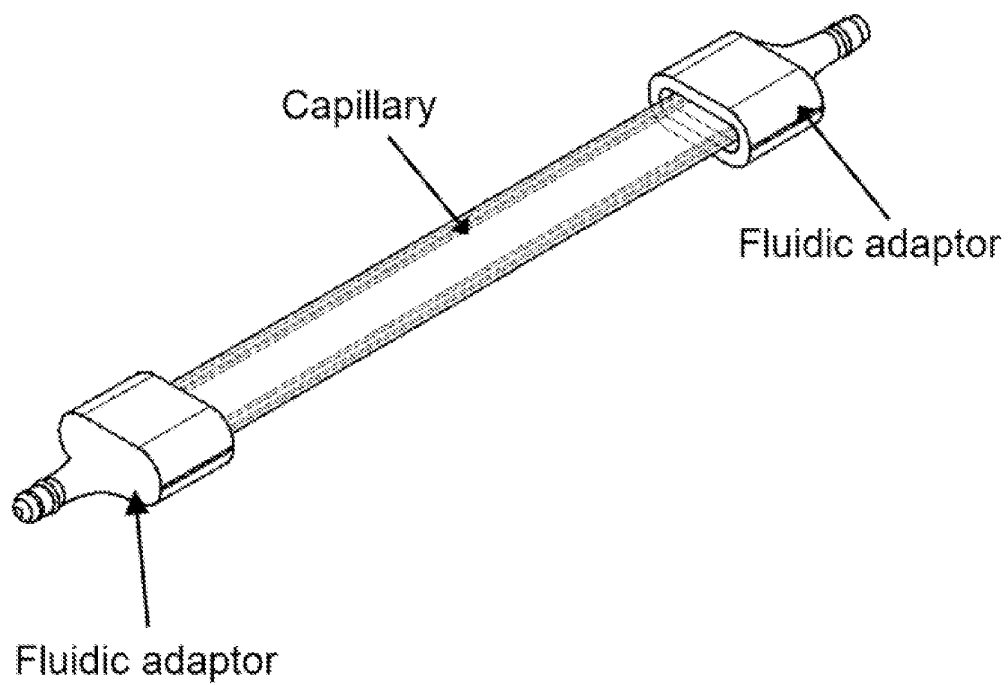


FIG. 29

32/127

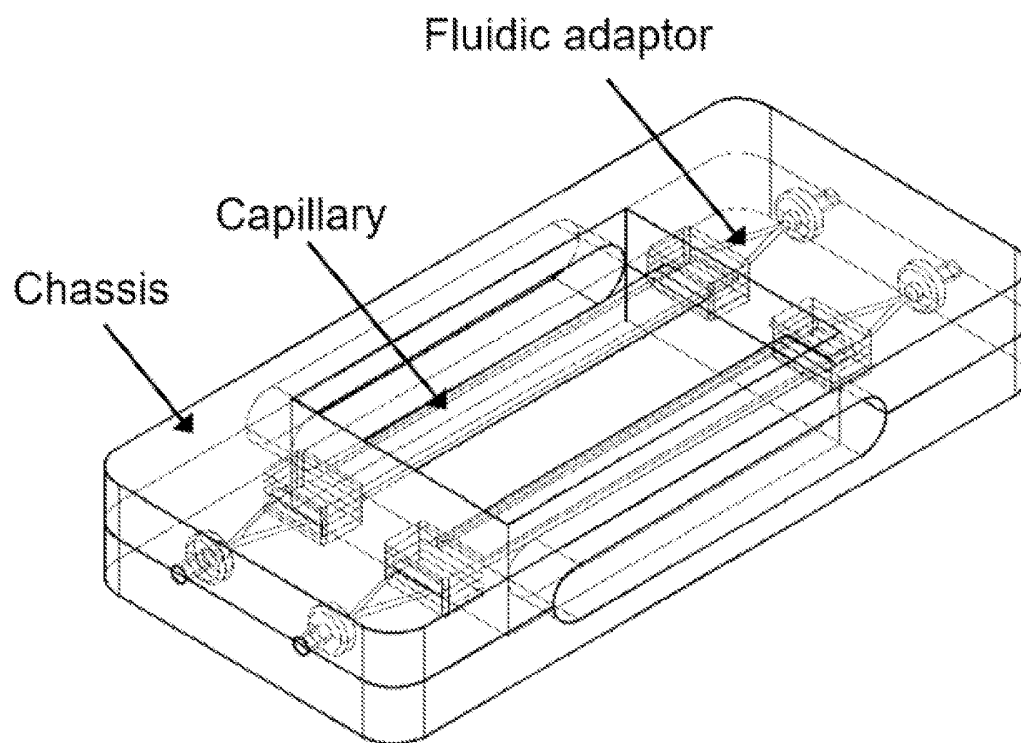


FIG. 30

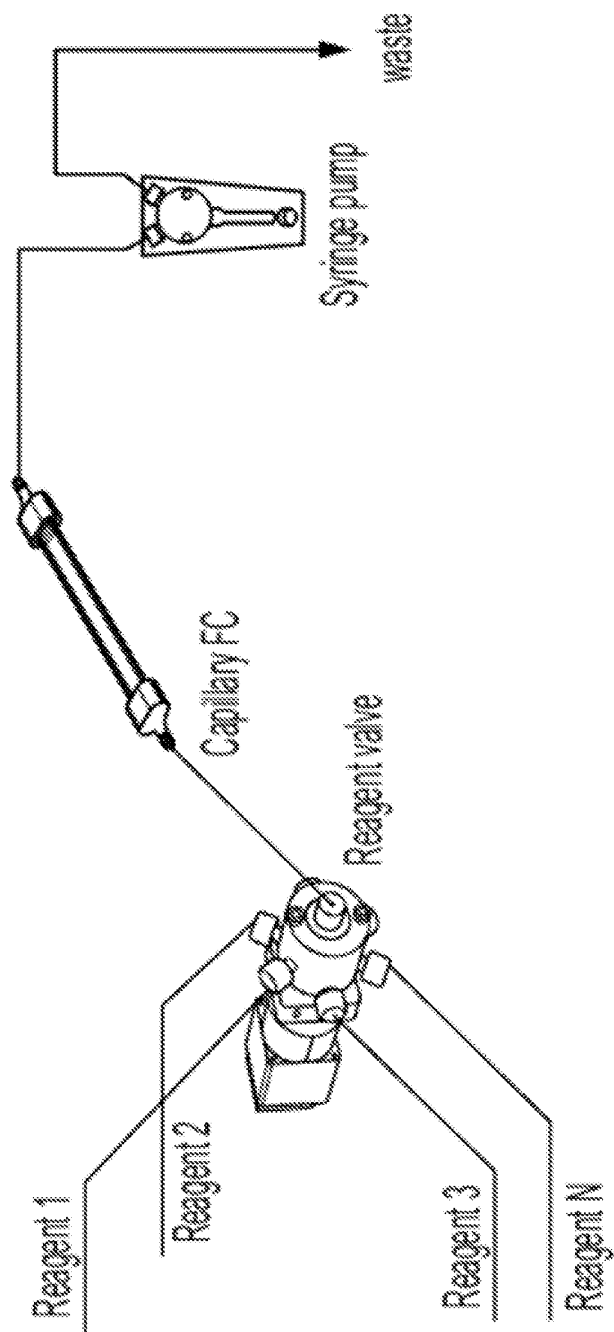


FIG. 31

34/127

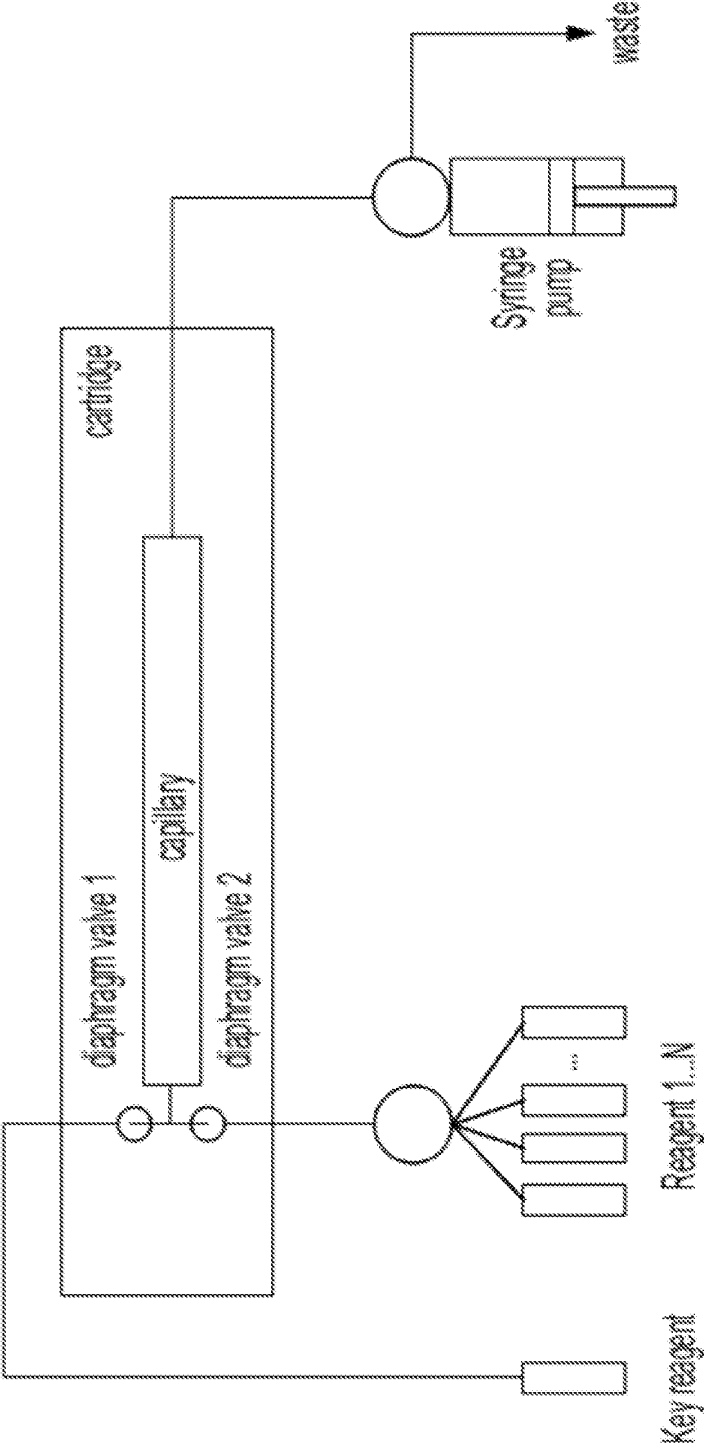


FIG. 32

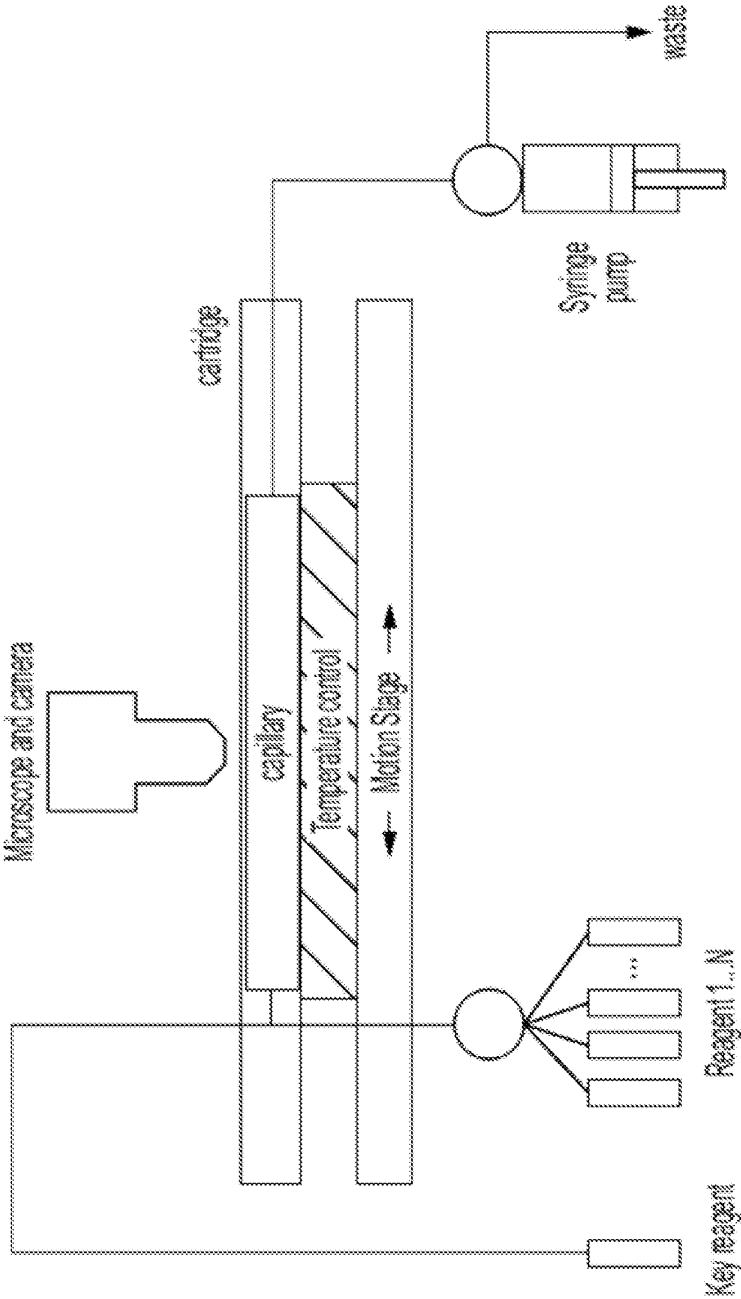


FIG. 33

36/127

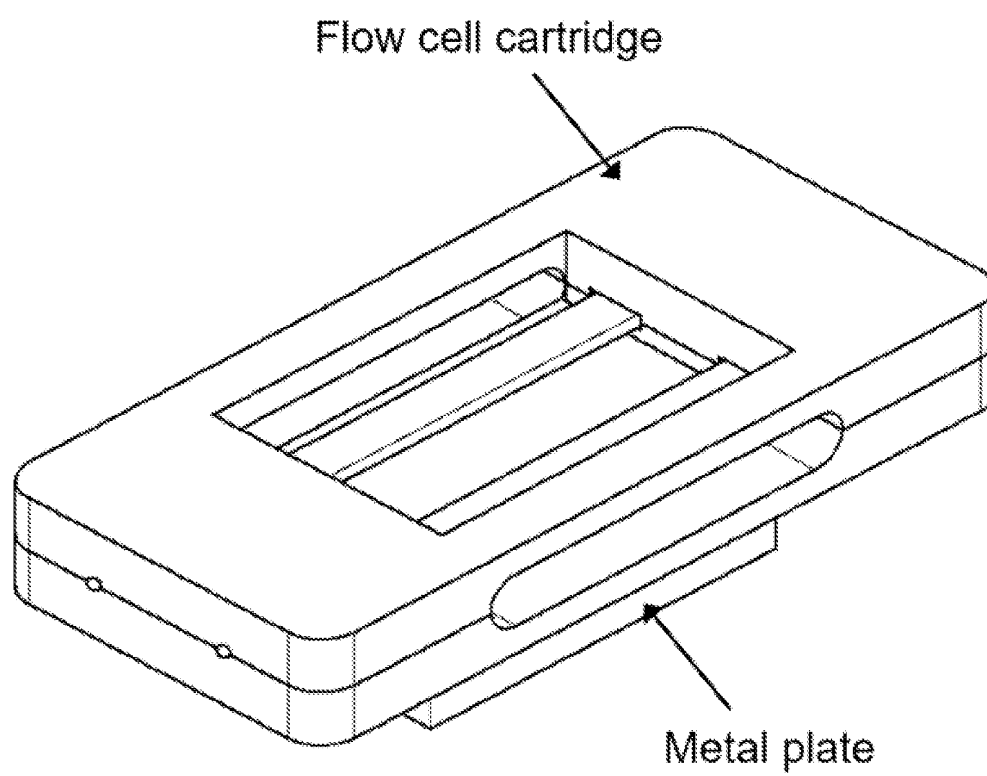


FIG. 34

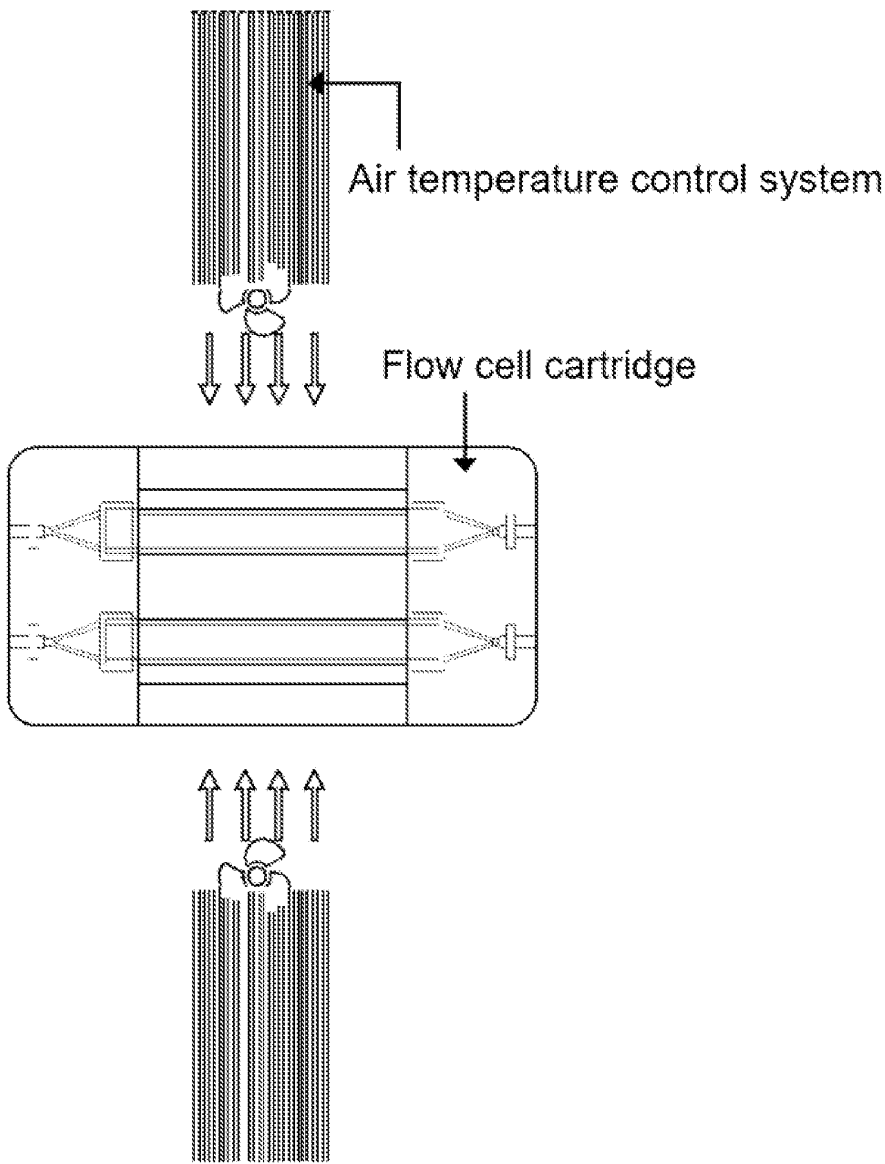
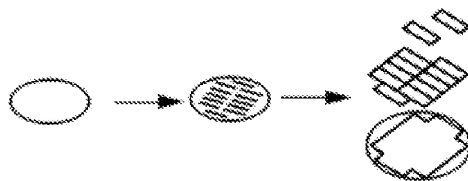


FIG. 35

38/127

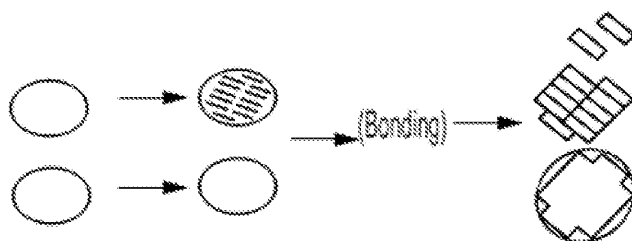
1 Piece



- 1 Layer
- 12 Slide's per 8 inch (210 mm) Wafer

FIG. 36A

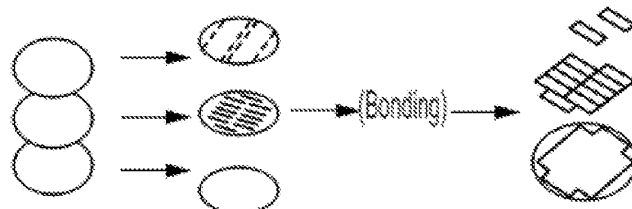
2 Piece



- 2 Layer's
- 12 Slide's per 8 inch (210 mm) Wafer

FIG. 36B

3 Piece



- 3 Layer's
- 12 Slide's per 8 inch (210 mm) Wafer

FIG. 36C

Two Lane, Two piece FlowCell		
Size	Dwg No.	Rev.
B	303_000	@01

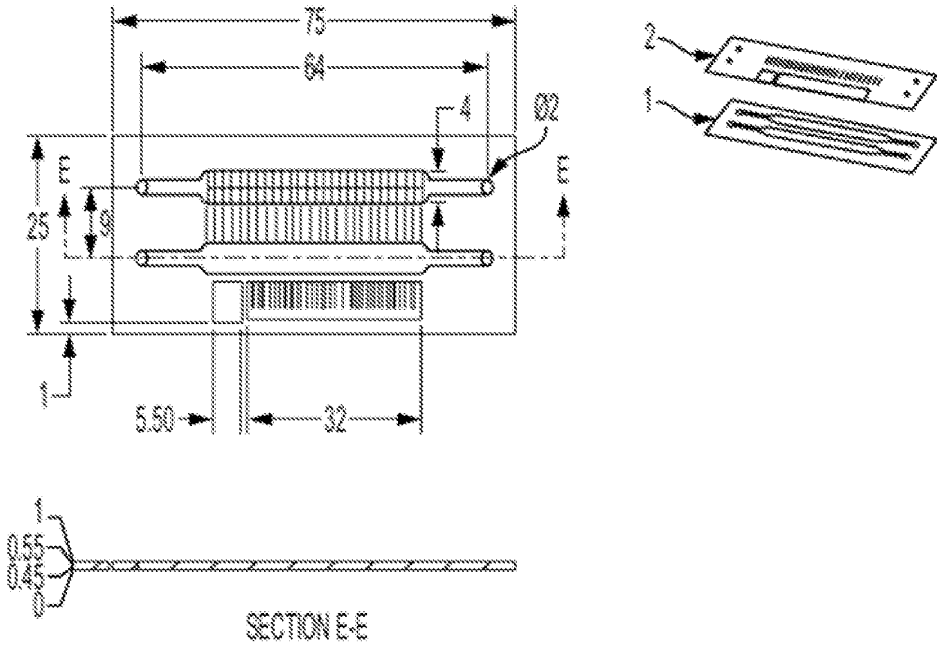


FIG. 37B

Two Lane, Three piece FlowCell	Size	Dwg No.	Rev.
	B	312_000	@01

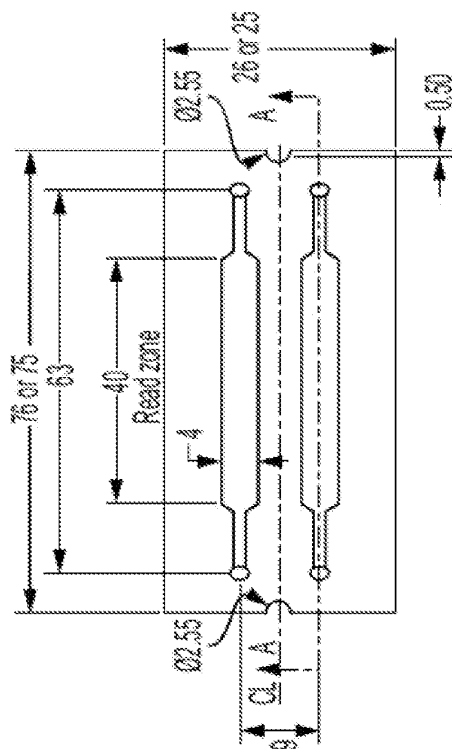
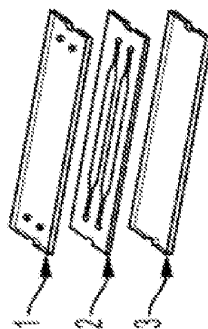


FIG. 37C



BOM Table			
Item No.	Number	DESCRIPTION	QTY.
1	311_0001	Inlet Layer, Eight Lane Flow Cell	1
2	311_0002	Channel Layer, Eight Lane Flow Cell	1
3	311_0003	Base Layer, Eight Lane Flow Cell	1

42/127

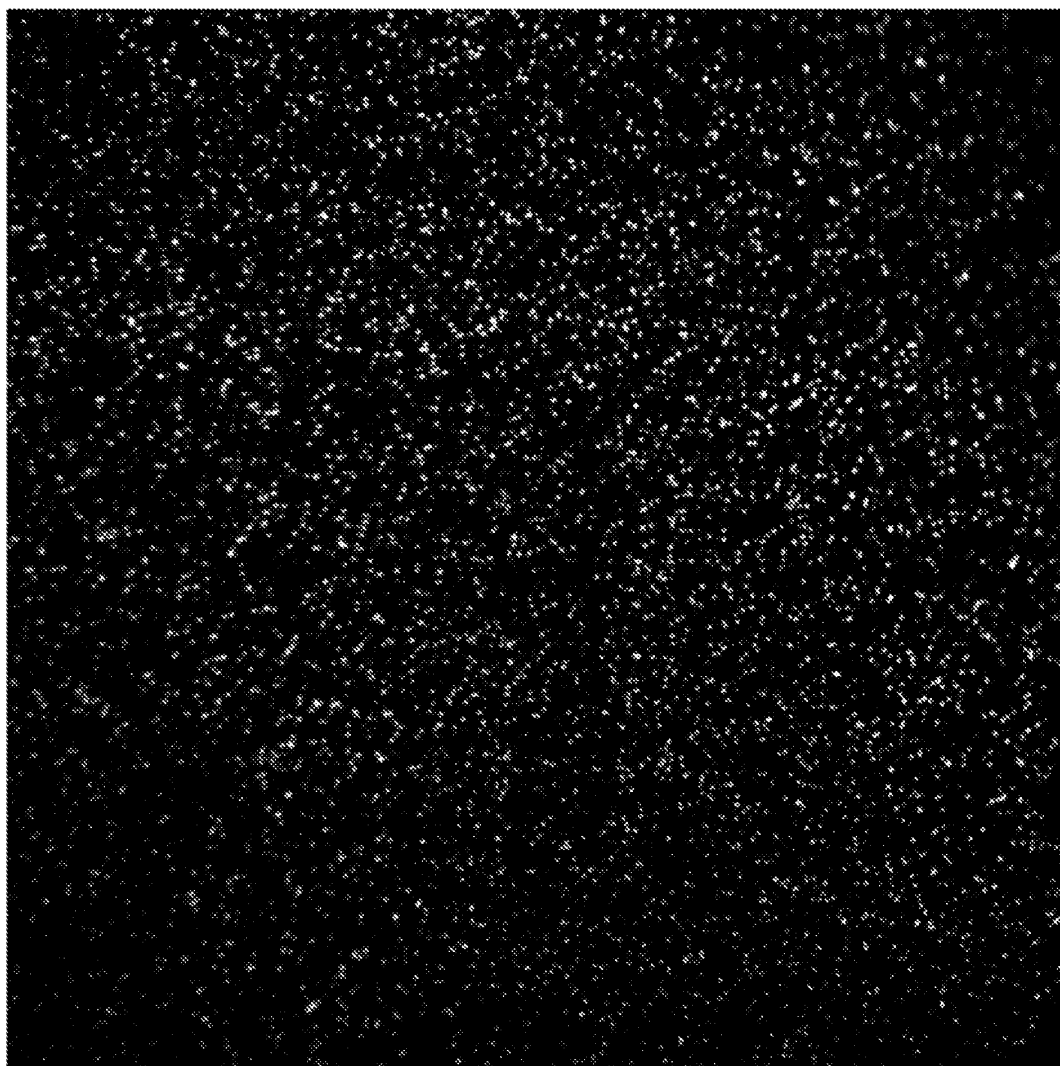


FIG. 38

43/127

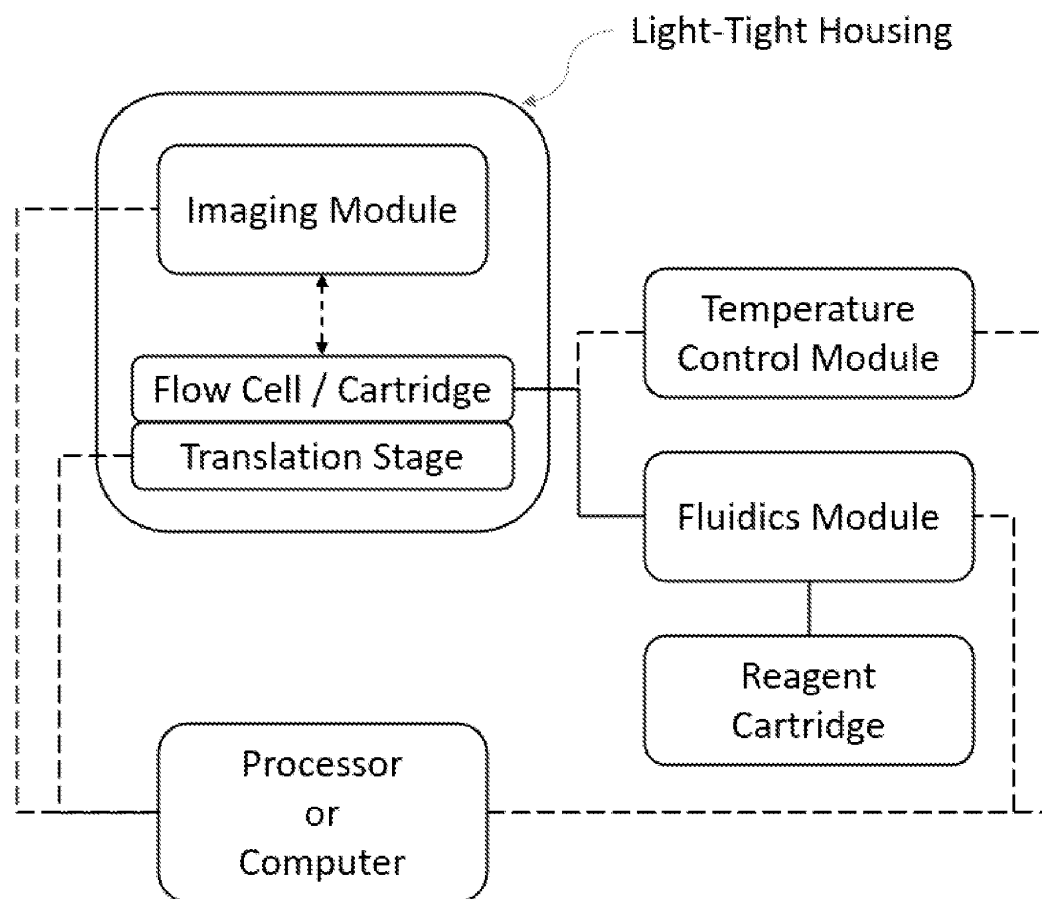


FIG. 39

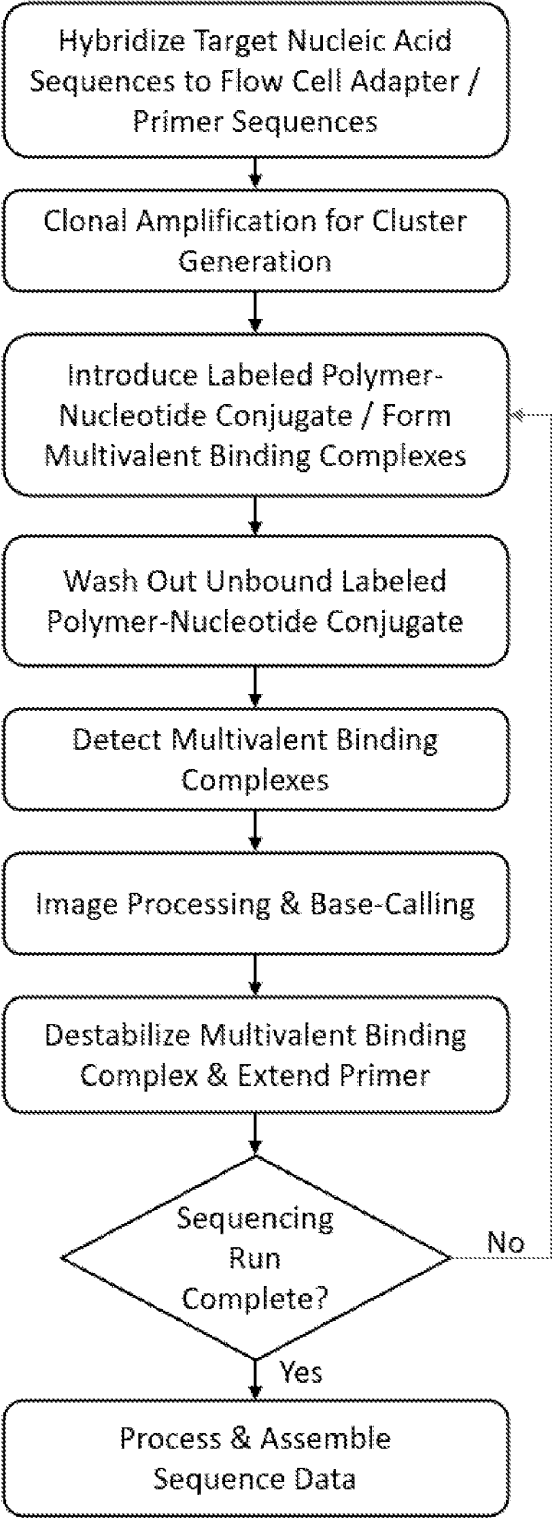


FIG. 40

45/127

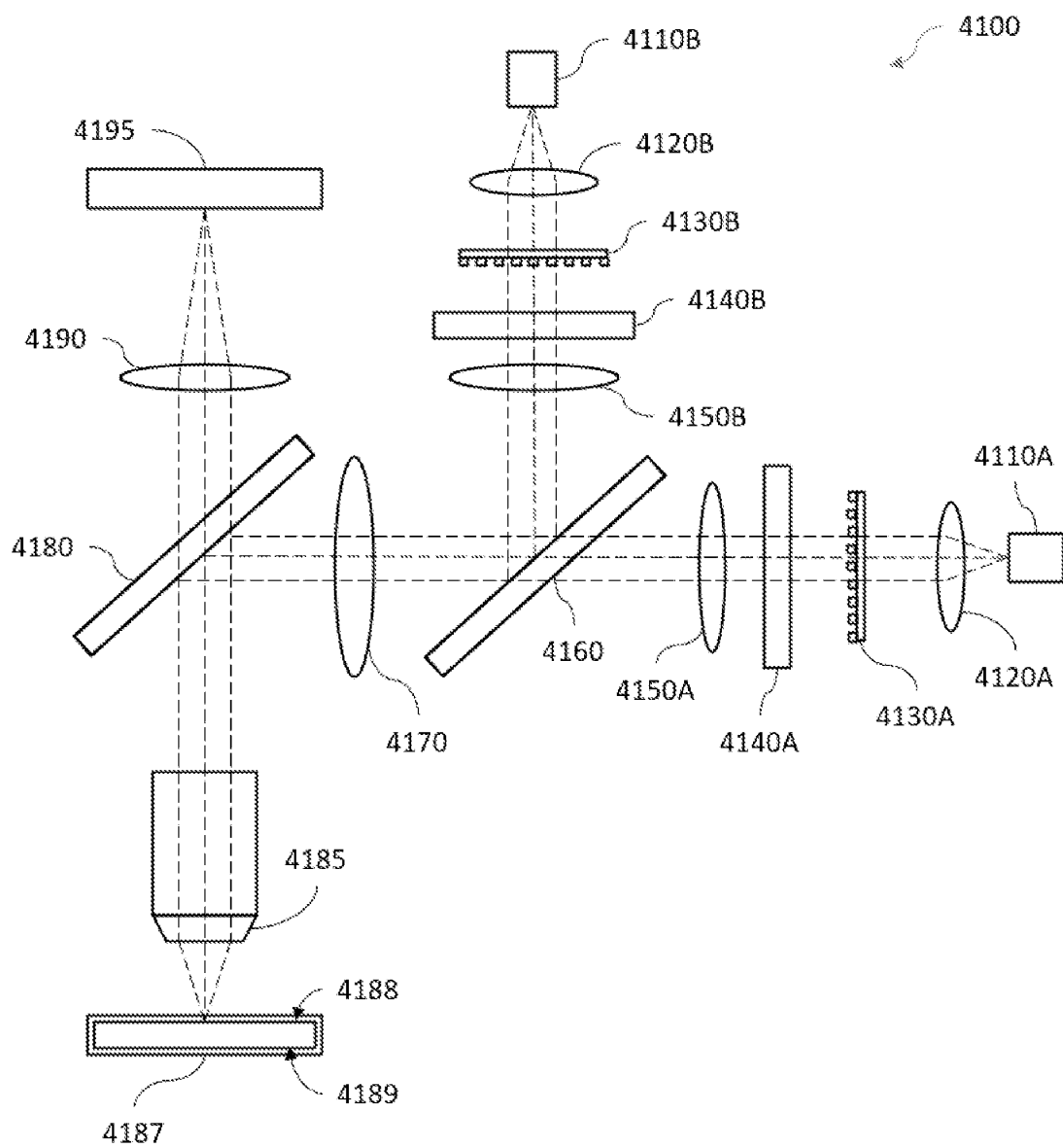


FIG. 41

46/127

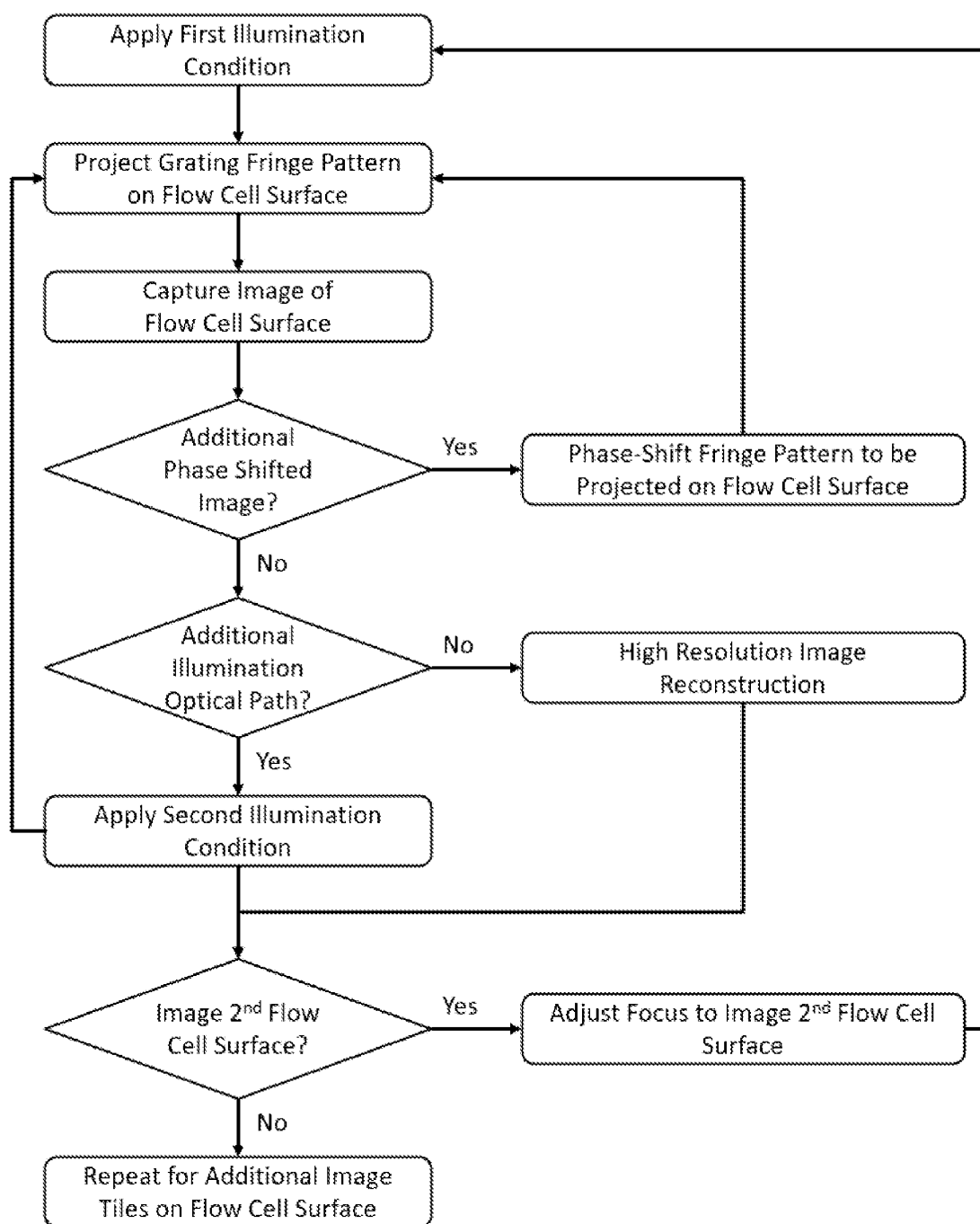


FIG. 42

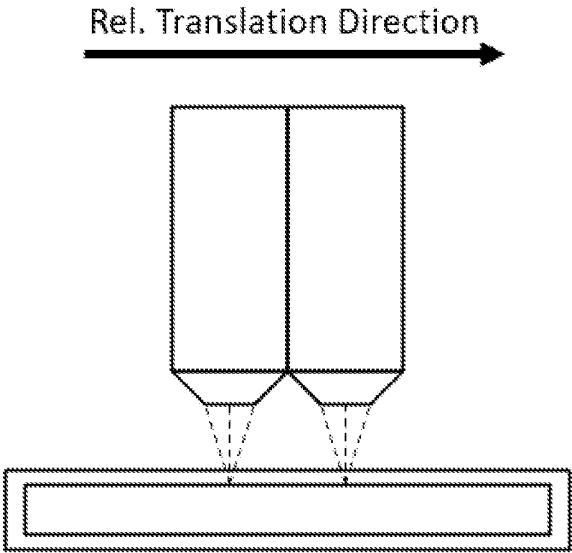


FIG. 43A

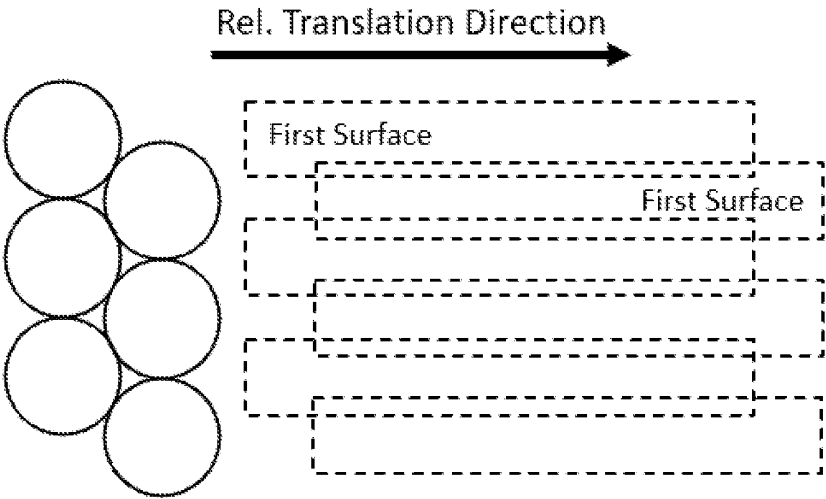


FIG. 43B

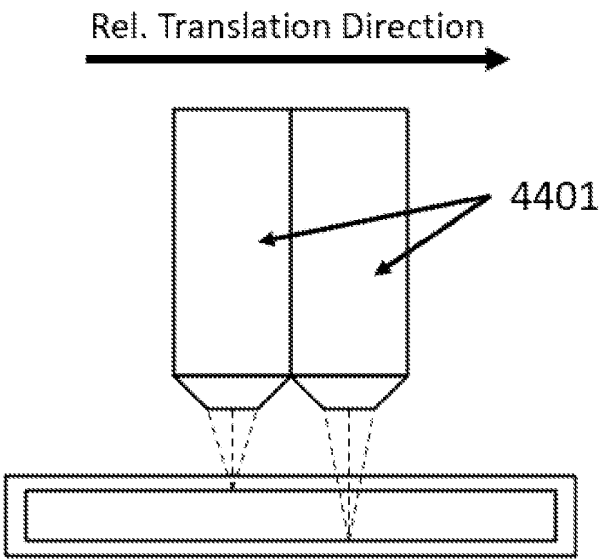


FIG. 44A

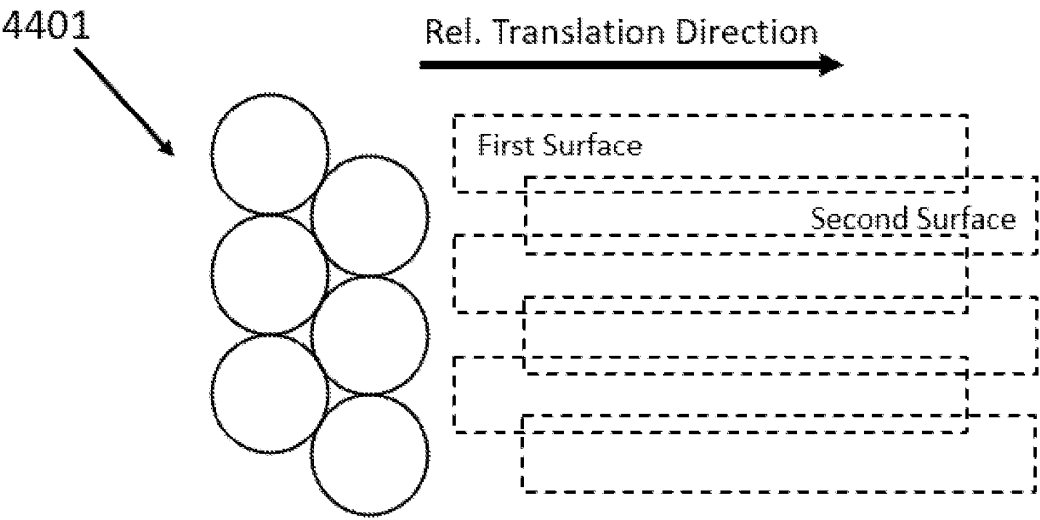


FIG. 44B

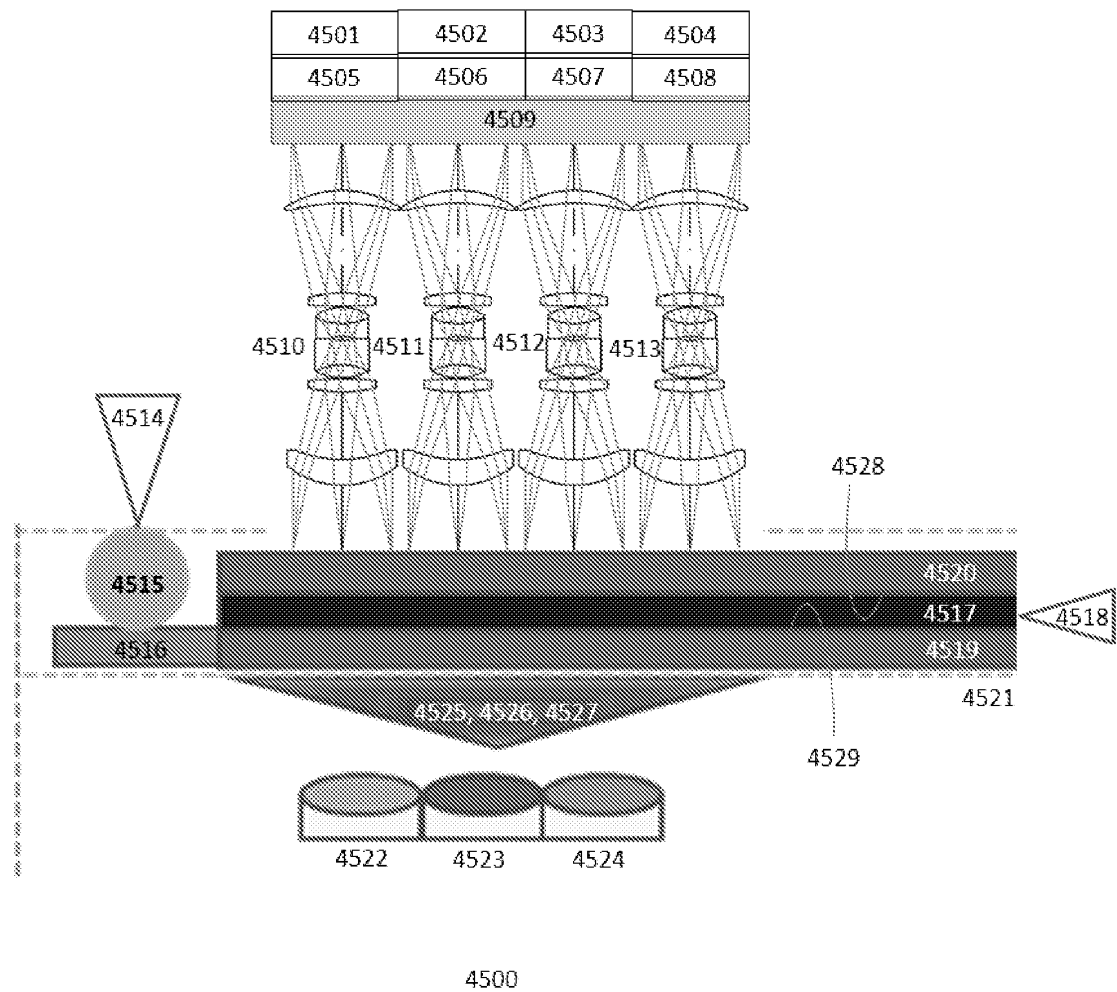


FIG. 45

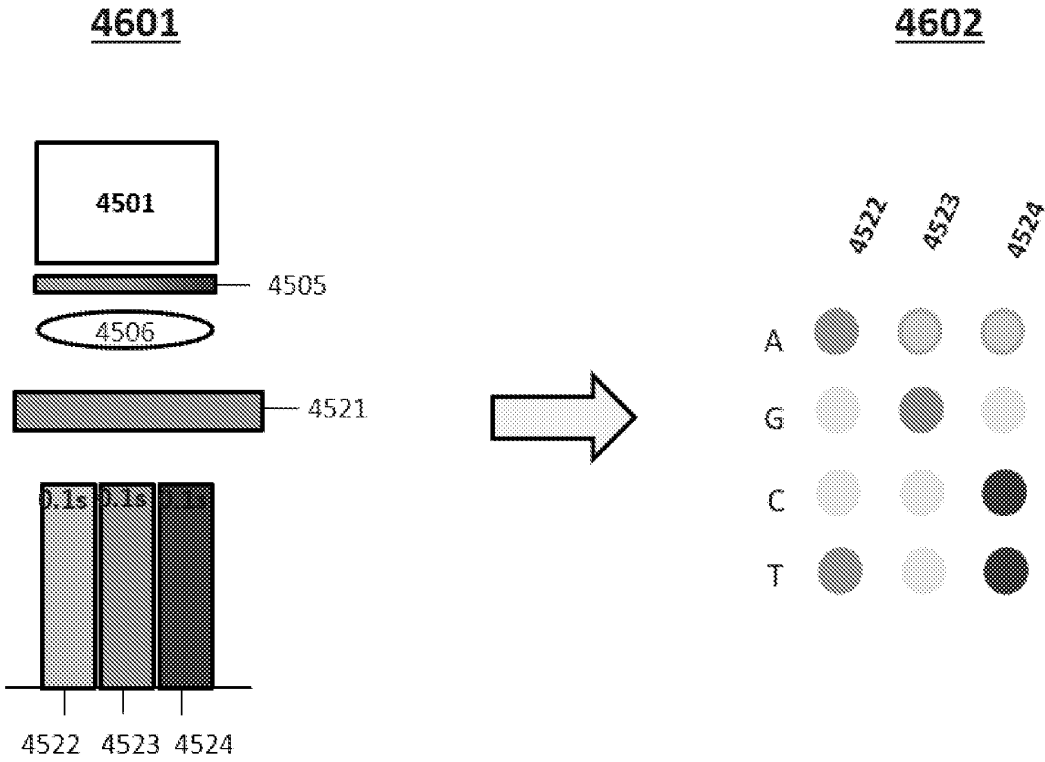


FIG. 46

51/127

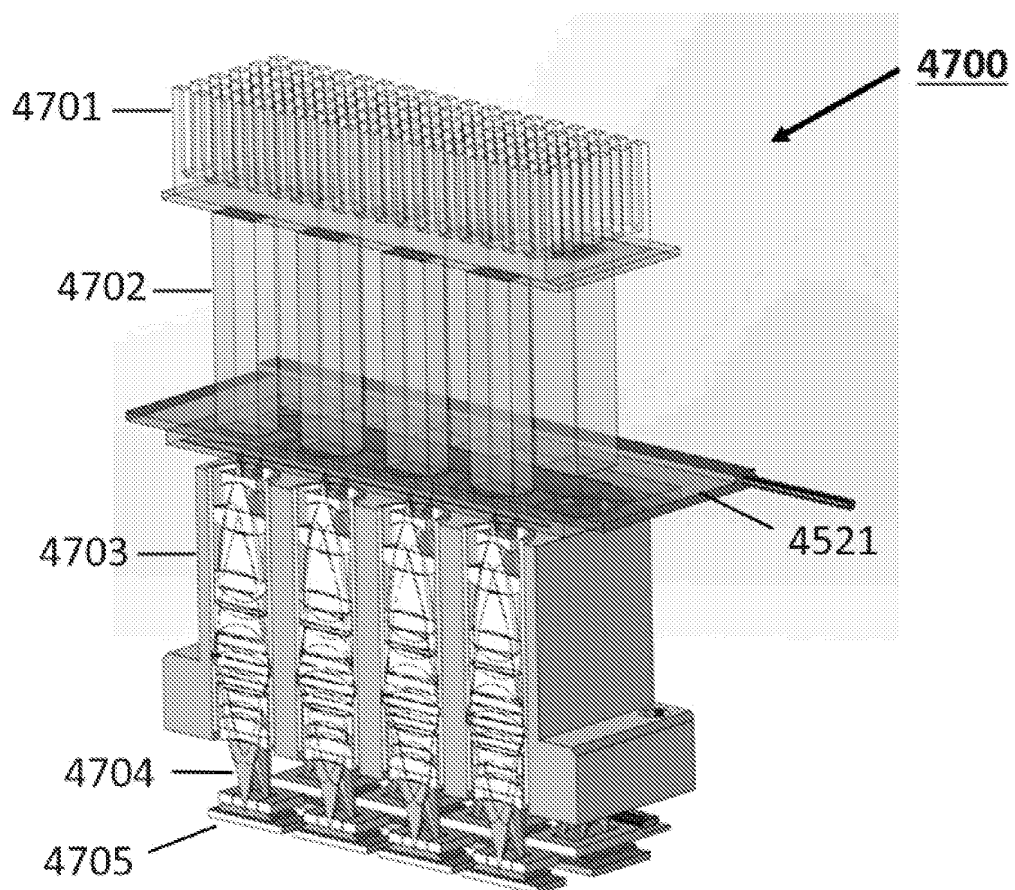


FIG. 47A

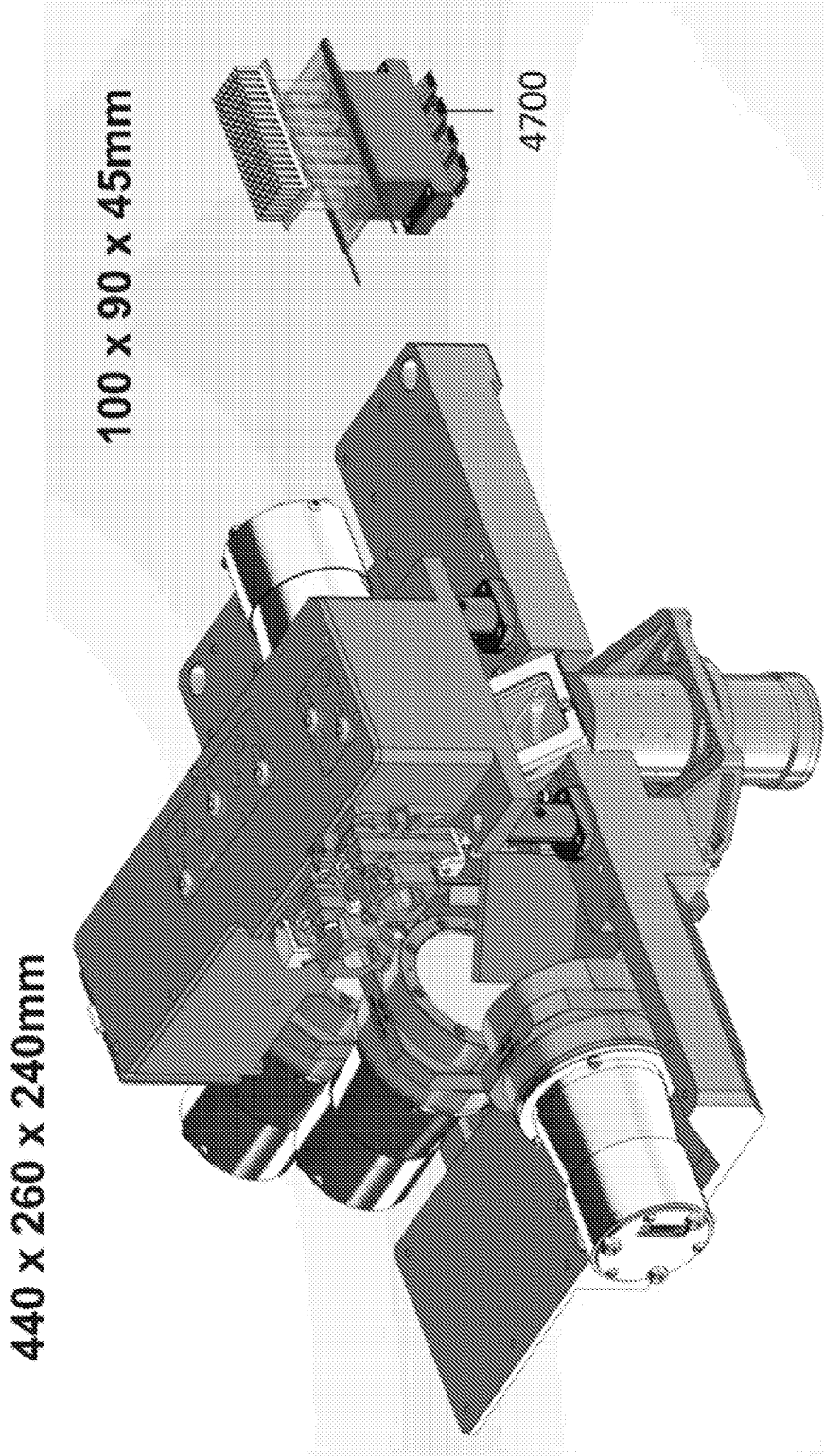
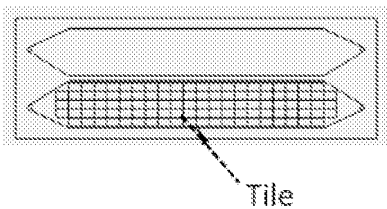


FIG. 47B

53/127

Imaging Area

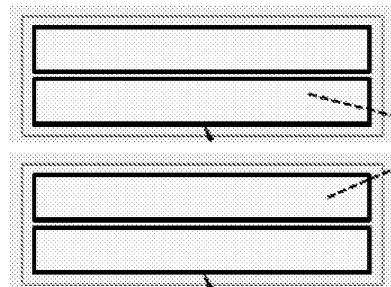


Tile

Imaging 424 individual
tiles

FIG. 48A

Imaging Area



Tile

Imaging < 40 individual
tiles

FIG. 48B

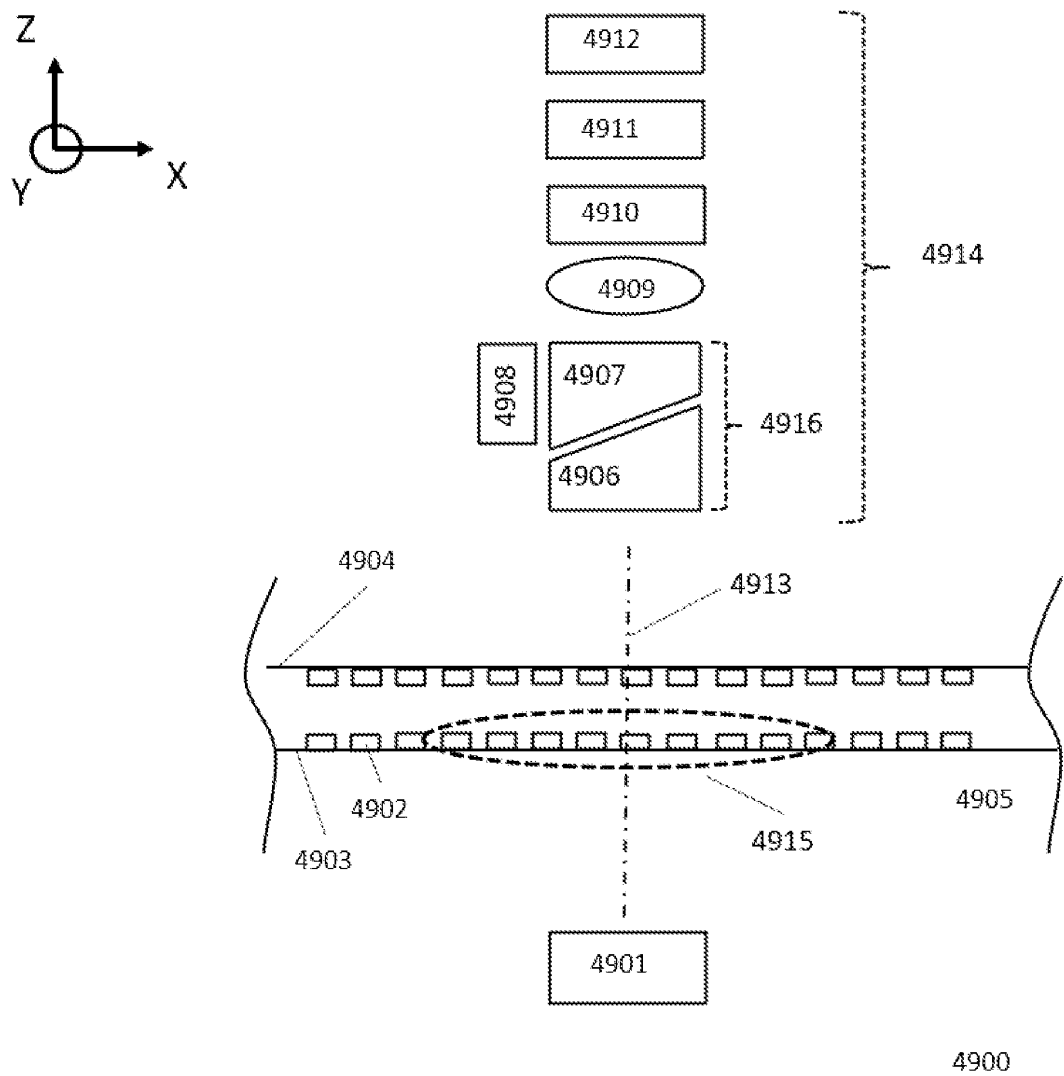


FIG. 49A

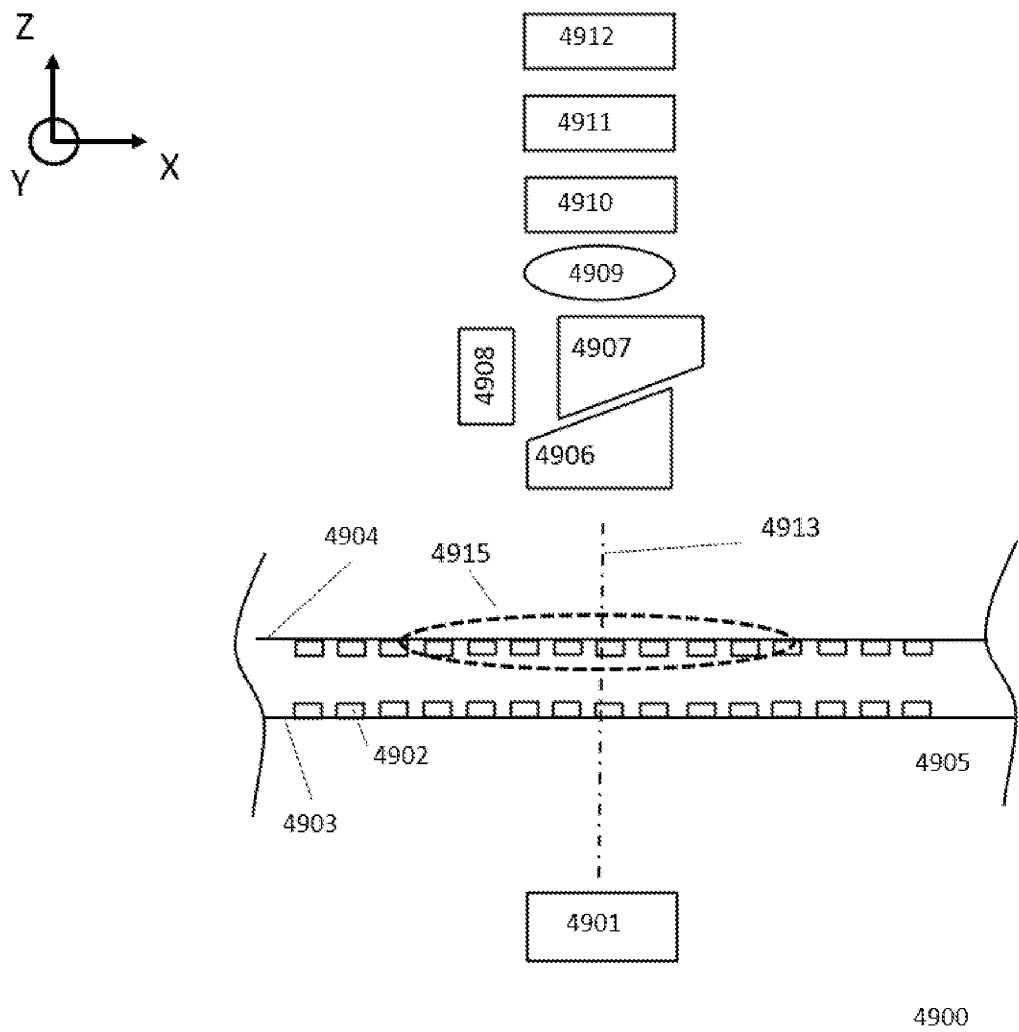


FIG. 49B

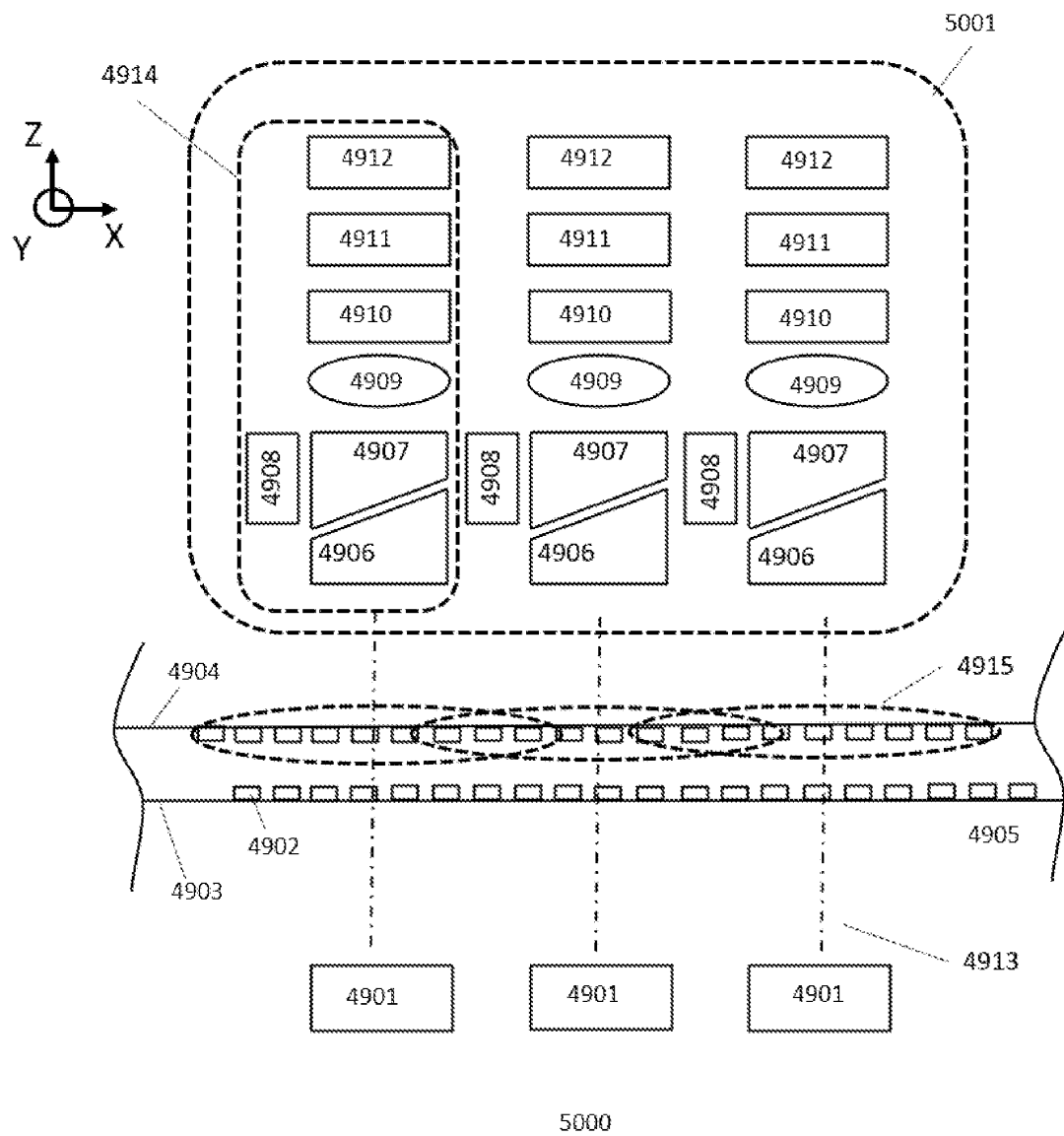


FIG. 50

57/127

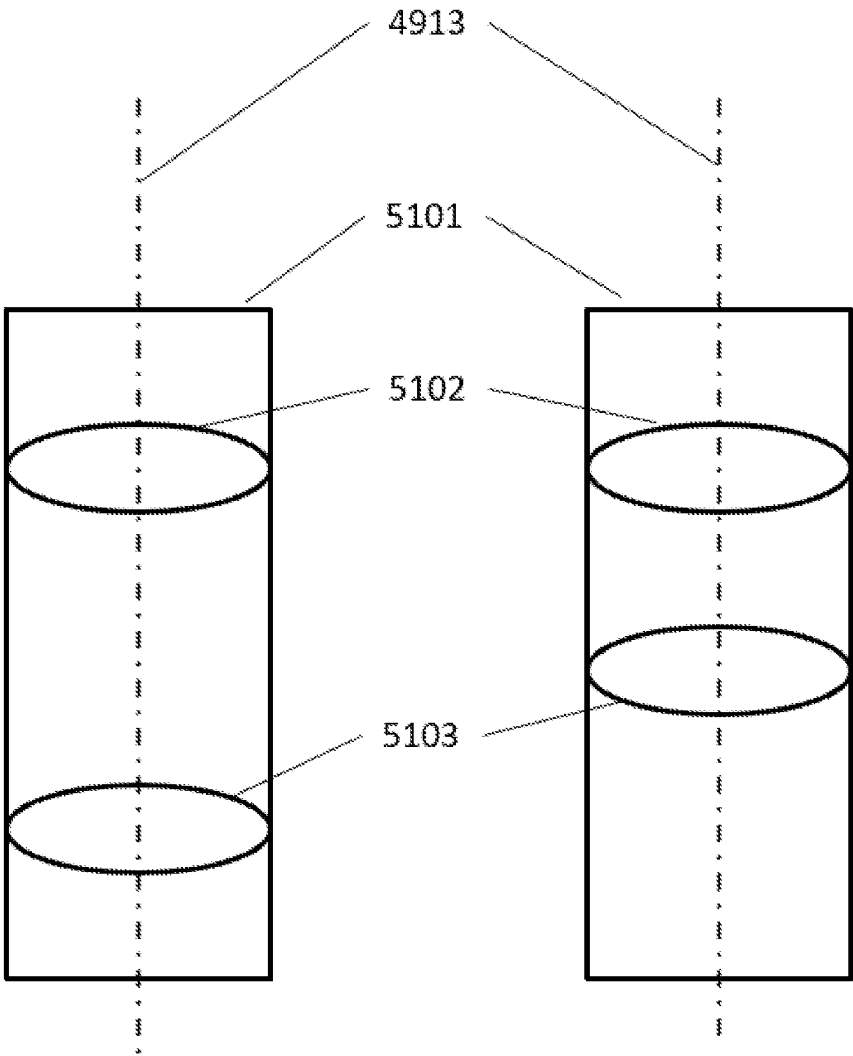


FIG. 51A

FIG. 51B

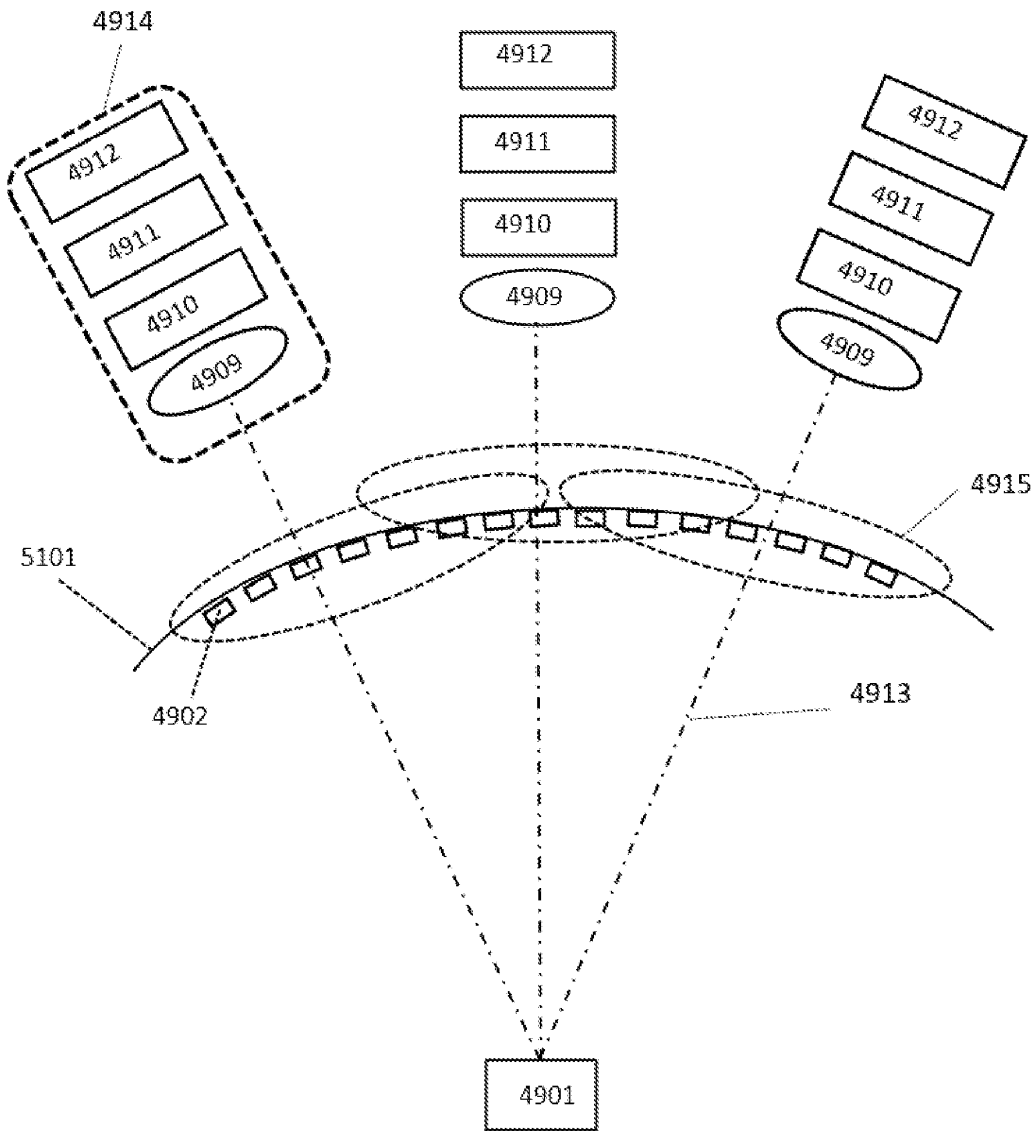
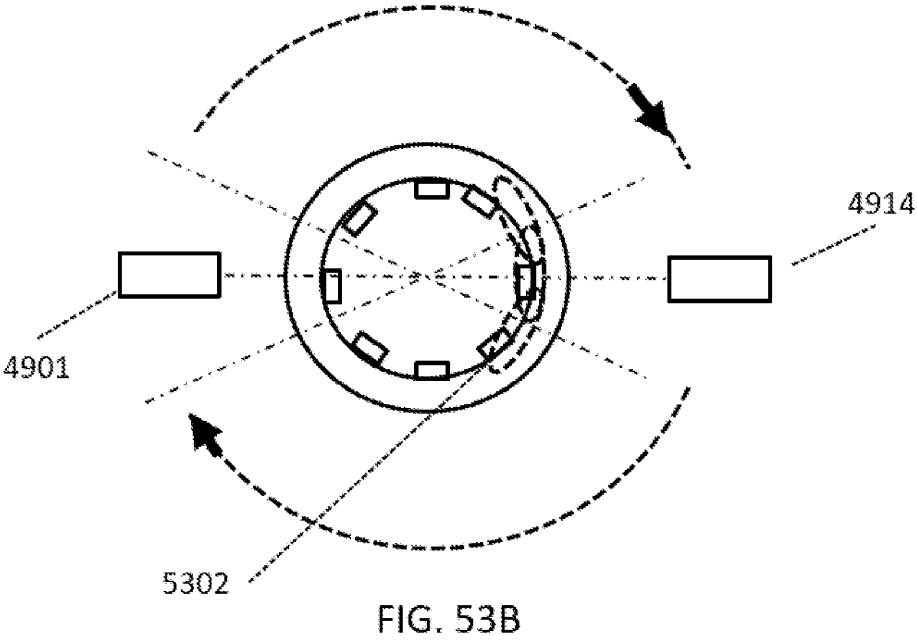
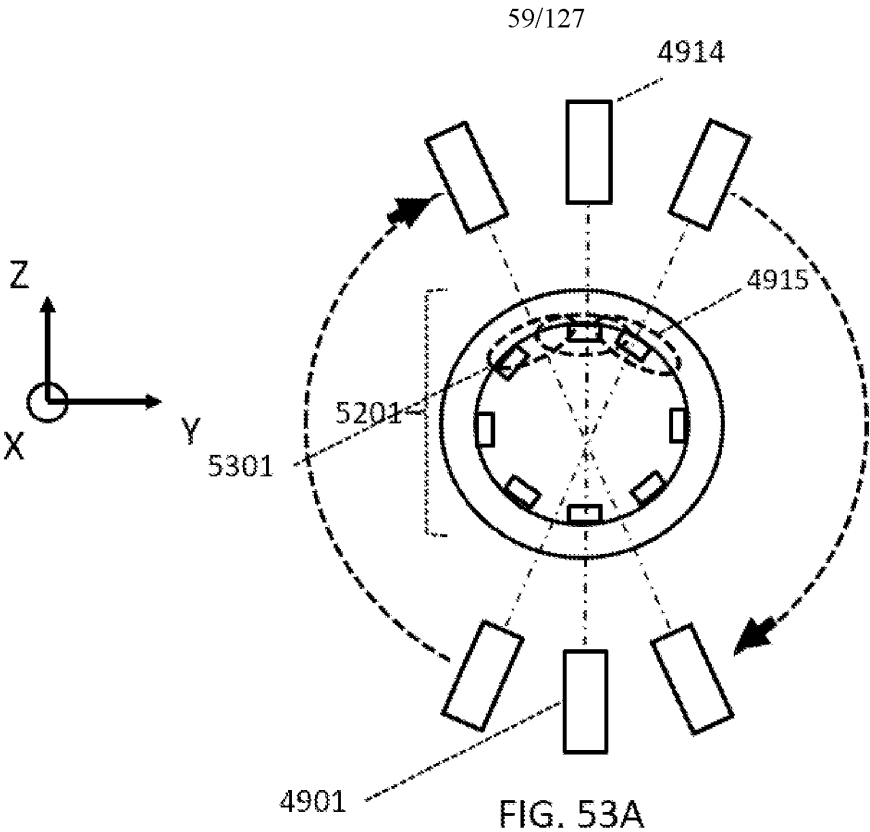


FIG. 52



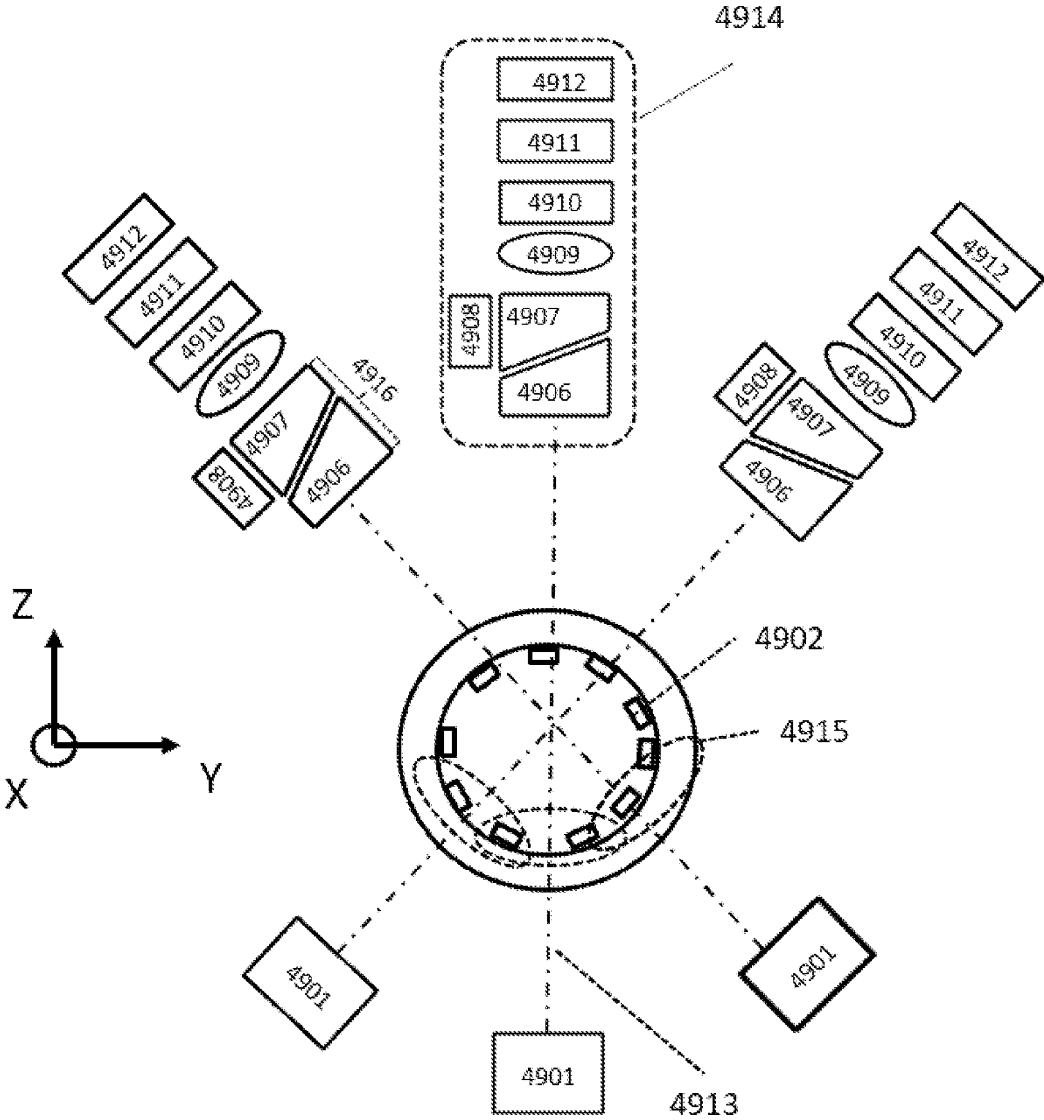


FIG. 54A

61/127

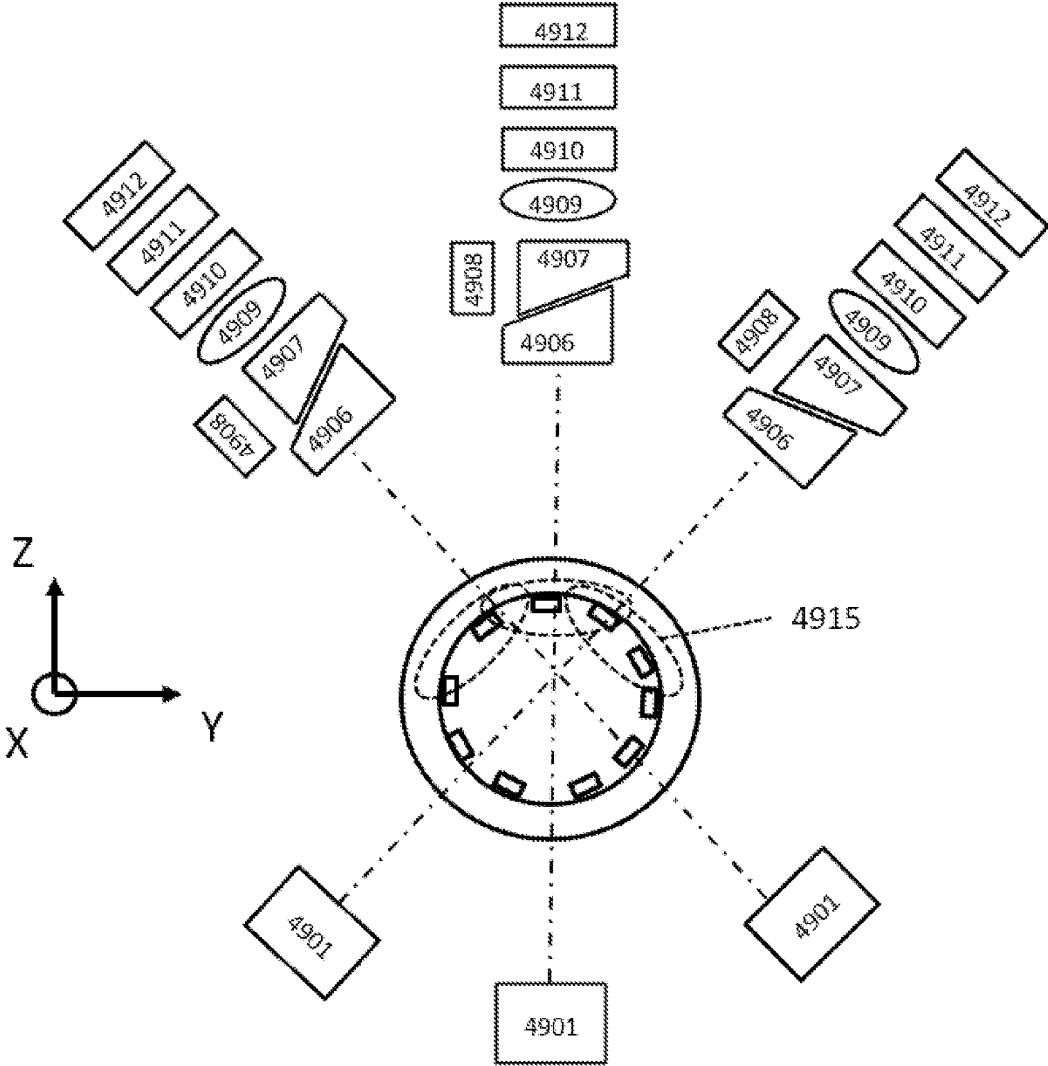


FIG. 54B

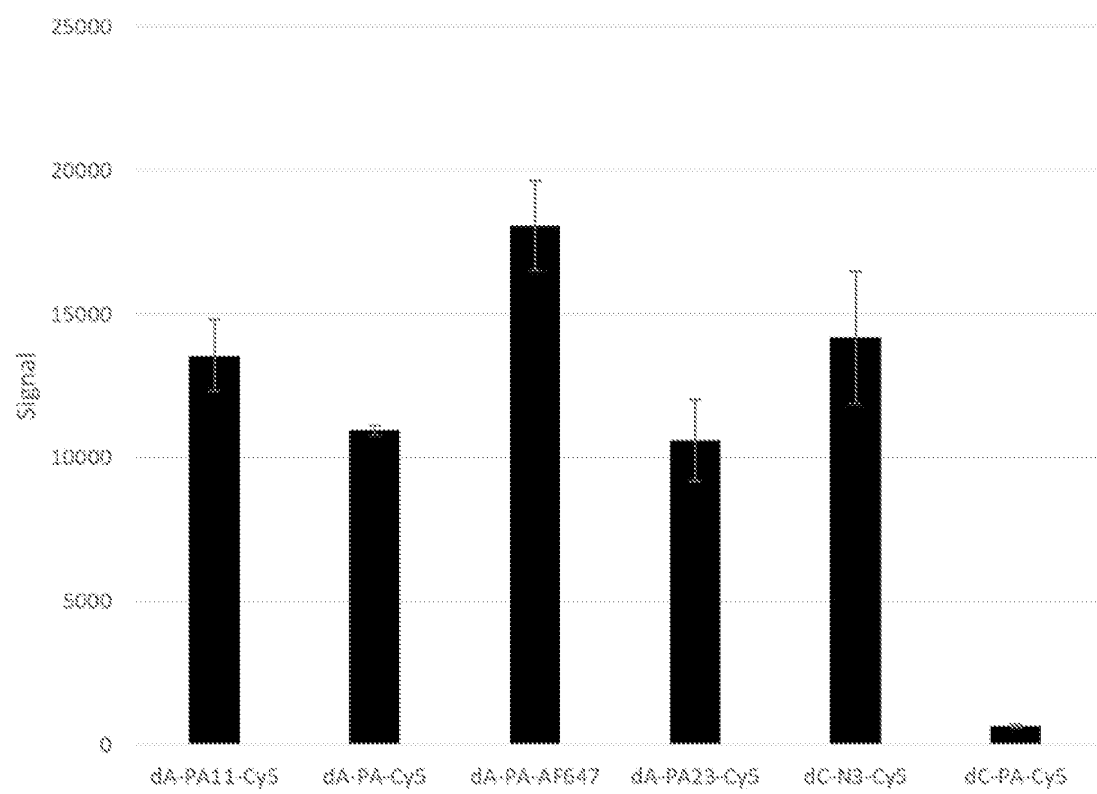


FIG. 55

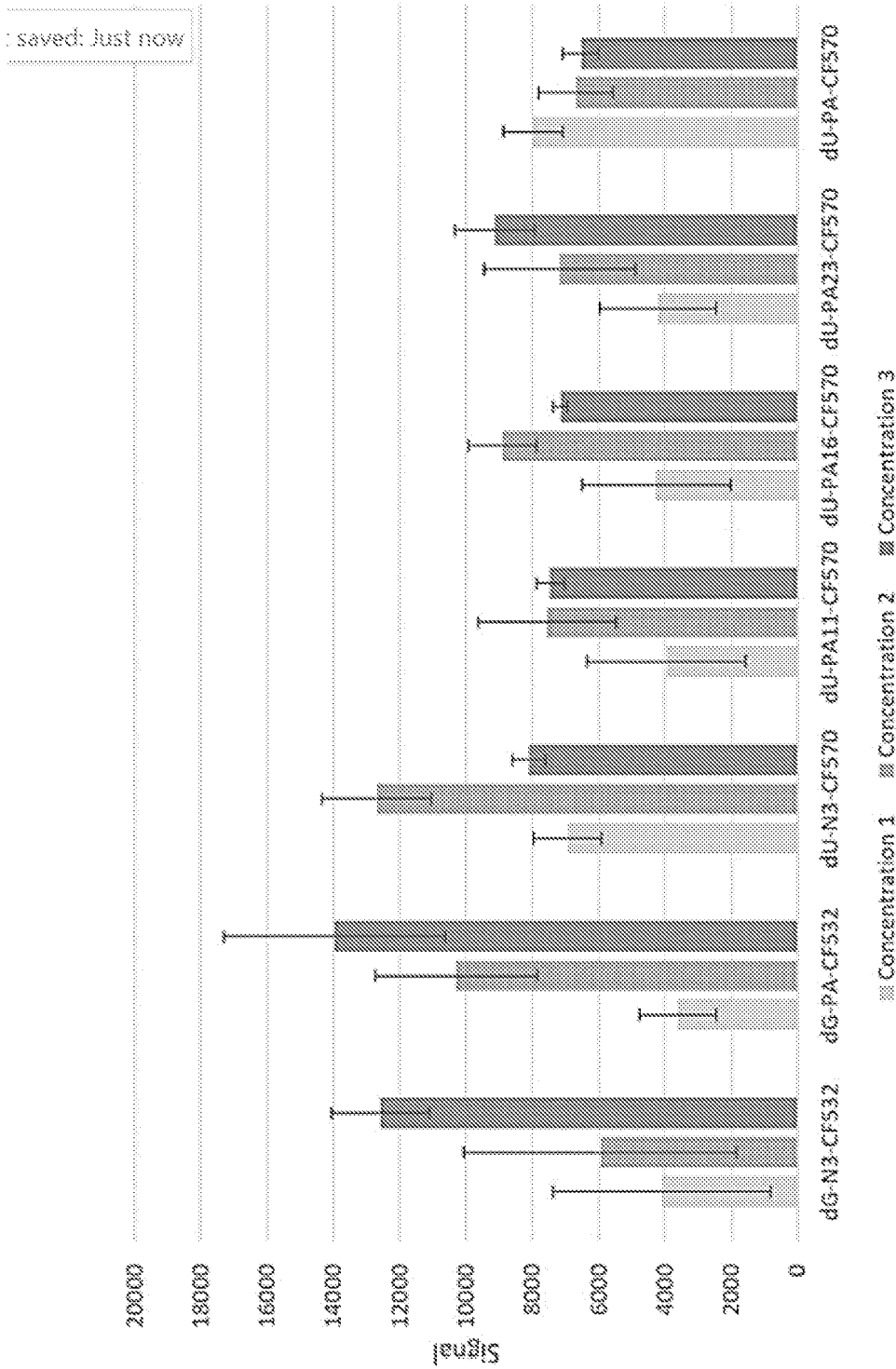


FIG. 56

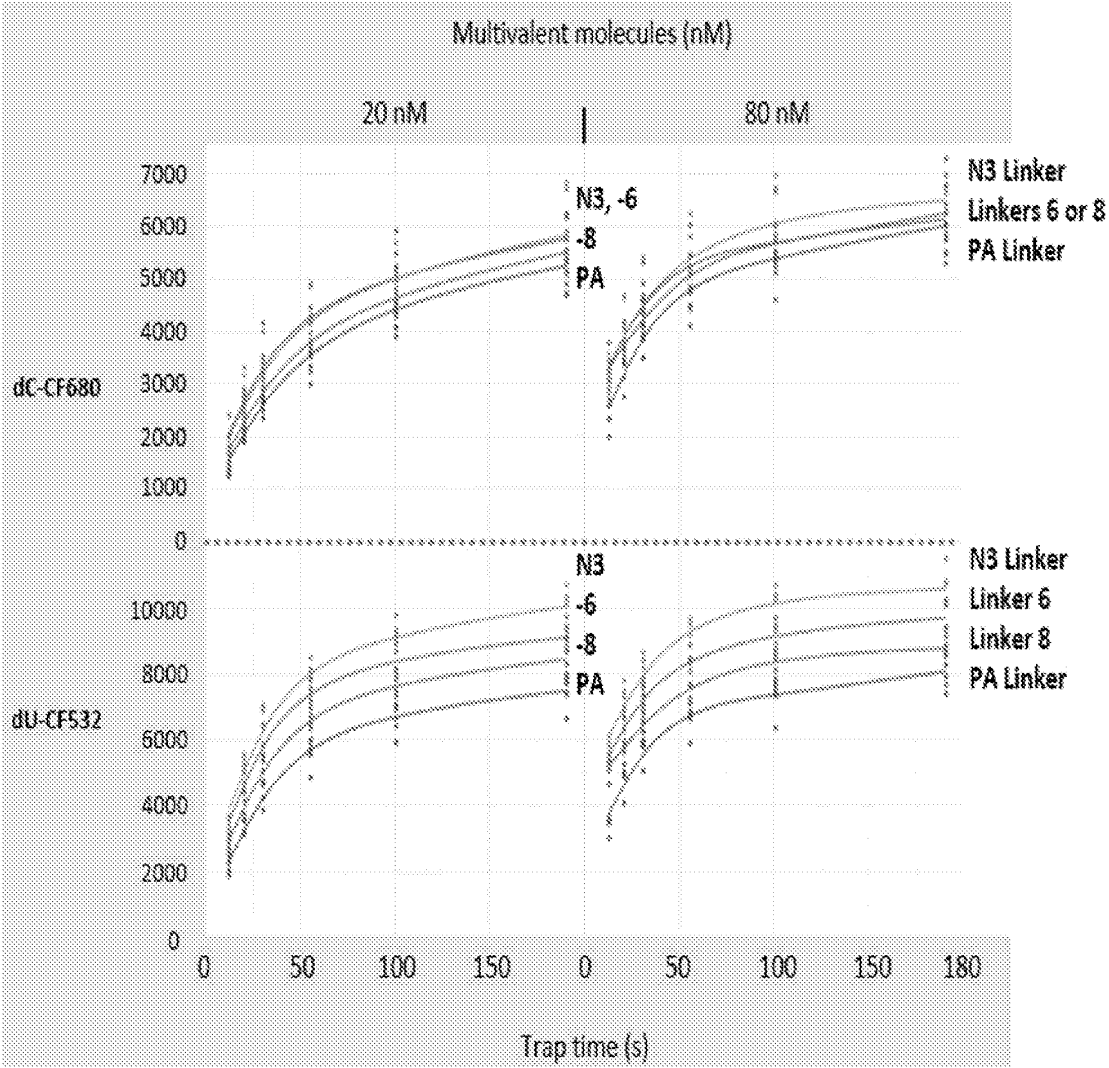


FIG. 57

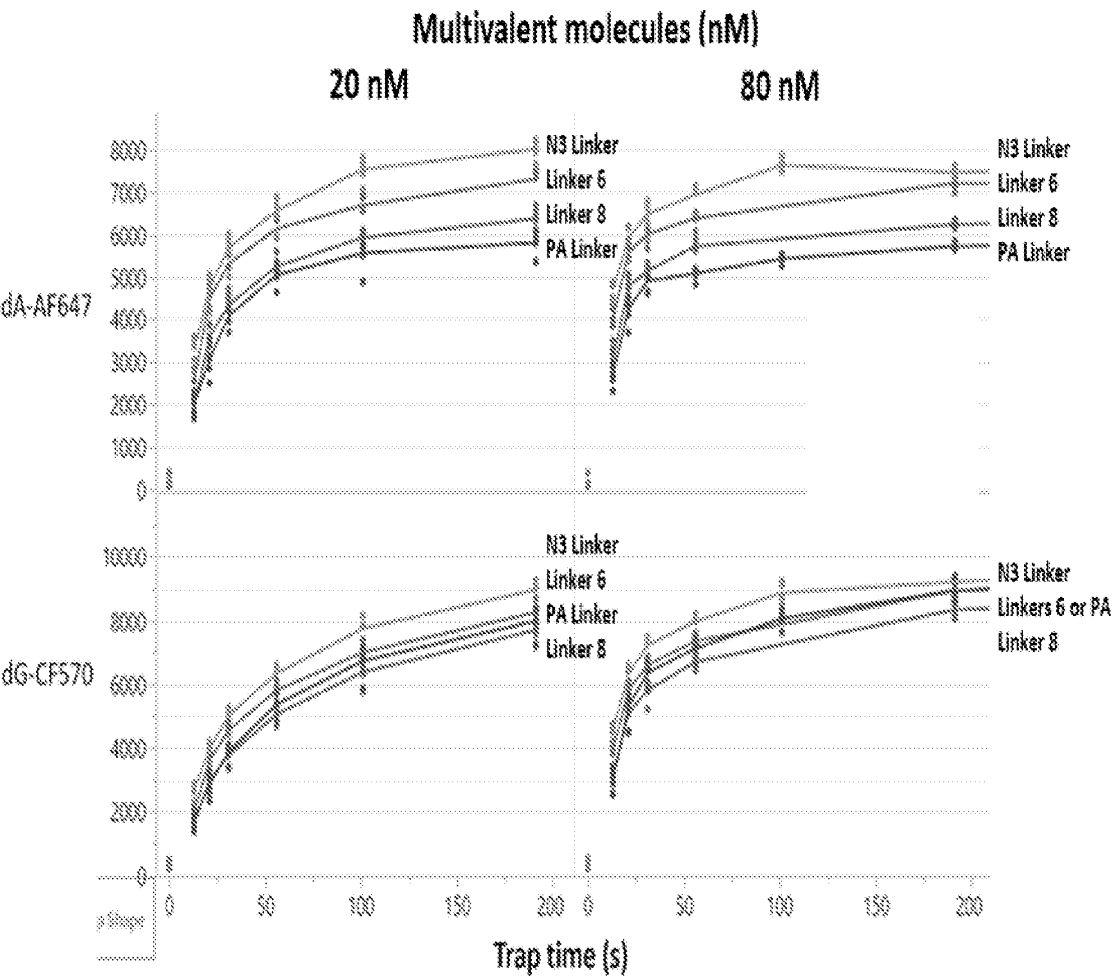


FIG. 58

66/127

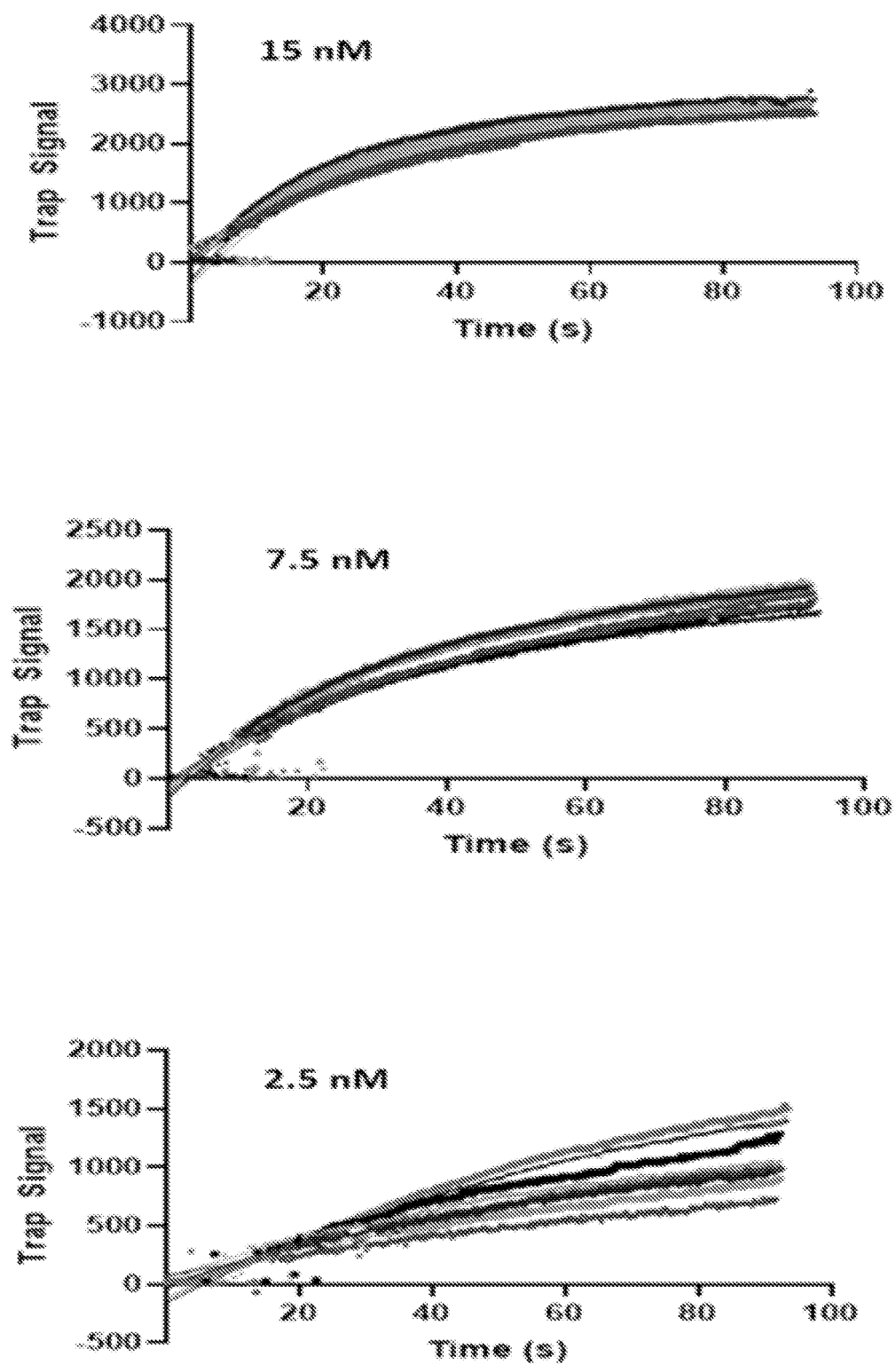


FIG. 59

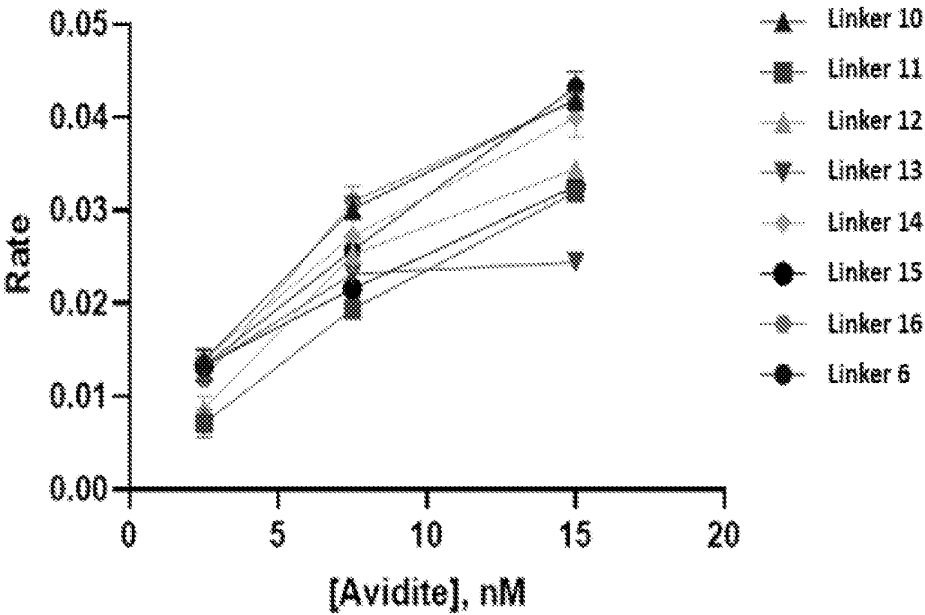


FIG. 60

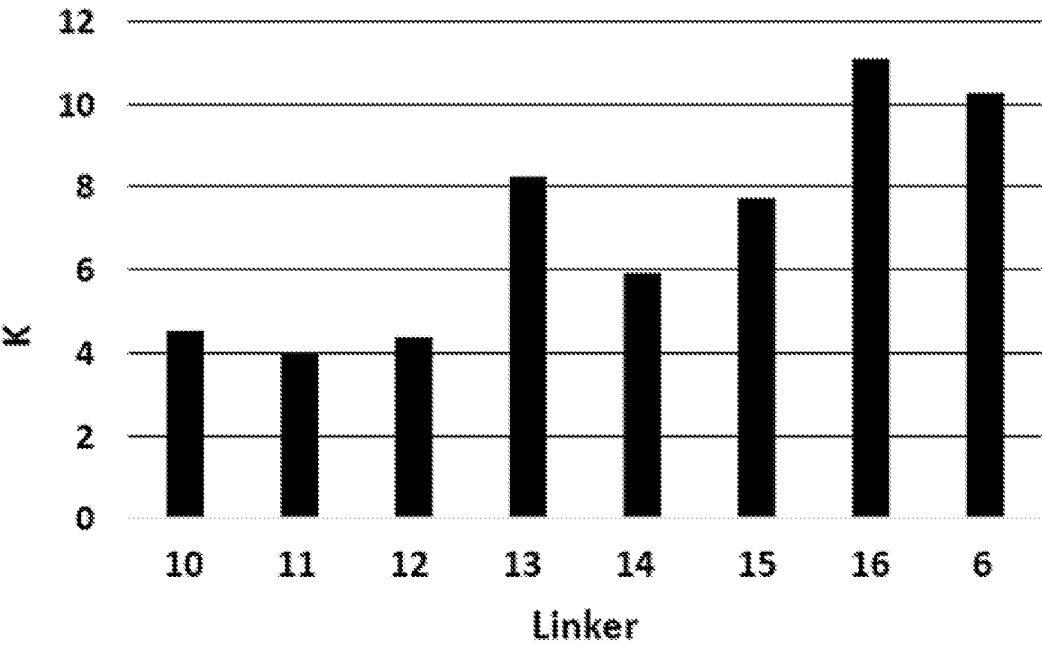


FIG. 61

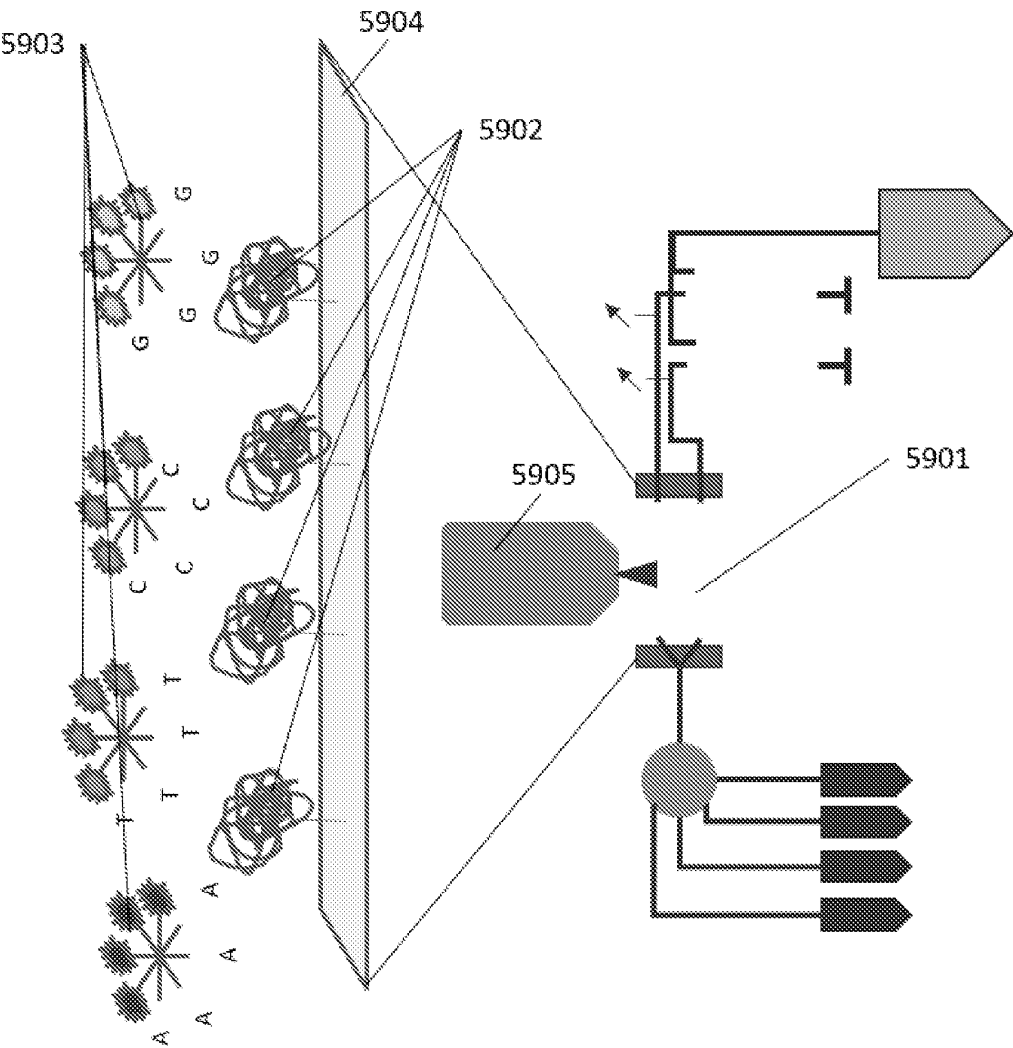


FIG. 62

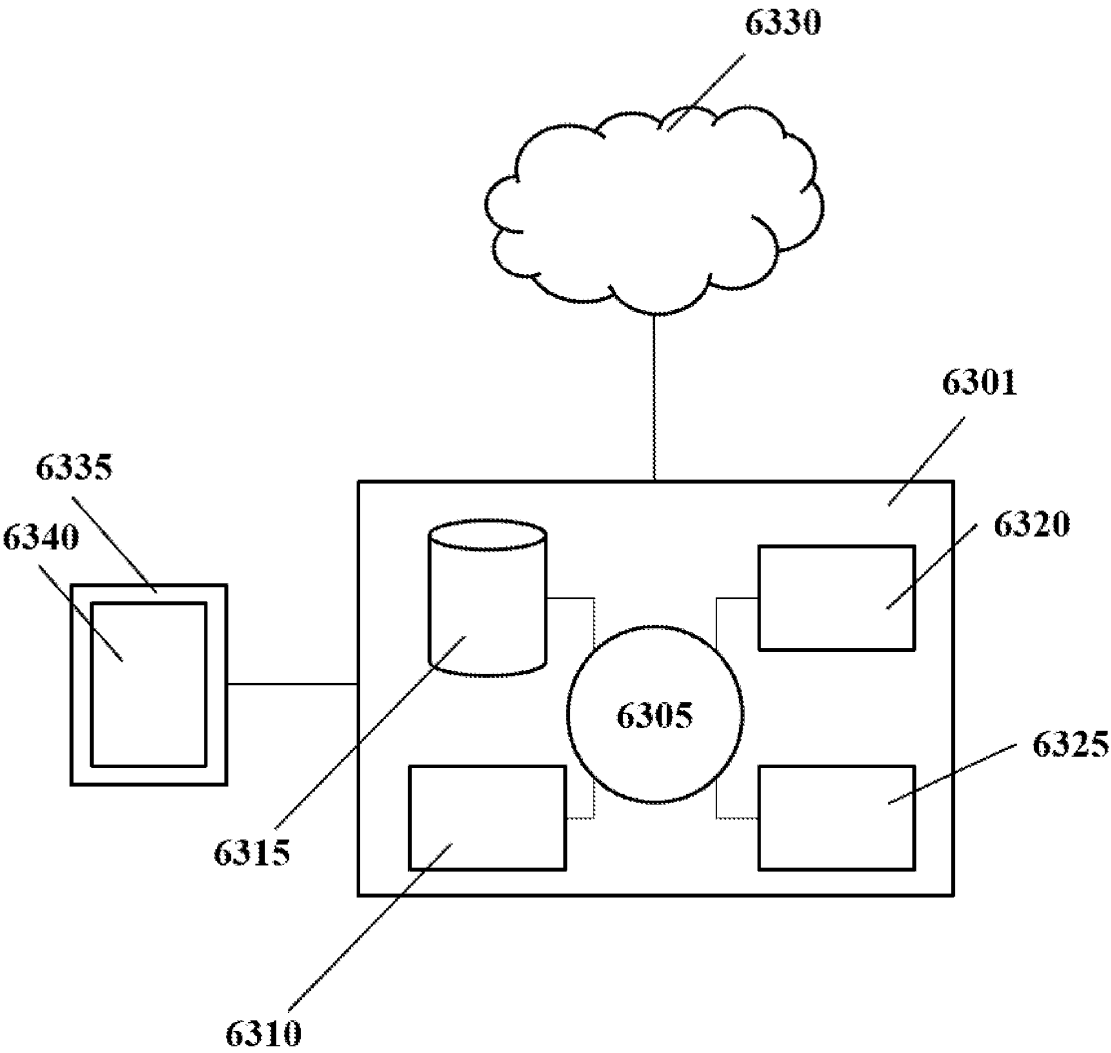


FIG. 63

70/127

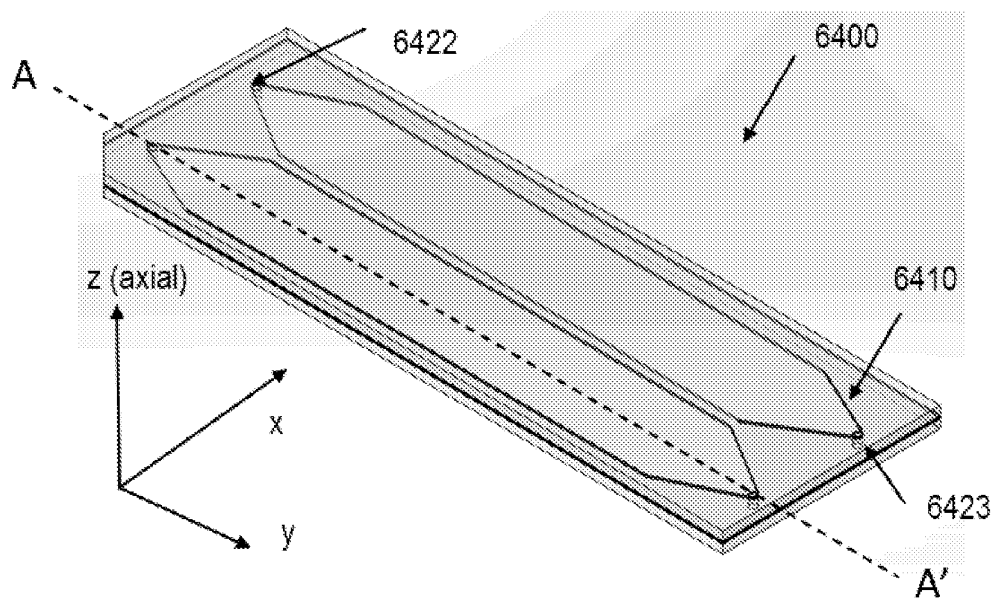


FIG. 64A

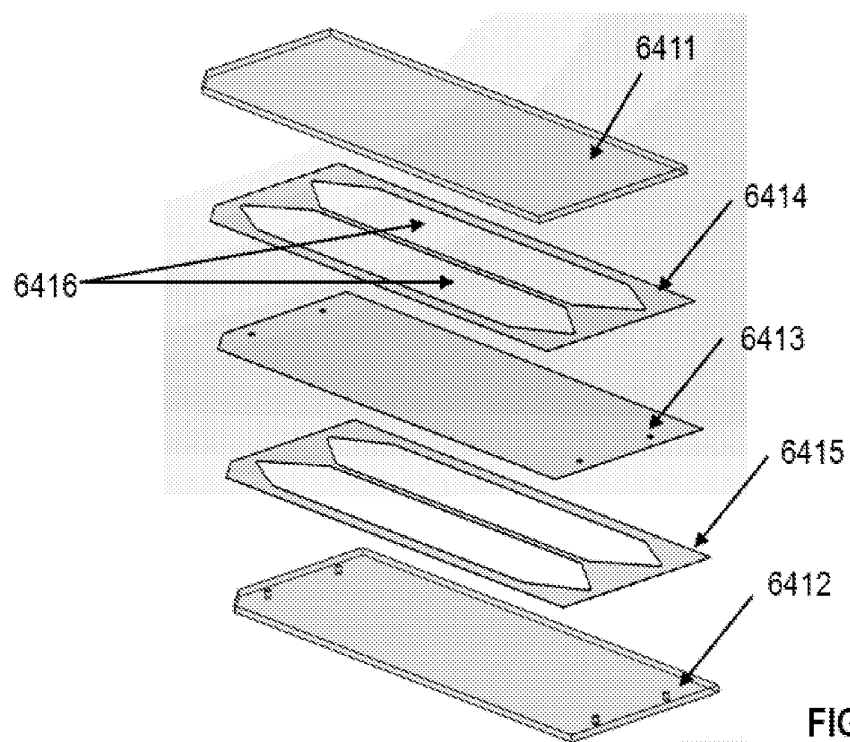


FIG. 64B

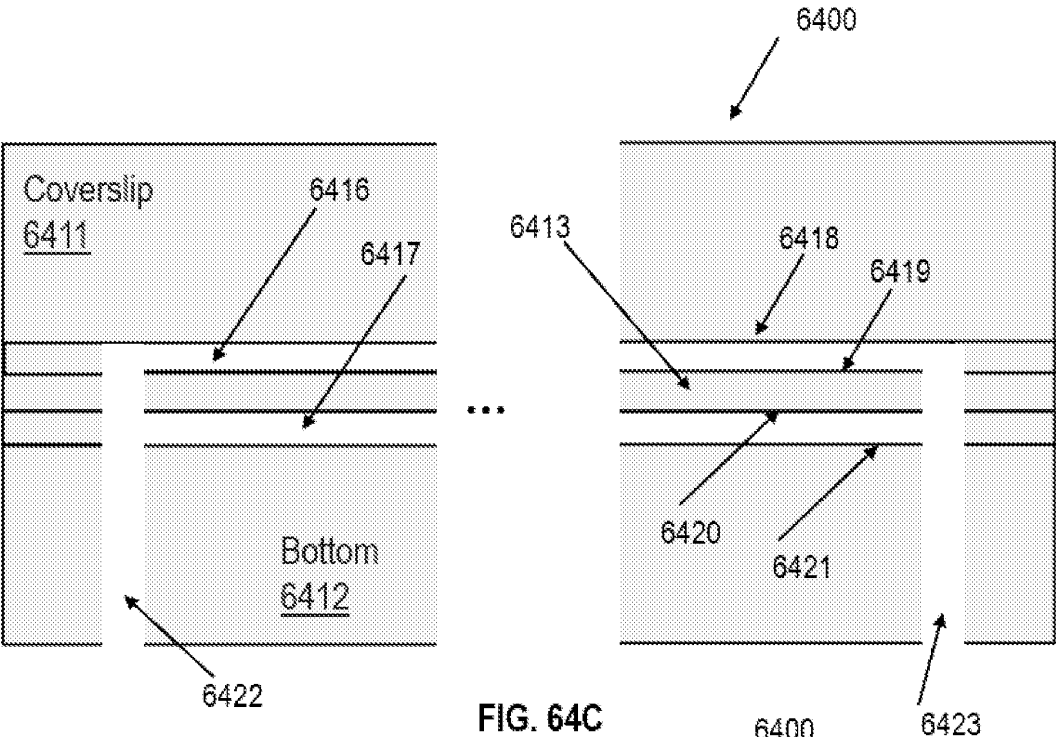


FIG. 64C

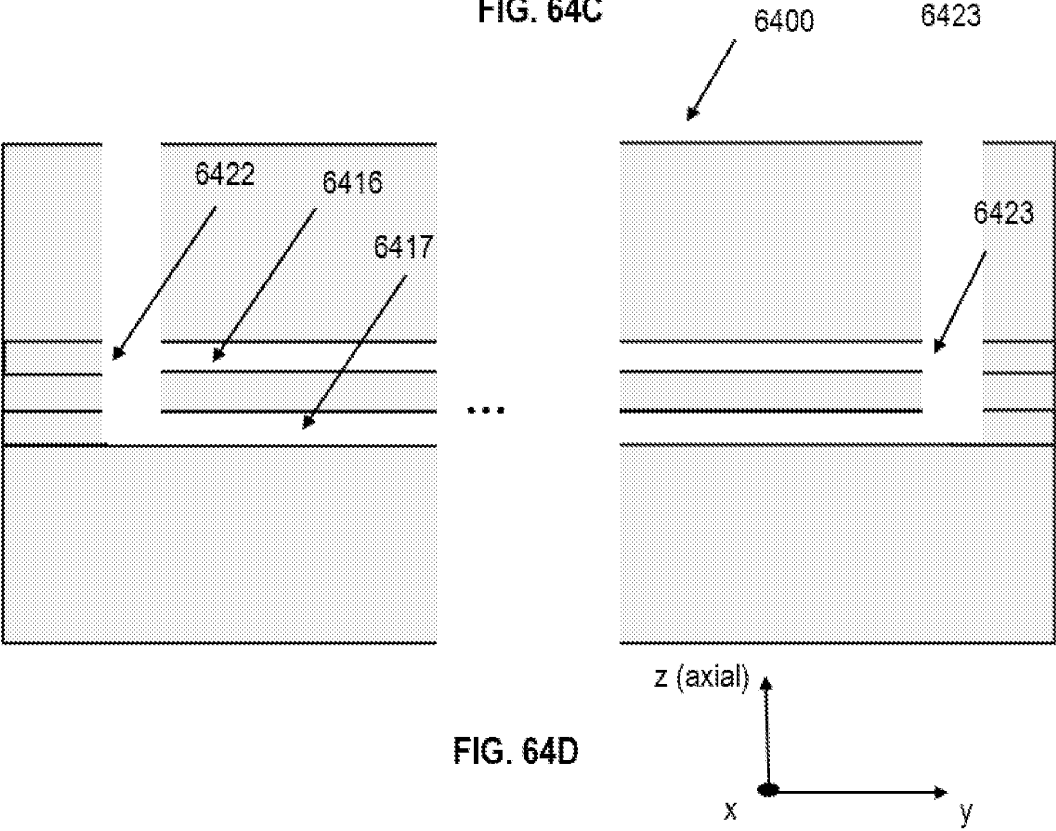


FIG. 64D

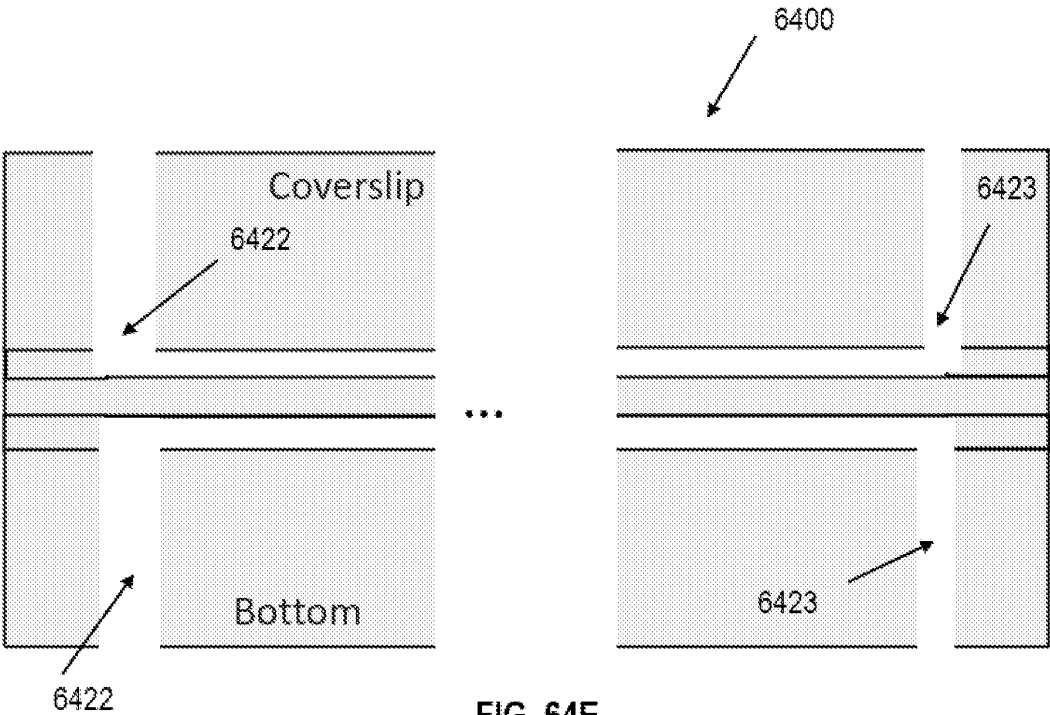


FIG. 64E

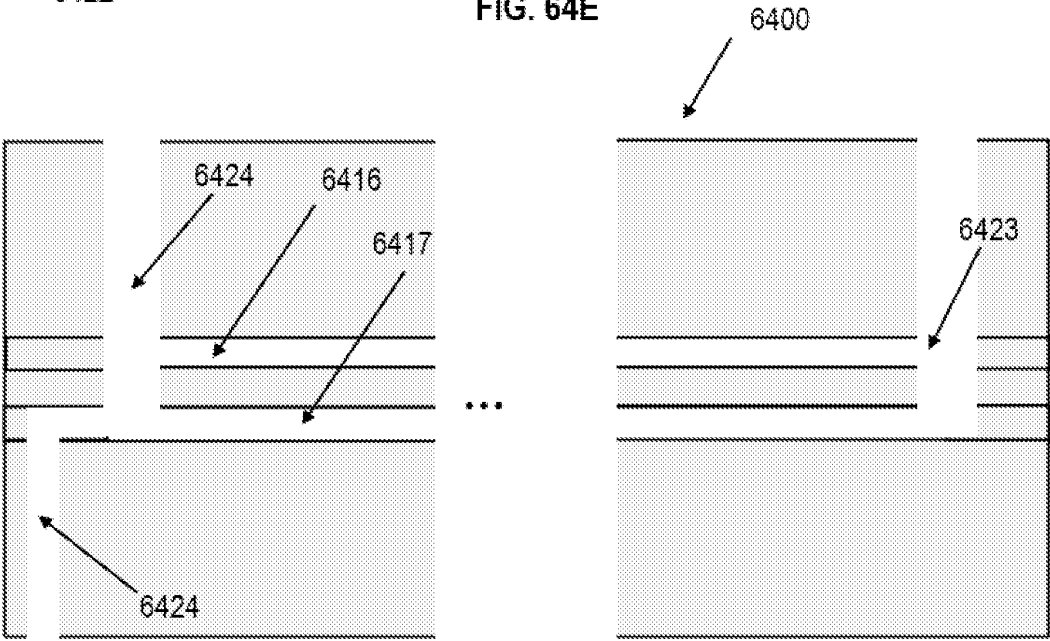


FIG. 64F

73/127

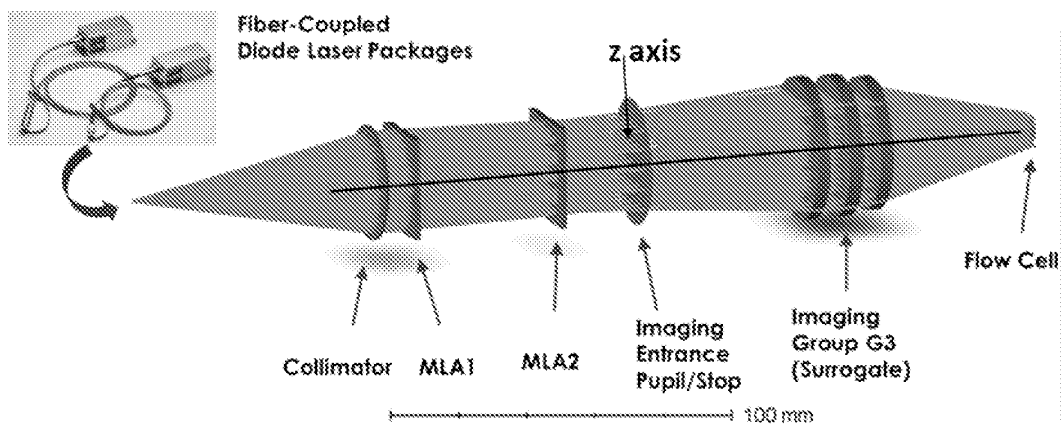


FIG. 65

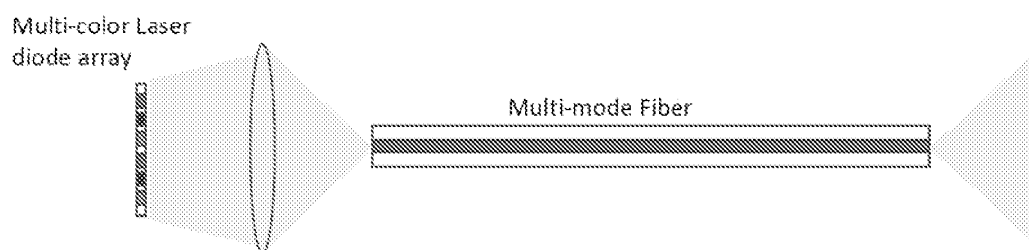


FIG. 66

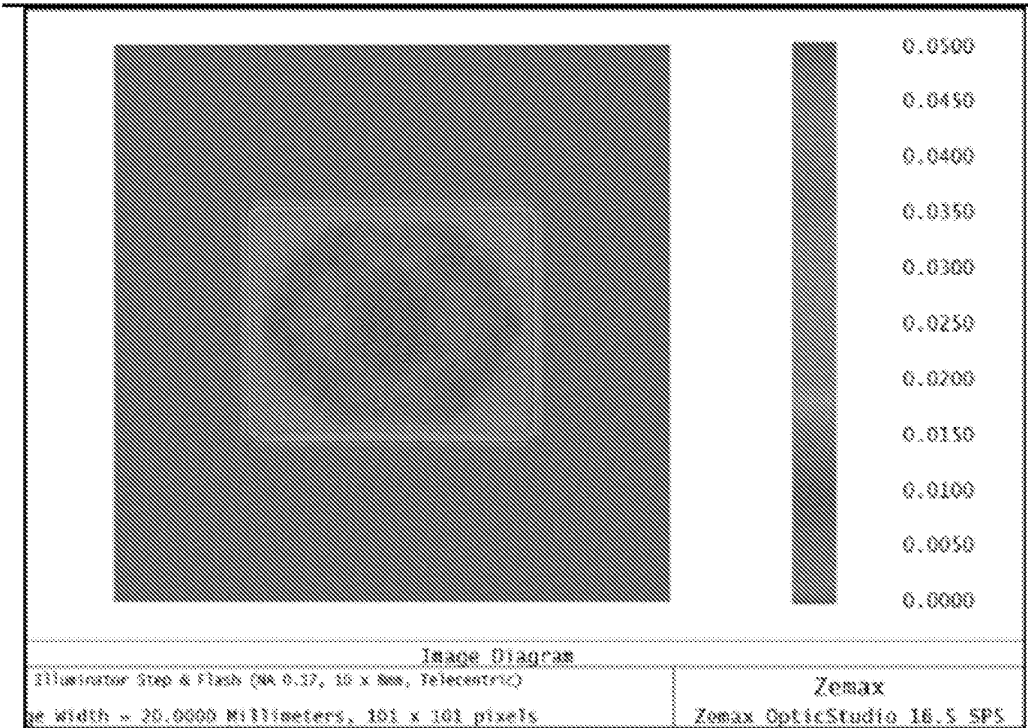


FIG. 67A

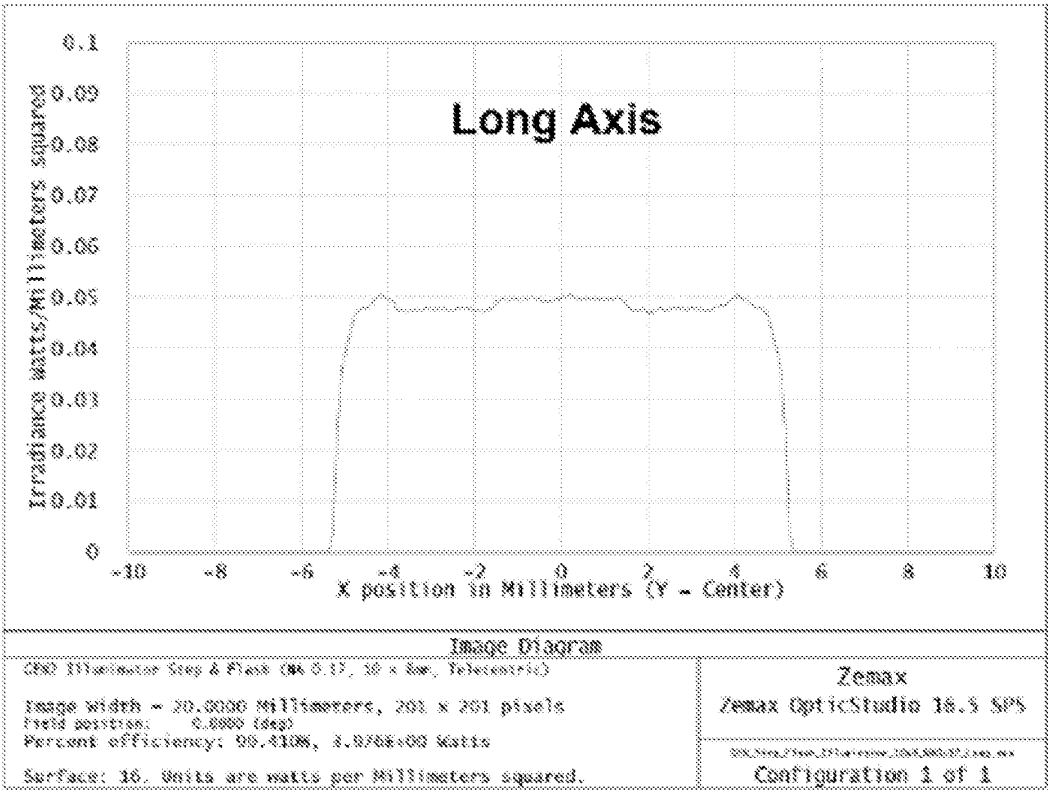


FIG. 67B

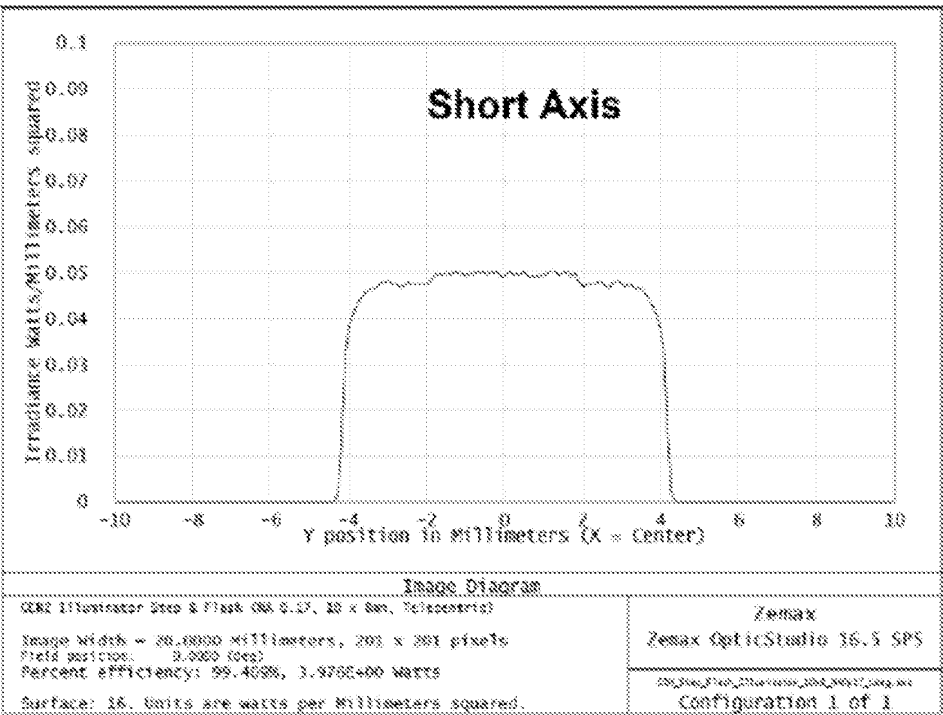


FIG. 67C

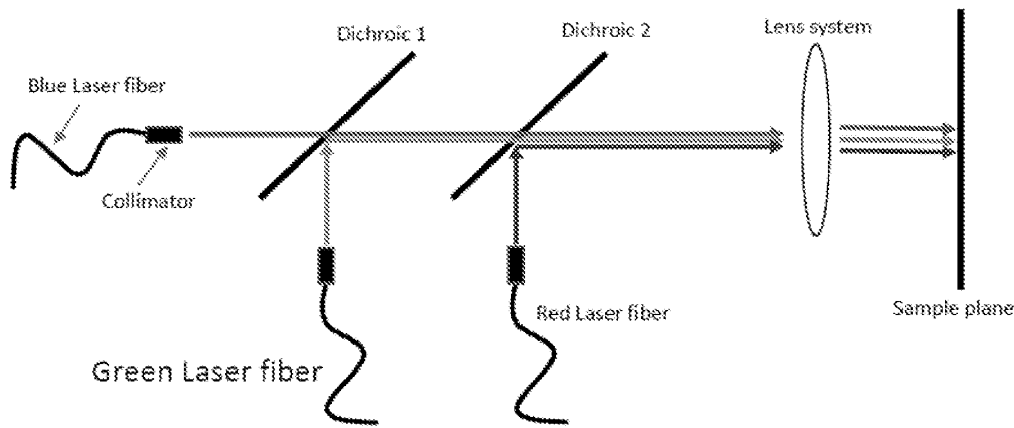


FIG. 68

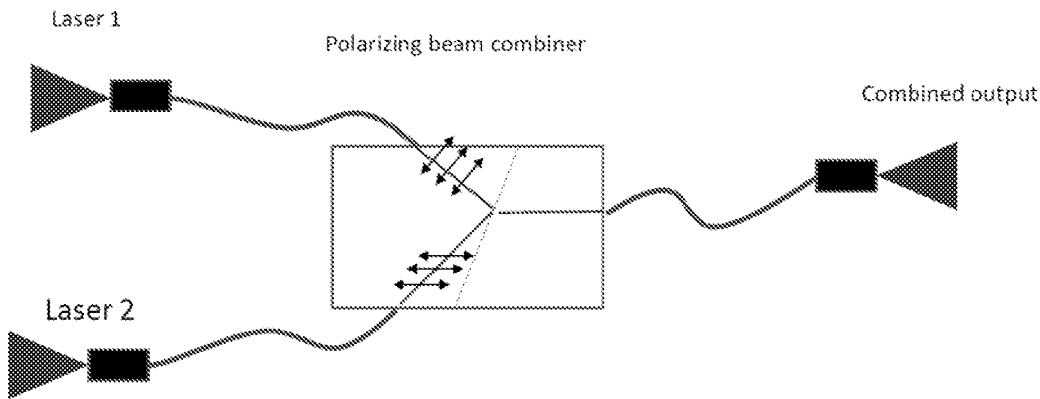


FIG. 69

Large Beam despeckler

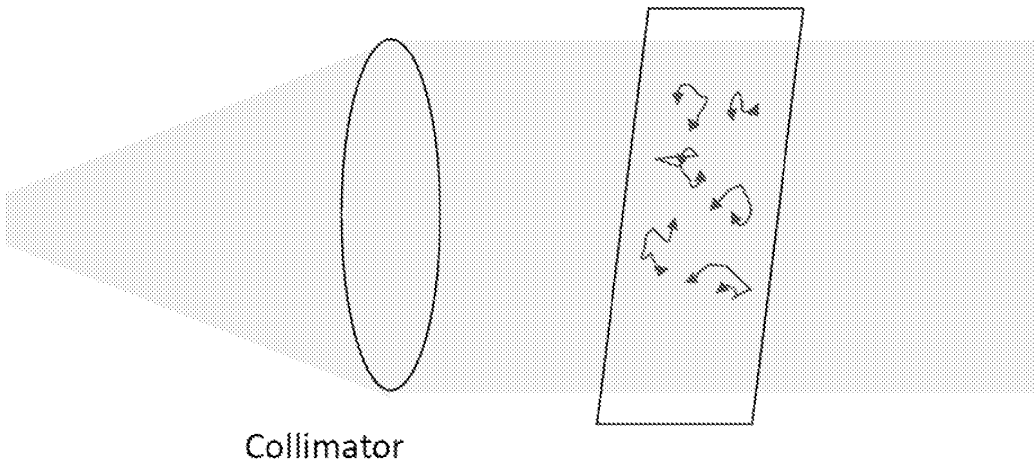


FIG. 70

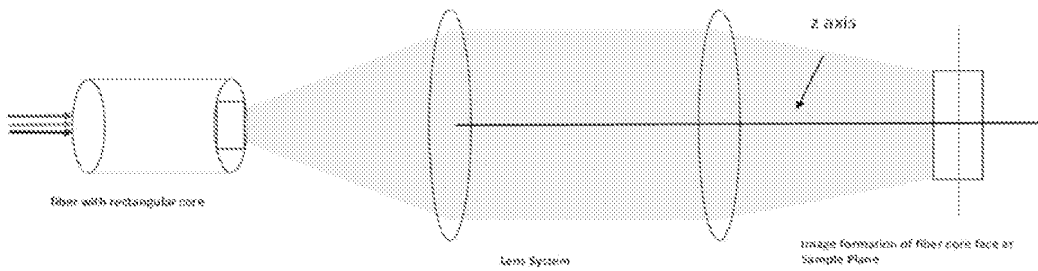


FIG. 71

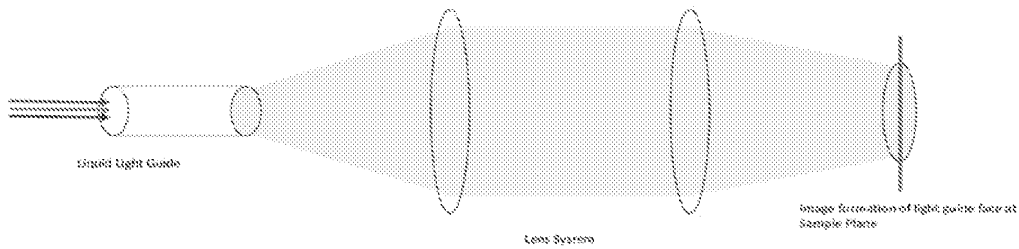


FIG. 72

79/127



FIG. 73A

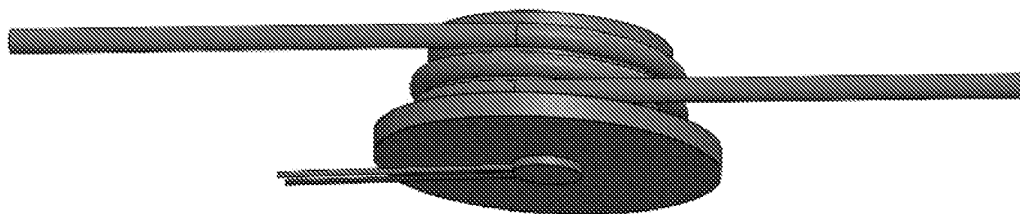


FIG. 73B

80/127



FIG. 74C



FIG. 73D

Table 1. Despeckler effect on the speckle noise

Optical fibers	Green		Red		# of trials
	speckle noise (%)	standard deviation (%)	speckle noise (%)	standard deviation (%)	
No winding, no vibration	6.53	0.17	6.32	0.33	8
winding, no vibration	6.85	0.25	6.46	0.19	8
No winding, vibration	5.60 (laid down)	0.33 (laid down)	5.7 (laid down)	0.29 (laid down)	10
	4.88 (standing)	0.22 (standing)	4.66 (stand)	0.18 (standing)	7
winding, vibration	4.49 (laid down)	0.41 (laid down)	4.48 (laid down)	0.59 (laid down)	7
	3.86 (standing)	0.37 (standing)	3.74 (standing)	0.49 (standing)	16

FIG. 74

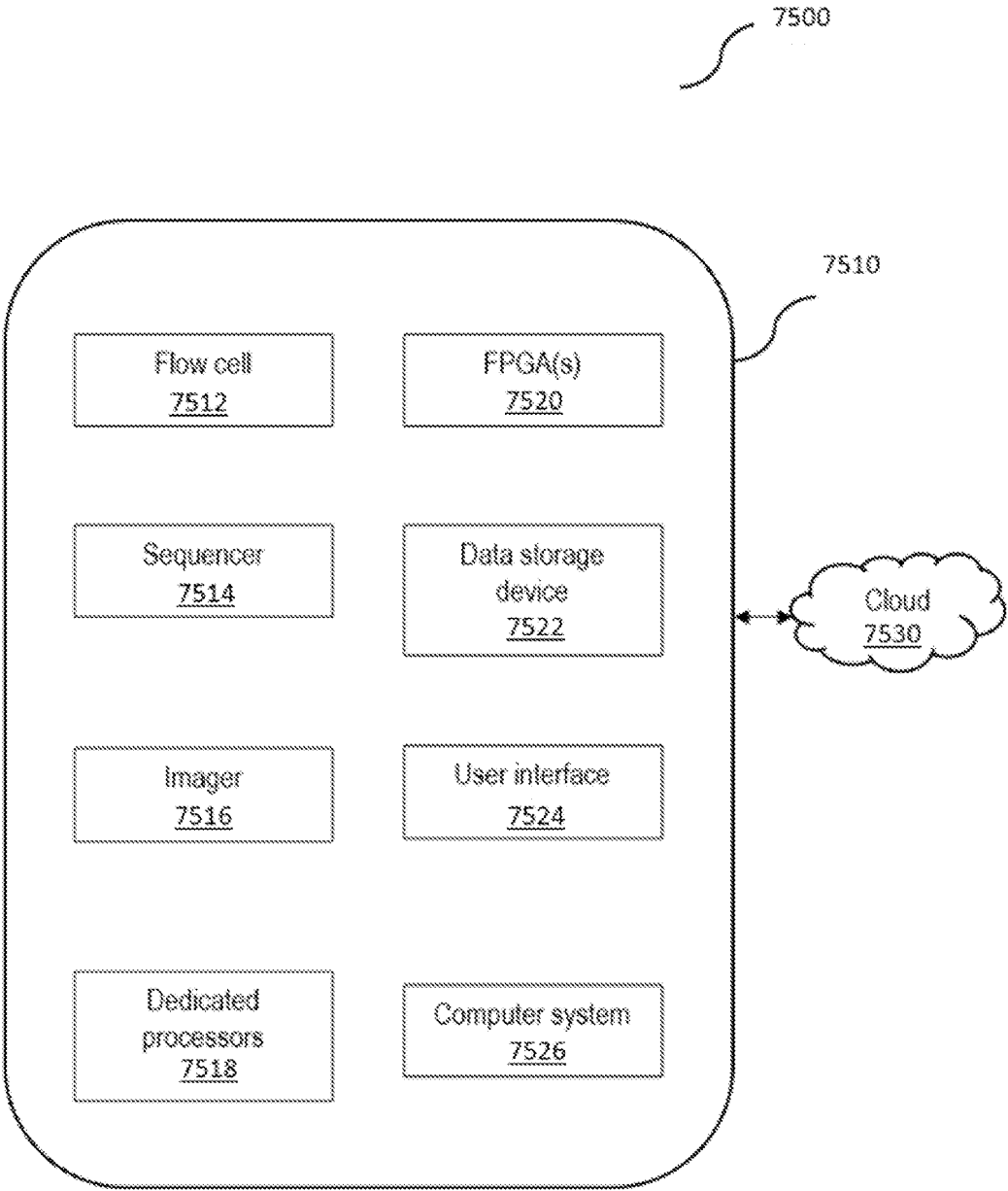


FIG. 75

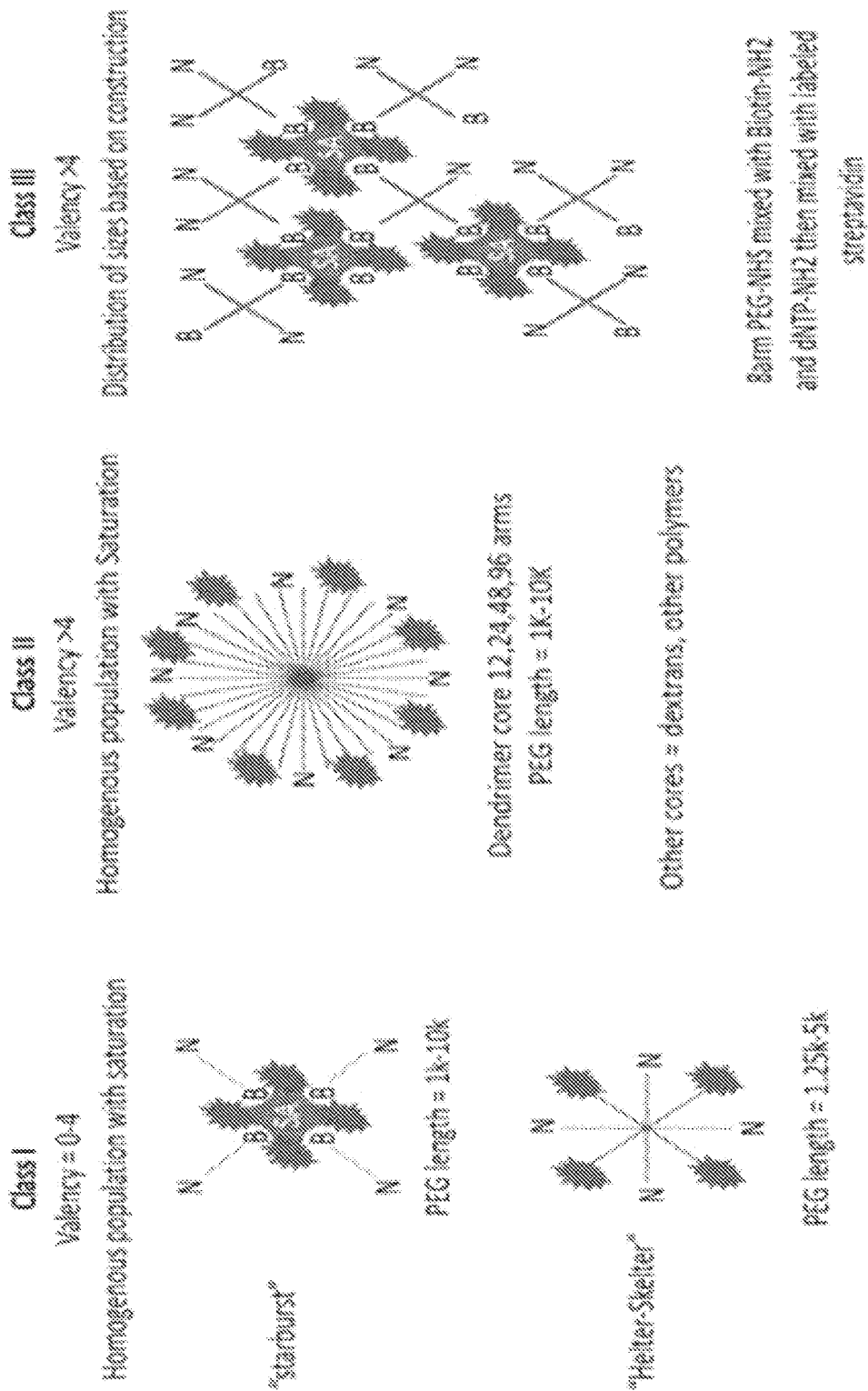
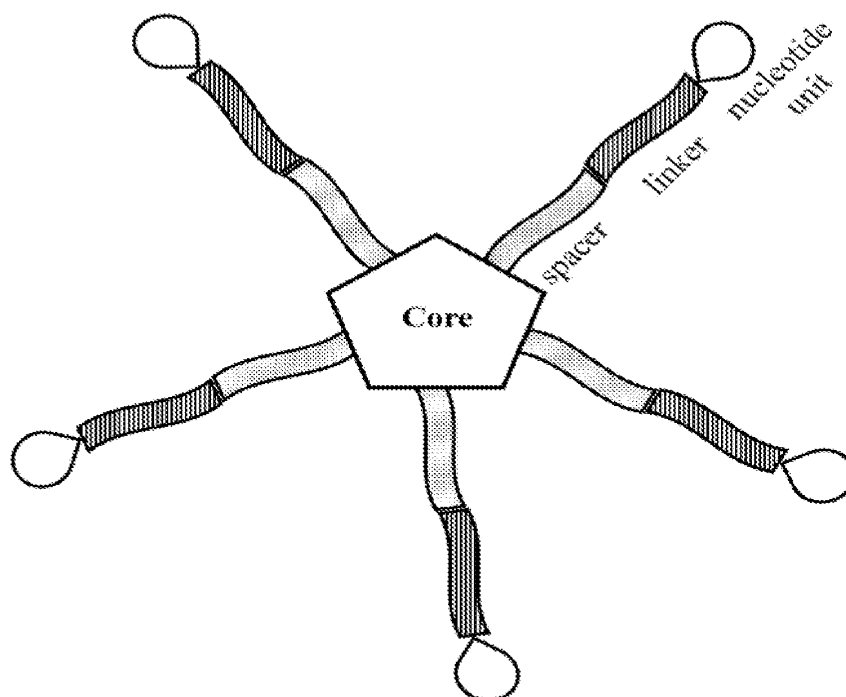
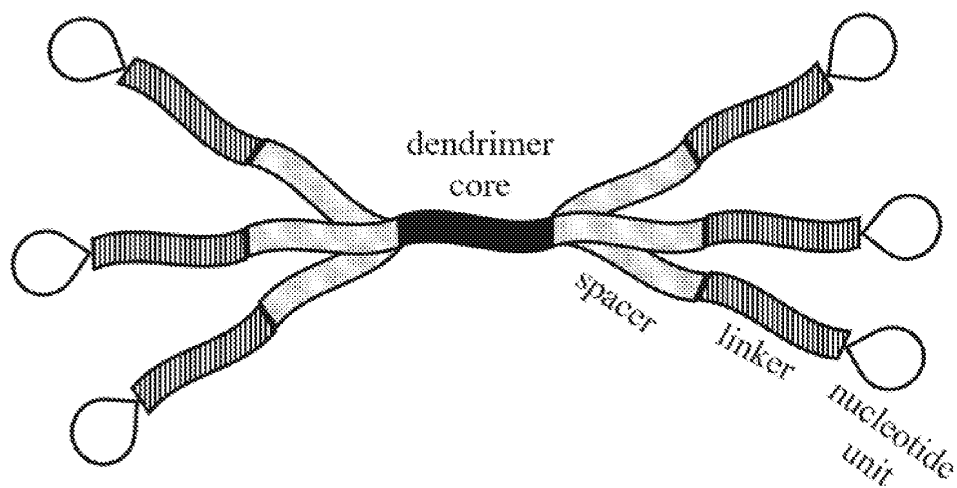
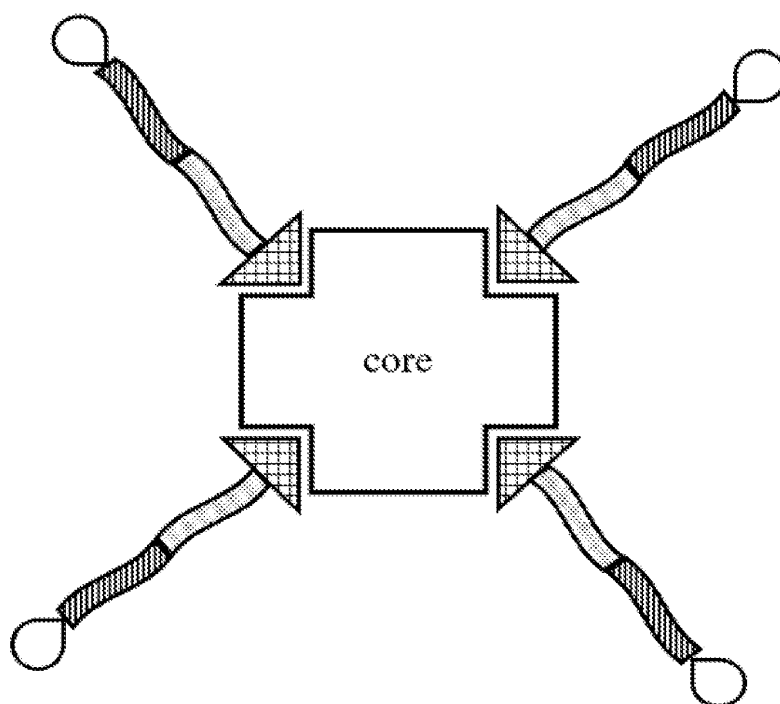
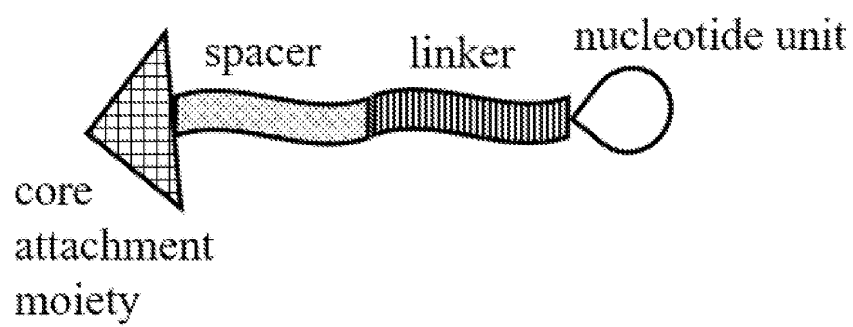


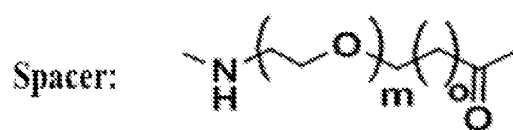
FIG. 76

**FIG. 77****FIG. 78**

85/127

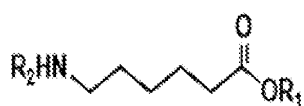
**FIG. 79****FIG. 80**

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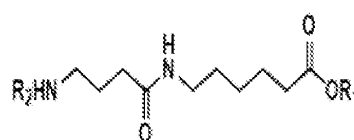


Linkers:

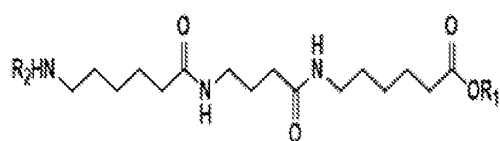
11 atom Linker:



16 atom Linker:



23 atom Linker:



N3 Linker:

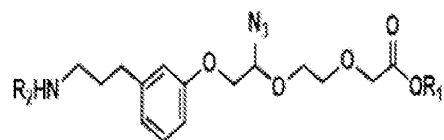


FIG. 81

87/127

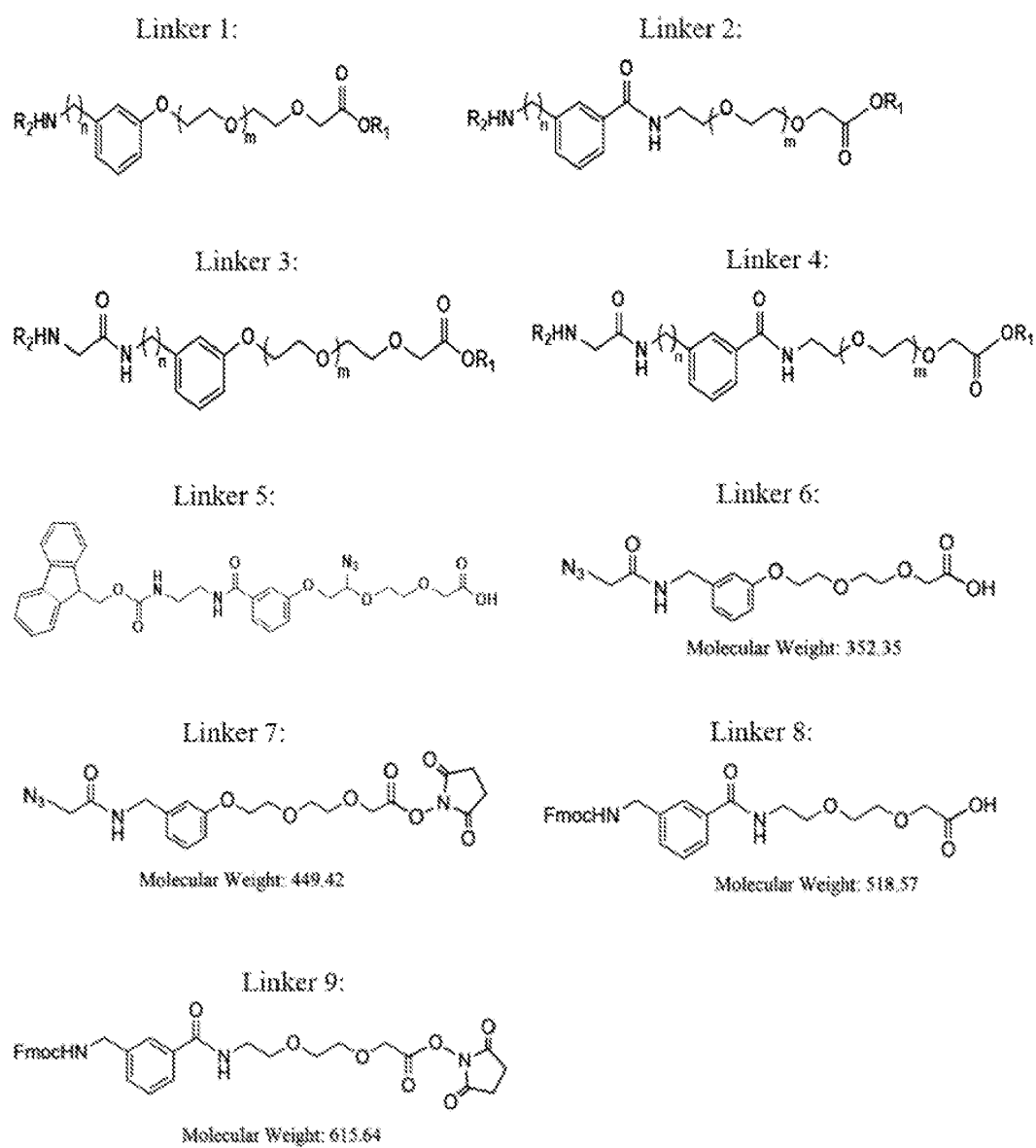
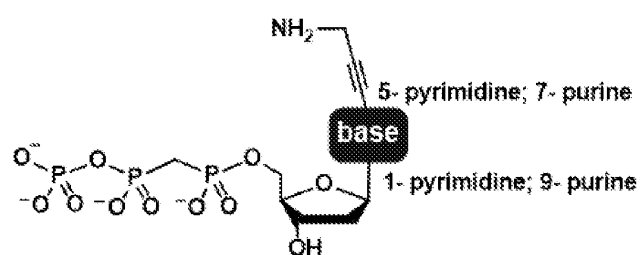
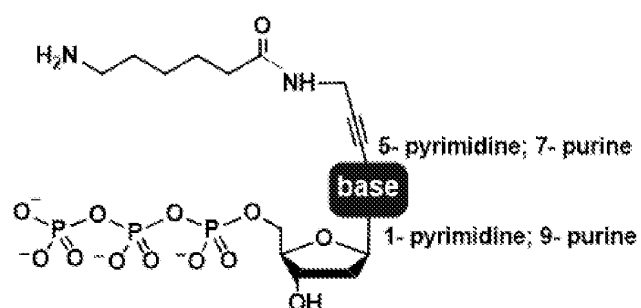
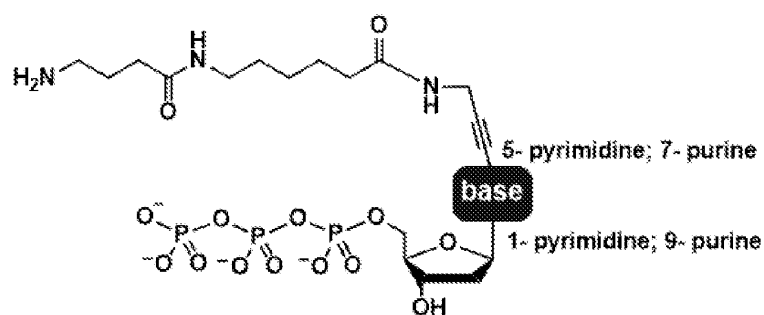
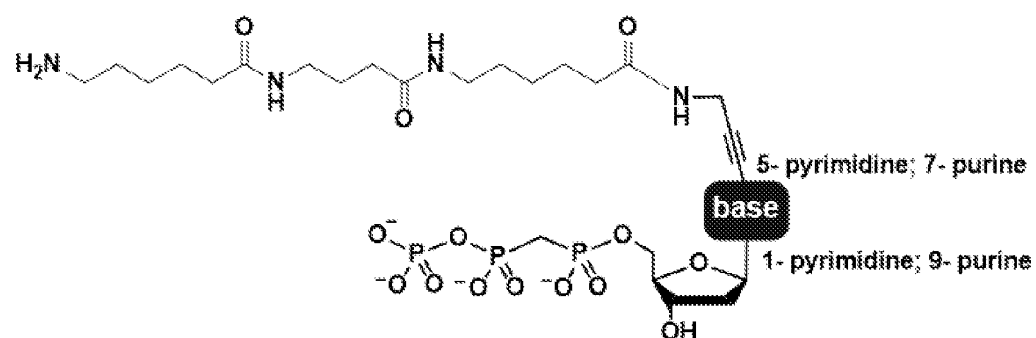
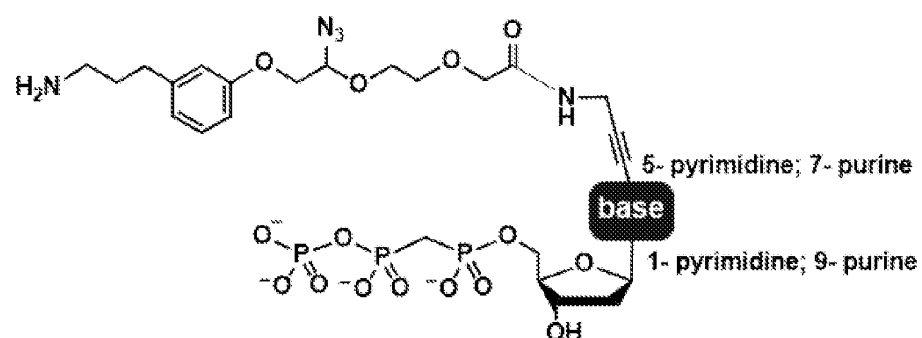
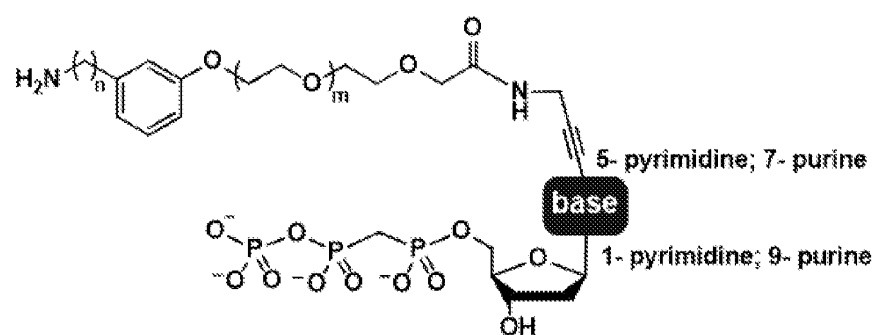


FIG. 82

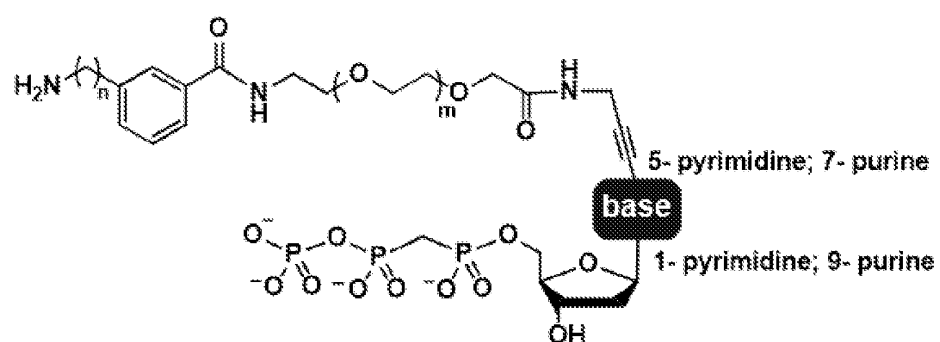
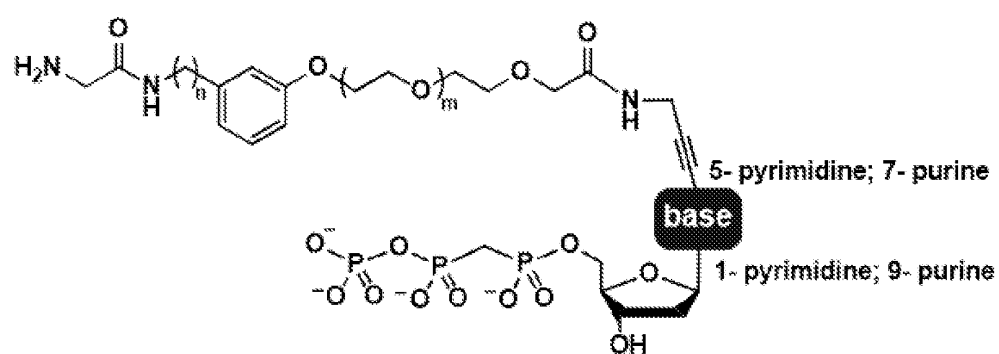
88/127

dNTP-PA-NH₂:**dNTP-PA-11 Atom Linker-NH₂:****dNTP-PA-16 Atom Linker-NH₂:****FIG. 83**

89/127

dNTP-PA-23 Atom Linker-NH₂:**dNTP-PA-N3 Linker-NH₂:****dNTP-PA-Linker 1-NH₂:****FIG. 84**

90/127

dNTP-PA-Linker 2-NH₂:**dNTP-PA-Linker 3-NH₂:****FIG. 85**

91/127

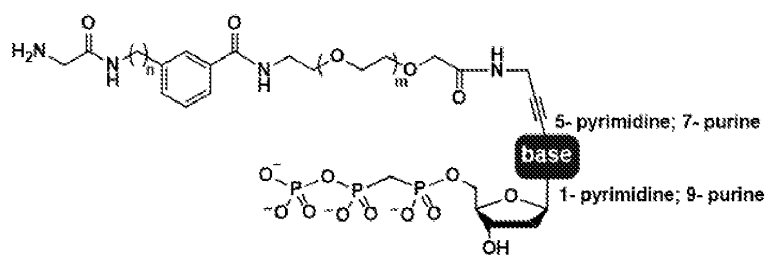
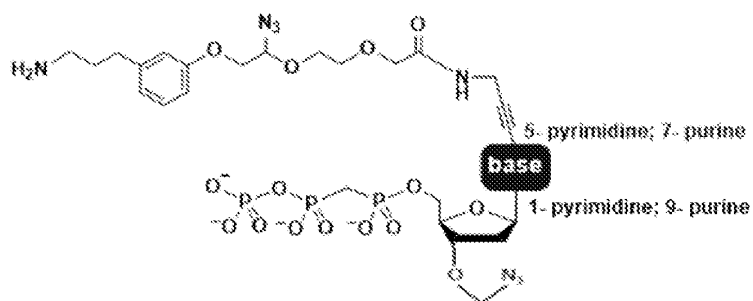
dNTP-PA-Linker 4-NH₂:dNTP-PA-N3 Linker-NH₂:

FIG. 86

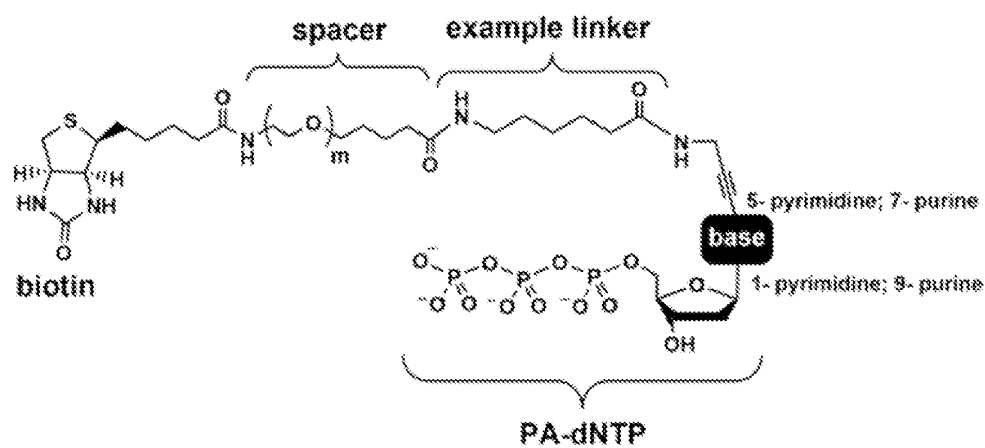


FIG. 87

92/127

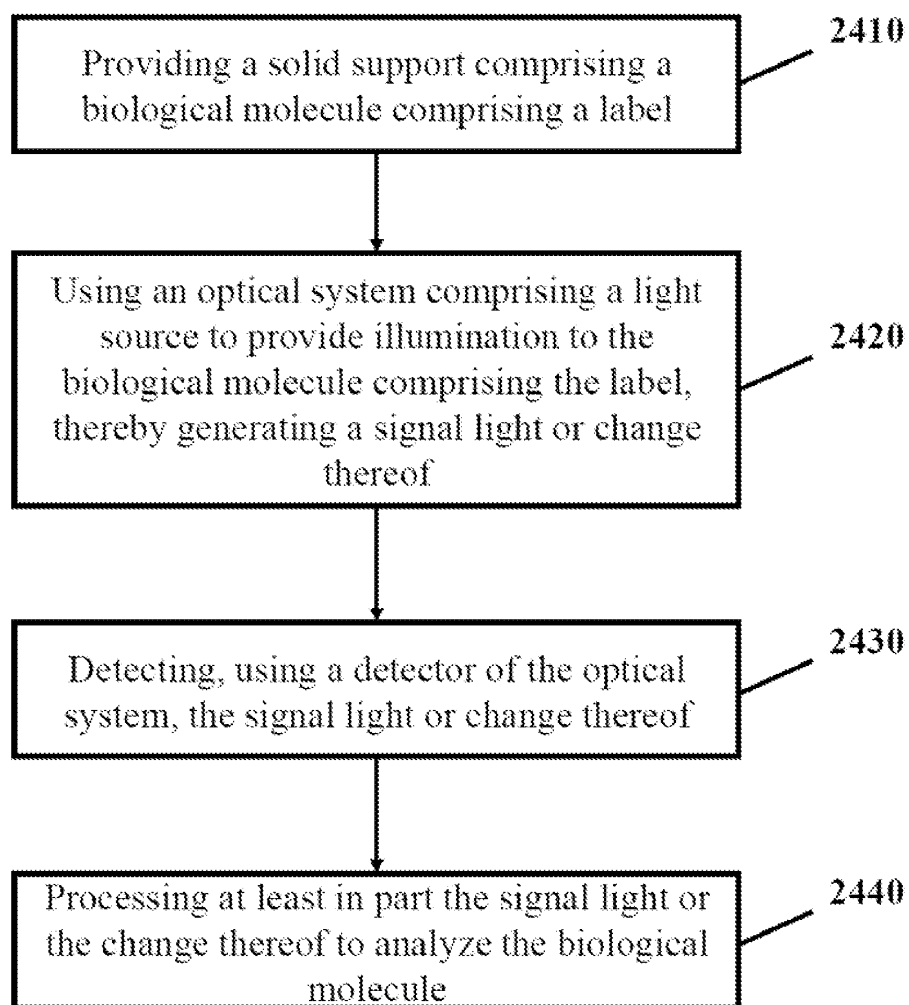
2400

FIG. 88

93/127

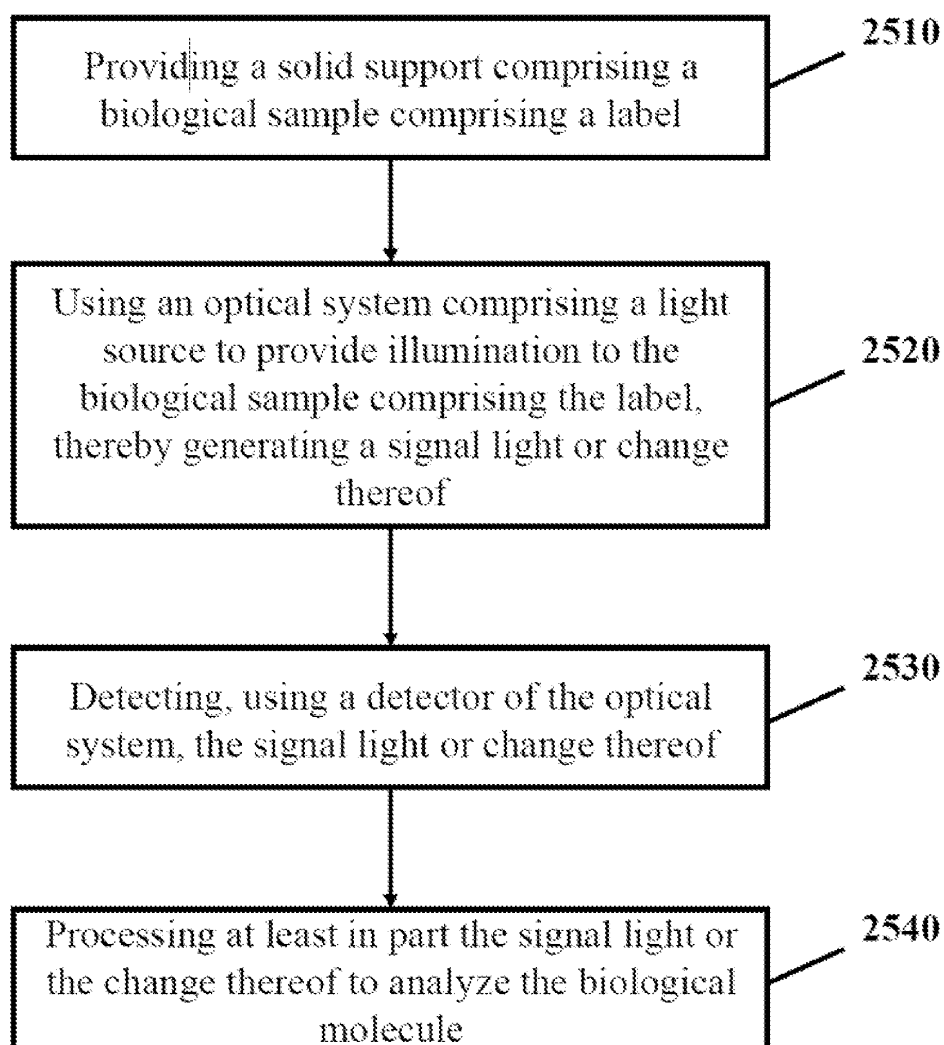
2500

FIG. 89

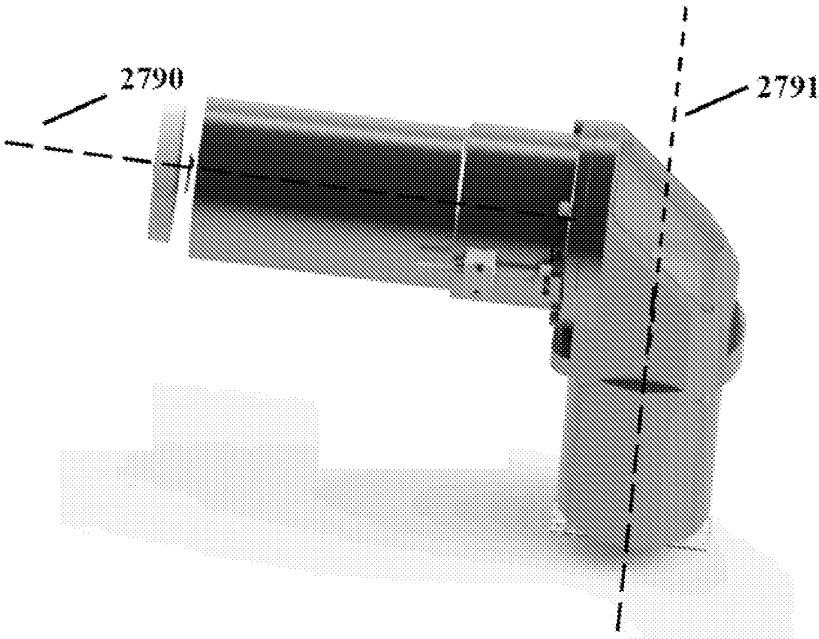


FIG. 90

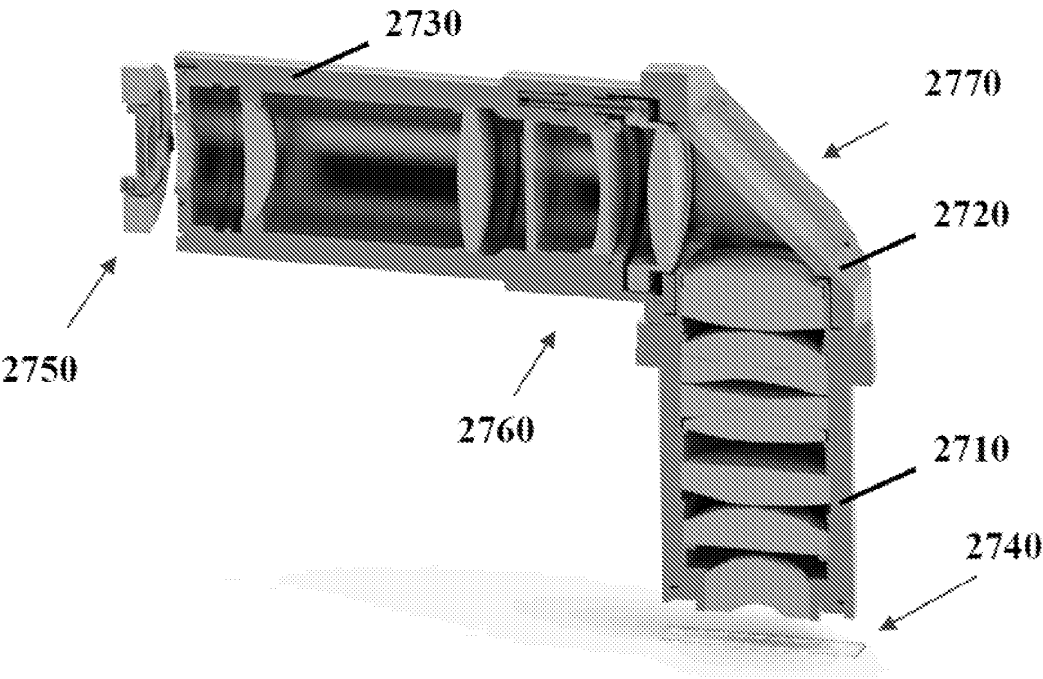


FIG. 91

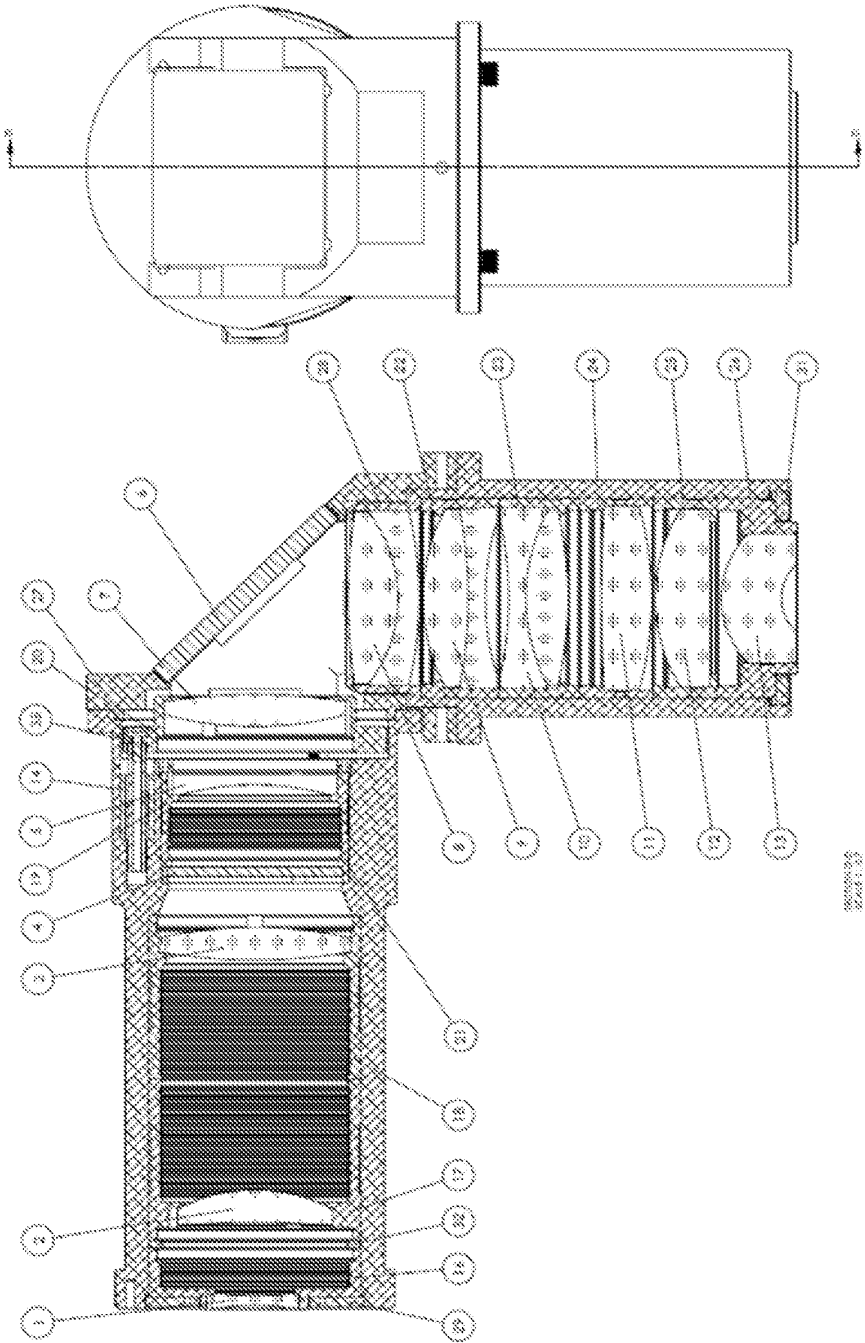
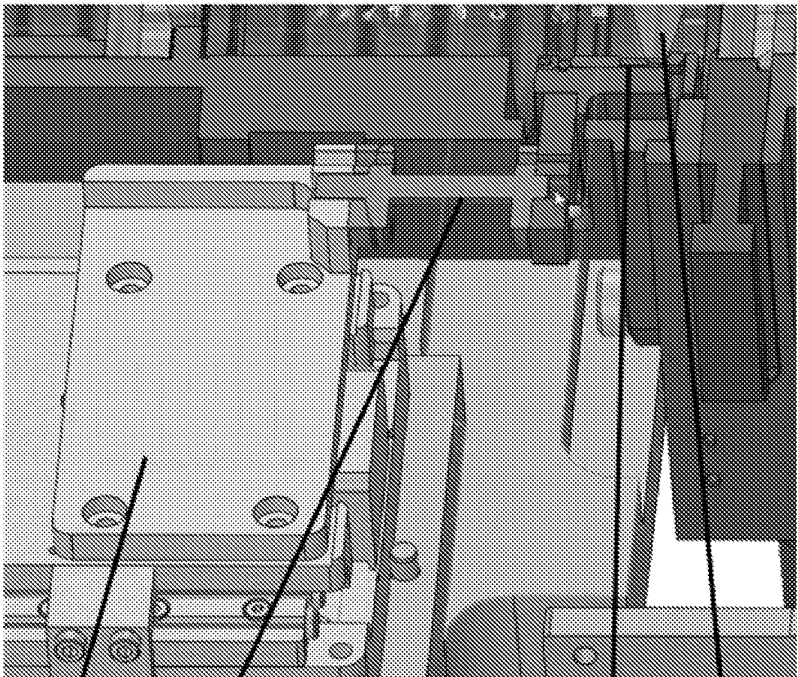


FIG. 92



2901 2902 FIG. 93A

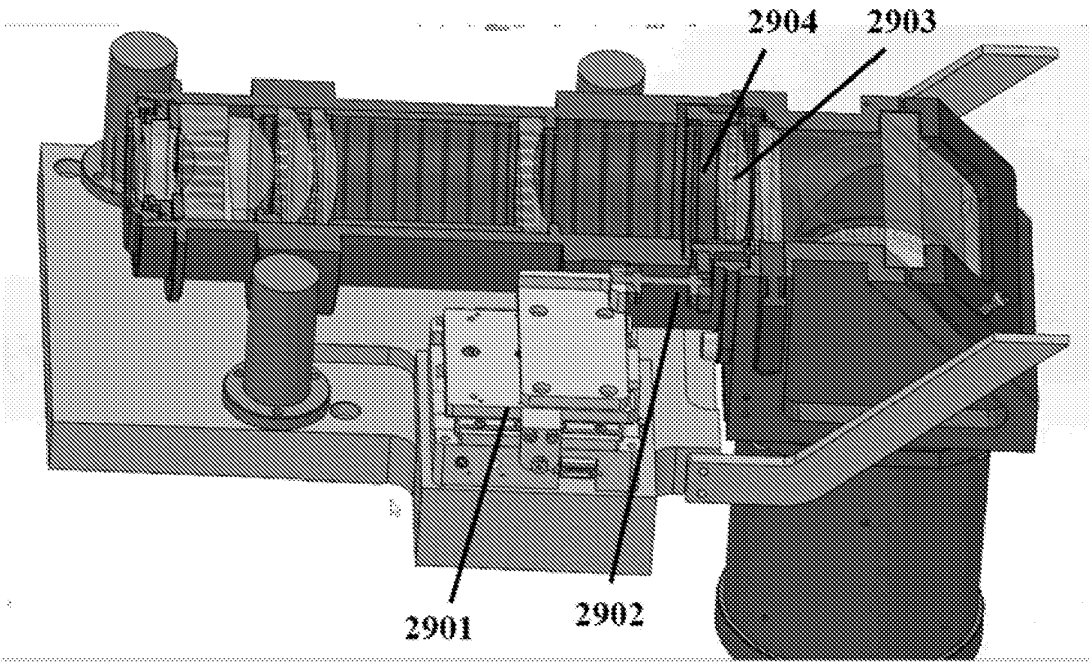


FIG. 93B

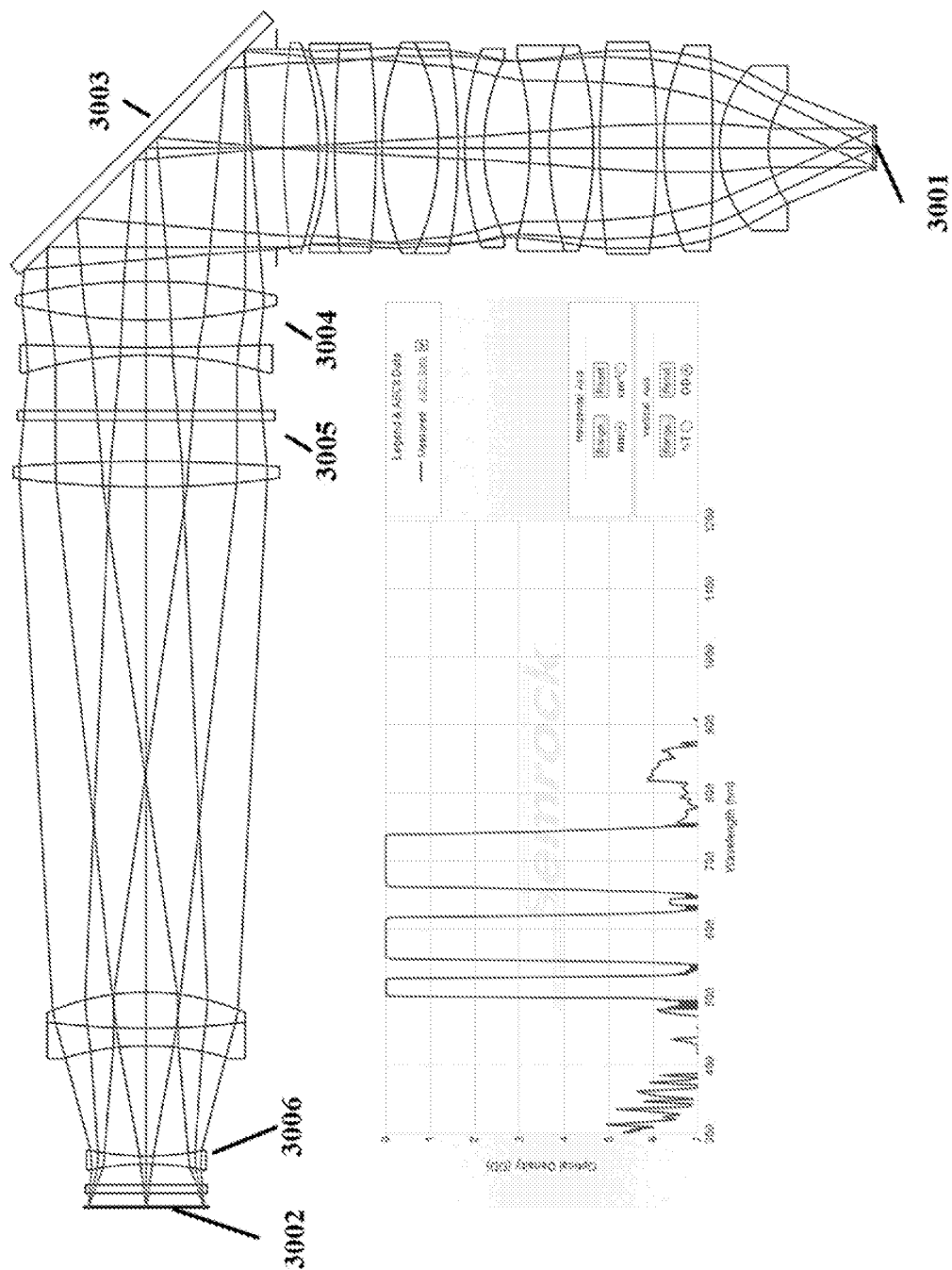


FIG. 94

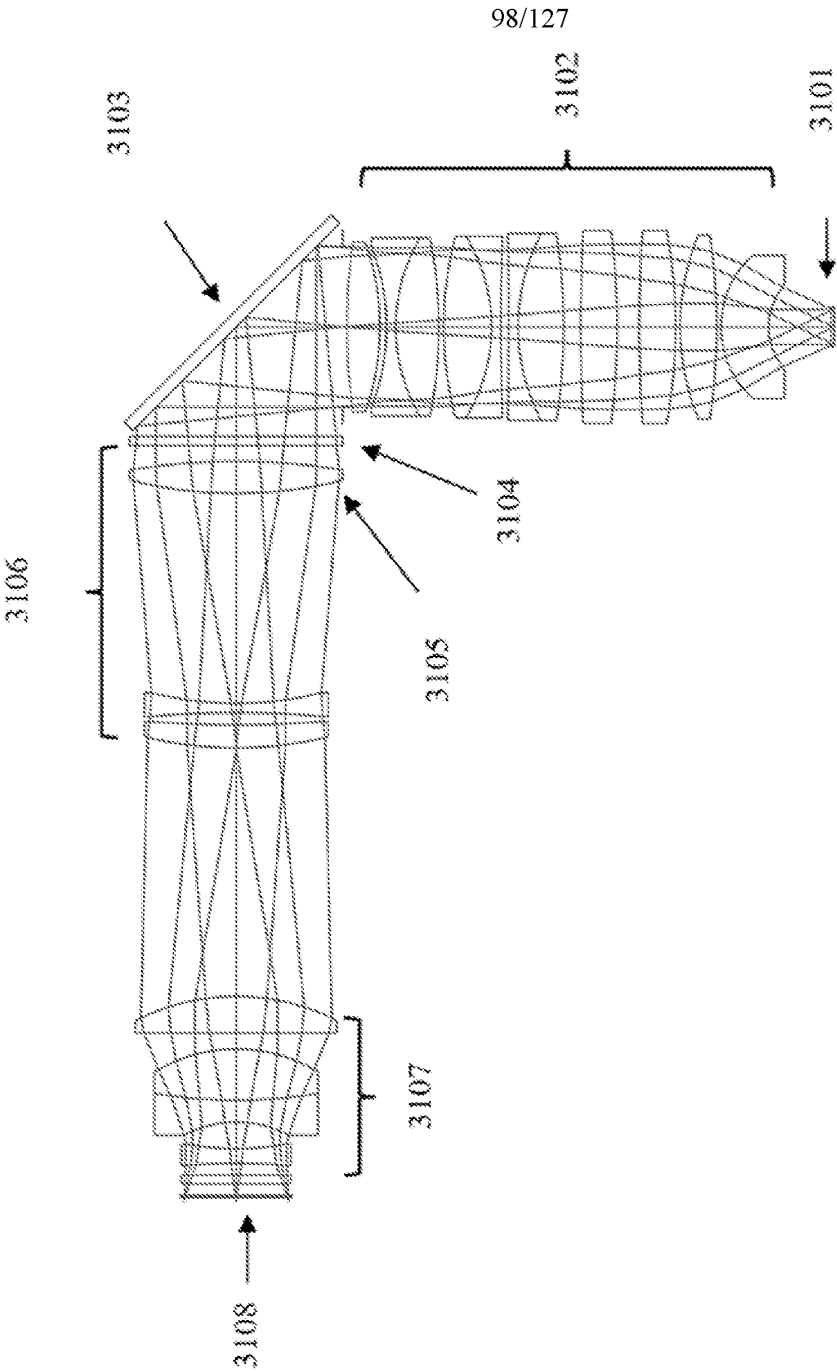


FIG. 95

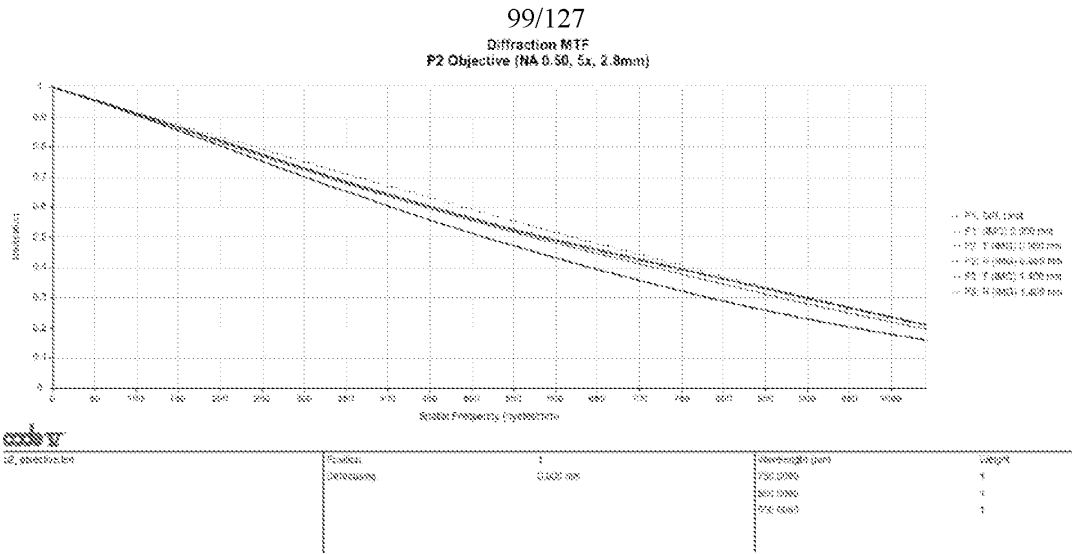


FIG. 96A

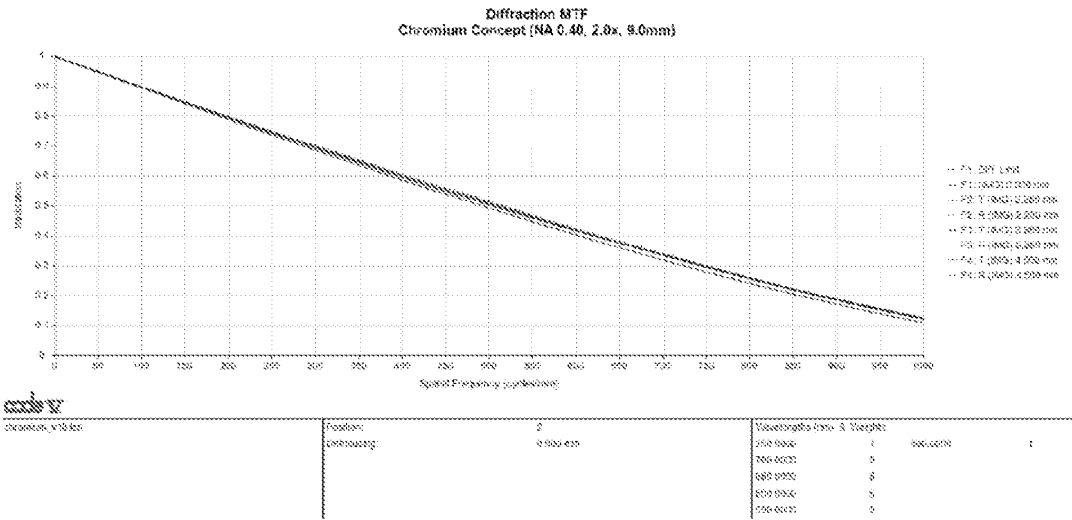


FIG. 96B

W A V E F R O N T A N A L Y S I S										
Chromium Concept (NA 0.40, 2.0x, 9.0um)							POSITION 1			
		K REL. FIELD		0.50	0.50	0.50	0.50			
		Y REL. FIELD		0.50	0.50	0.75	1.00			
		WEIGHTS		1.00	1.00	1.00	1.00			
		NUMBER OF WAVES		1768	1772	1778	1784			
		WAVELENGTHS		700.0	700.0	650.0	600.0	550.0	500.0	
		WEIGHTS		1	5	5	5	5	1	
FIELD		BEST INDIVIDUAL FOCUS		BEST COMPOSITE FOCUS						
SPACE	WAV	SHIFT (MM.)	FOCUS (MM.)	RMS (WAVES)	SPREAD	SHIFT (MM.)	FOCUS (MM.)	RMS (WAVES)	SPREAD	
X	0.50	0.50	0.000000	-0.000113	0.0050	0.000	0.000000	-0.000029	0.0084	0.000
Y	0.50	0.50	0.000000				0.000000			
X	0.50	0.50	0.000000	-0.000424	0.0100	0.000	0.000000	-0.000029	0.0214	0.000
Y	0.50	1.26	0.000003				0.000002			
X	0.50	0.50	0.000000	-0.000378	0.0055	0.000	0.000000	-0.000029	0.0274	0.000
Y	0.75	1.03	-0.000019				-0.000001			
X	0.50	0.50	0.000000	0.000477	0.0200	0.000	0.000000	-0.000029	0.0303	0.000
Y	1.00	2.33	-0.000101				-0.000000			
COMPOSITE RMS FOR POSITION 1:									0.02419	

FIG. 97A

W A V E F R O N T A N A L Y S I S										
Chromium Concept (NA 0.40, 2.0x, 9.0um)							POSITION 2			
		K REL. FIELD		0.50	0.50	0.50	0.50			
		Y REL. FIELD		0.50	0.50	0.75	1.00			
		WEIGHTS		1.00	1.00	1.00	1.00			
		NUMBER OF WAVES		1768	1772	1778	1782			
		WAVELENGTHS		700.0	700.0	650.0	600.0	550.0	500.0	
		WEIGHTS		1	5	5	5	5	1	
FIELD		BEST INDIVIDUAL FOCUS		BEST COMPOSITE FOCUS						
SPACE	WAV	SHIFT (MM.)	FOCUS (MM.)	RMS (WAVES)	SPREAD	SHIFT (MM.)	FOCUS (MM.)	RMS (WAVES)	SPREAD	
X	0.50	0.50	0.000000	0.000320	0.0134	0.000	0.000000	-0.000029	0.0213	0.000
Y	0.50	0.50	0.000000				0.000000			
X	0.50	0.50	0.000000	-0.000338	0.0180	0.000	0.000000	-0.000029	0.0180	0.000
Y	0.50	1.26	-0.000049				-0.000040			
X	0.50	0.50	0.000000	-0.000377	0.0213	0.000	0.000000	-0.000029	0.0231	0.000
Y	0.75	1.04	-0.000110				-0.000112			
X	0.50	0.50	0.000000	0.000078	0.0361	0.000	0.000000	-0.000029	0.0383	0.000
Y	1.00	2.30	-0.000241				-0.000243			
COMPOSITE RMS FOR POSITION 2:									0.02180	

FIG. 97B

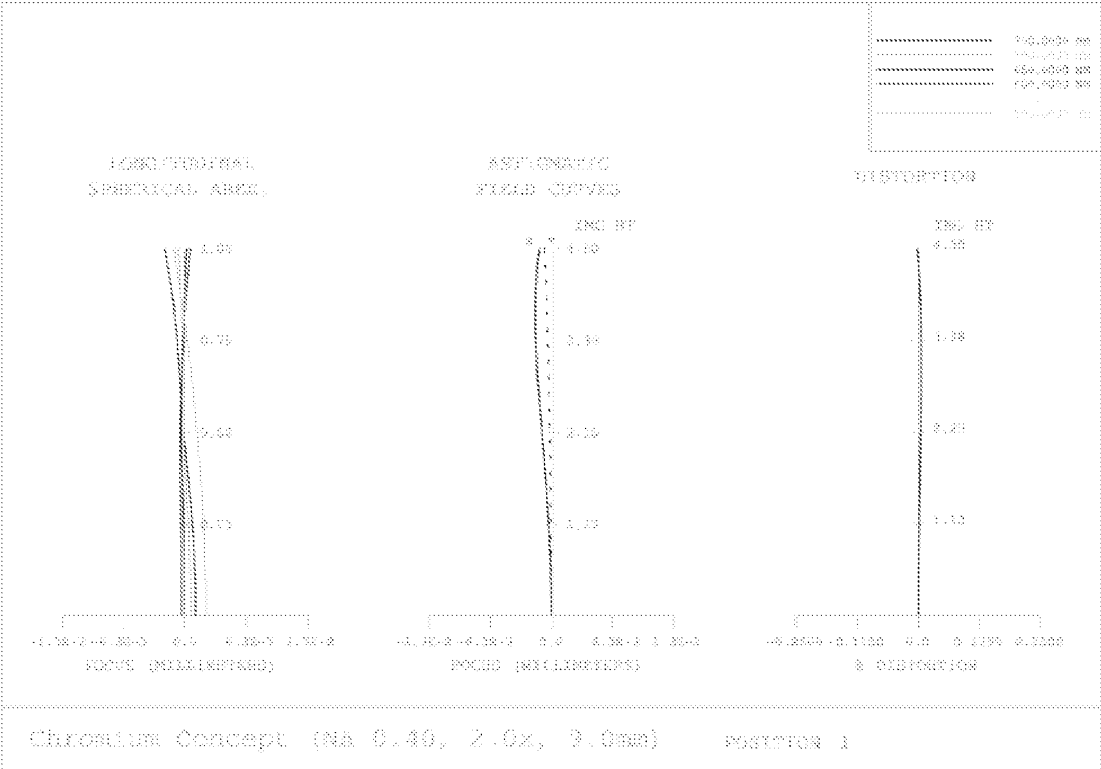


FIG. 98

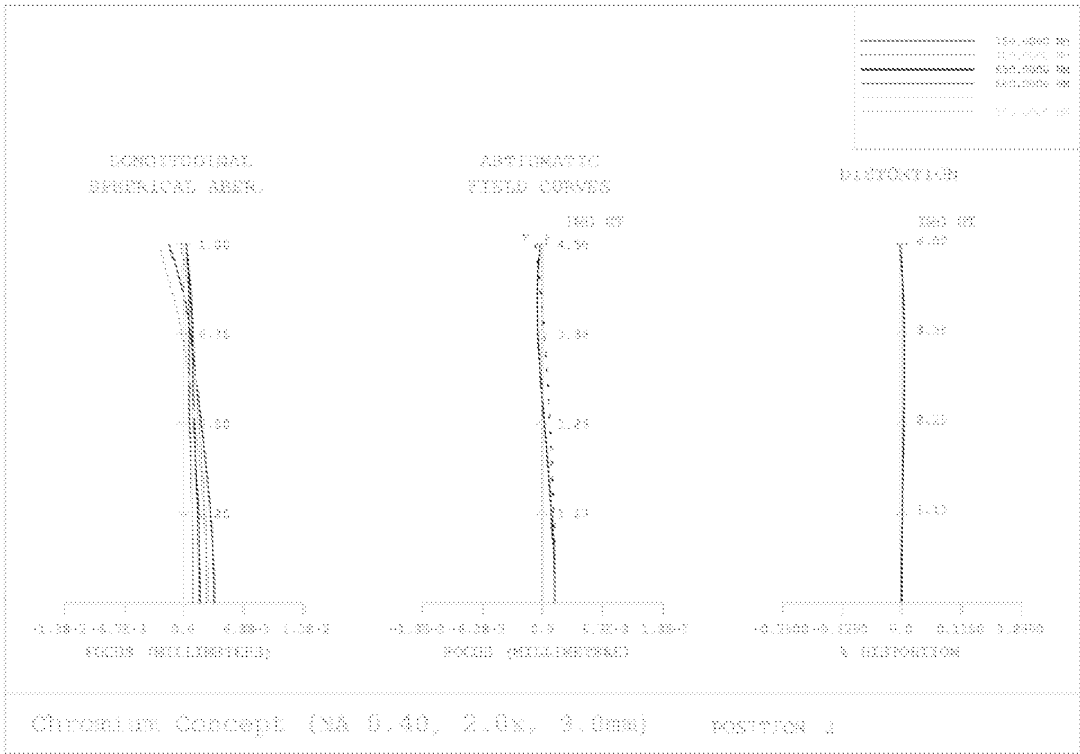


FIG. 99

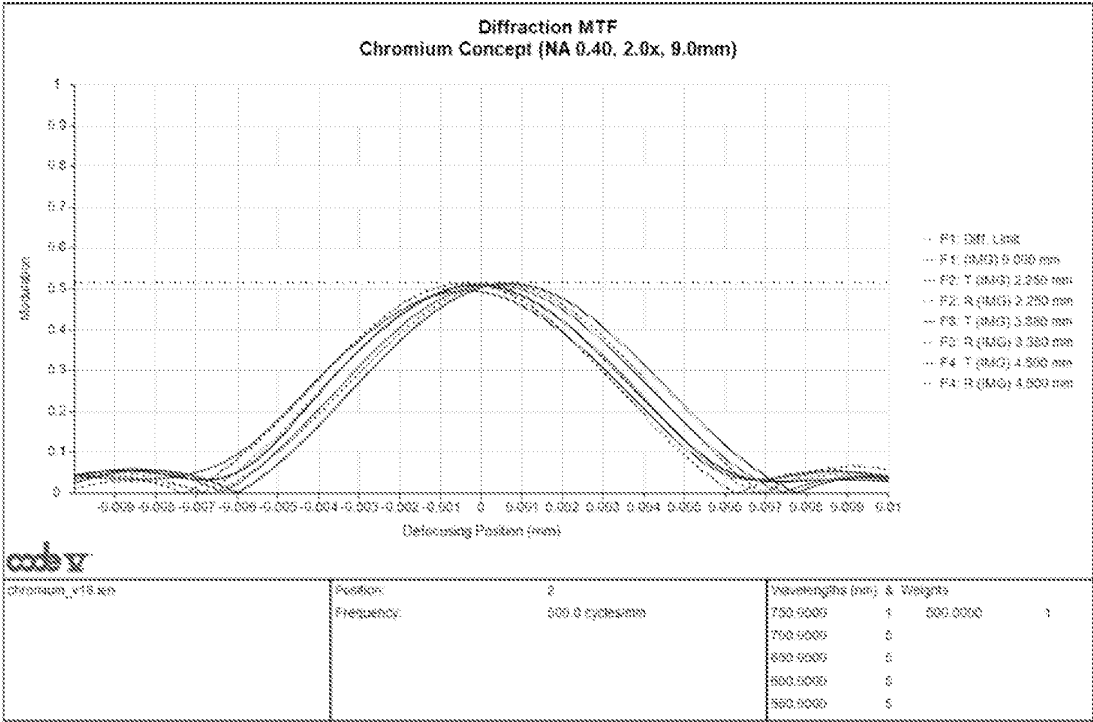


FIG. 100

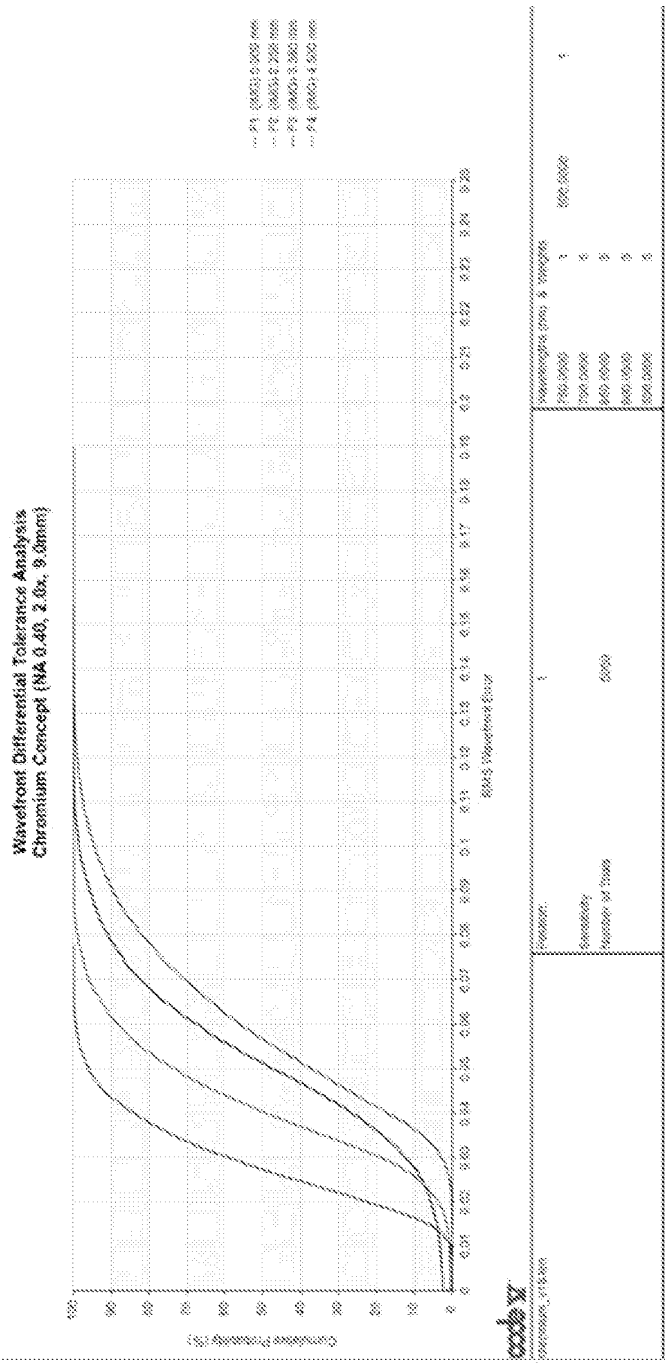


FIG. 101

105/127

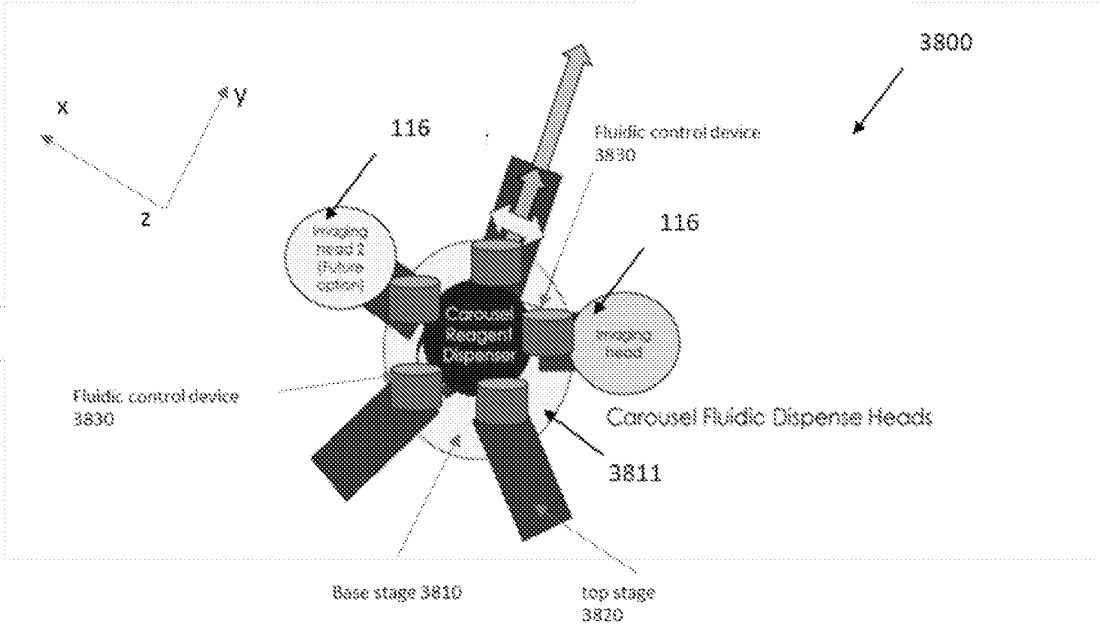


FIG. 102

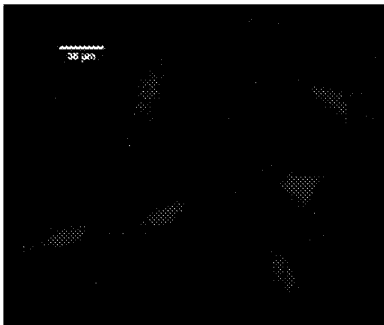


FIG. 103A

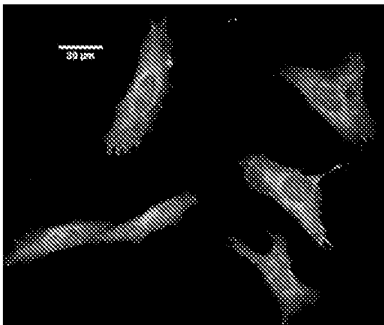


FIG. 103B



FIG. 103C

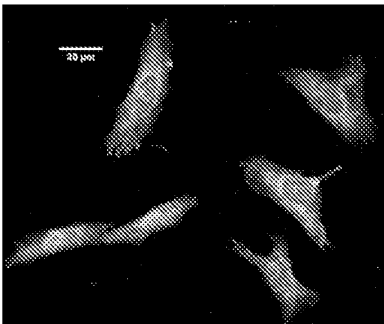


FIG. 103D

107/127

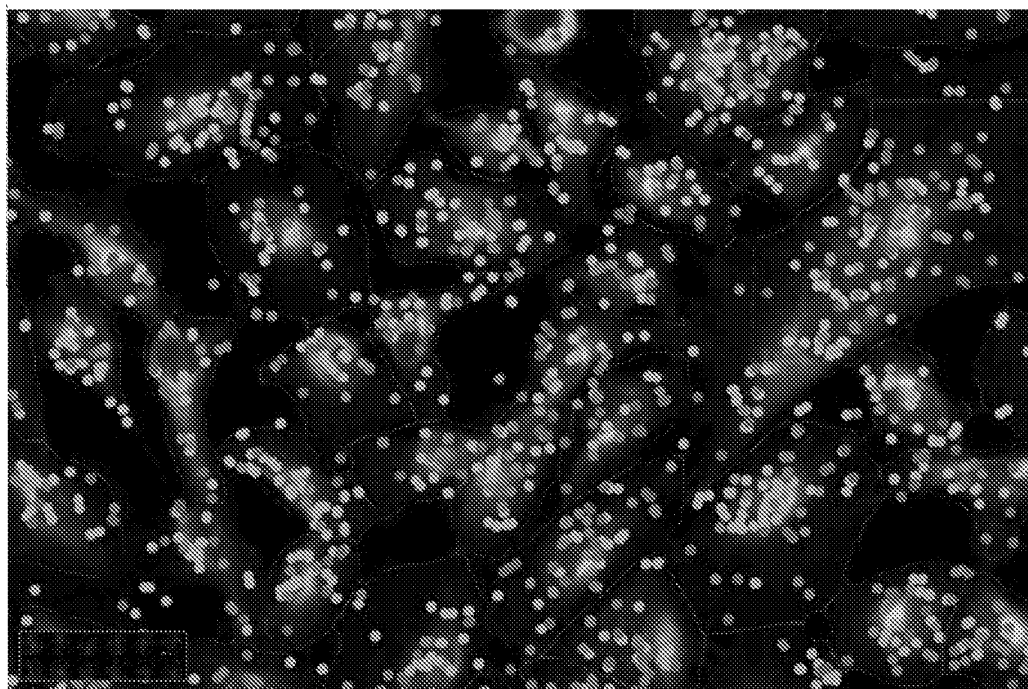


FIG. 104

FIG. 105A

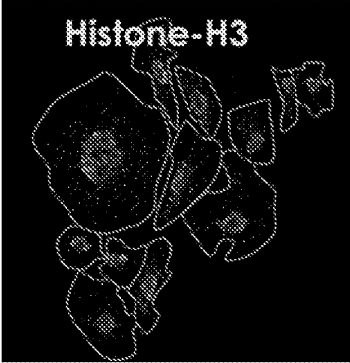


FIG. 105B

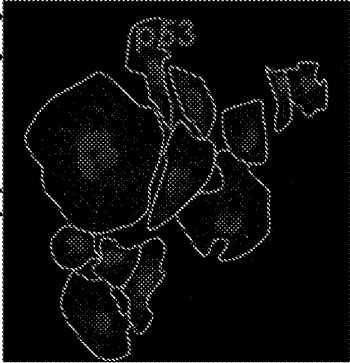
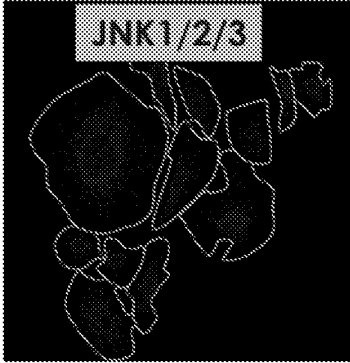
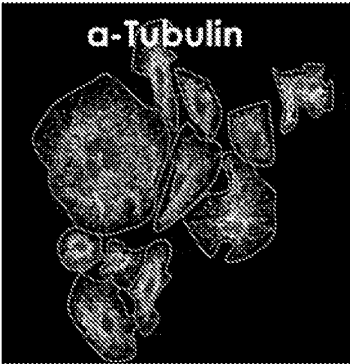


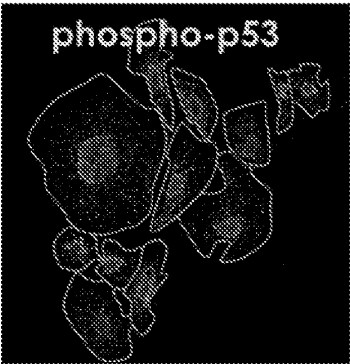
FIG. 105C



α -Tubulin



phospho-p53



phospho-JNK1/2/3

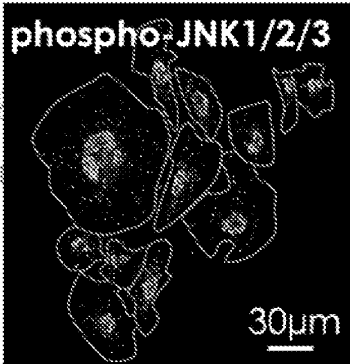


FIG. 105D

FIG. 105E

FIG. 105F



FIG. 106A



FIG. 106B

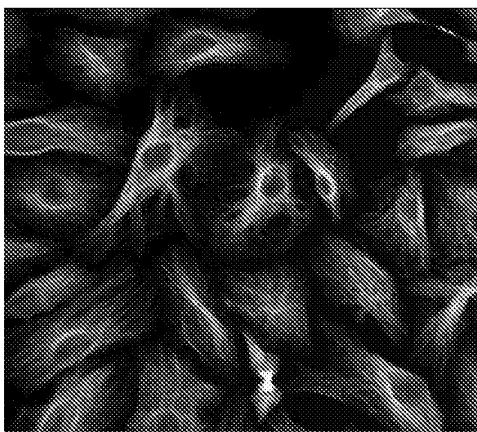


FIG. 106C

110/127

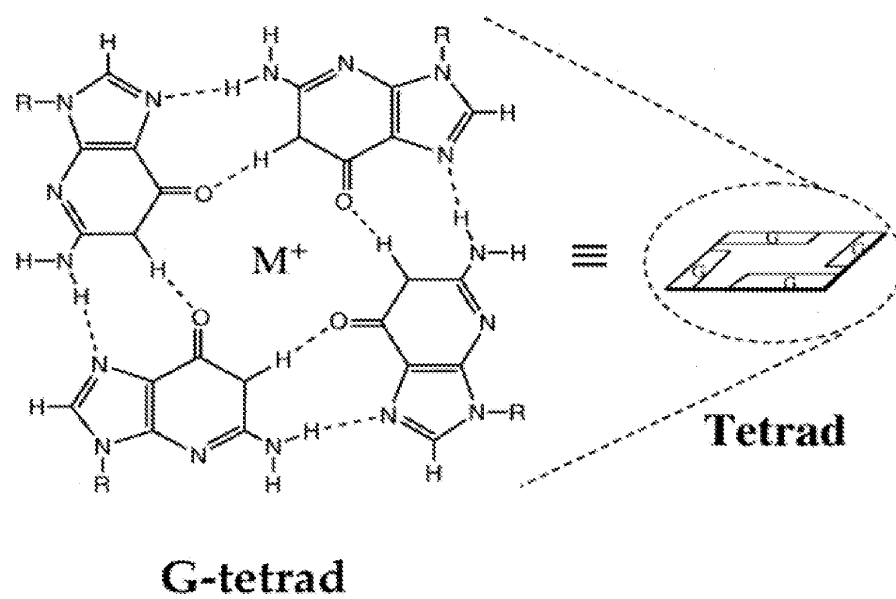


FIG. 107

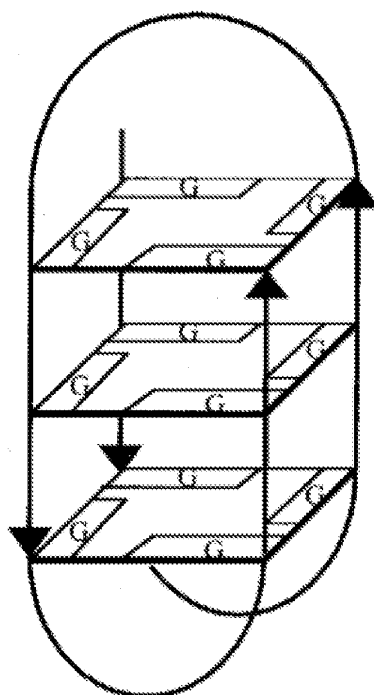


FIG. 108

FIG. 109B

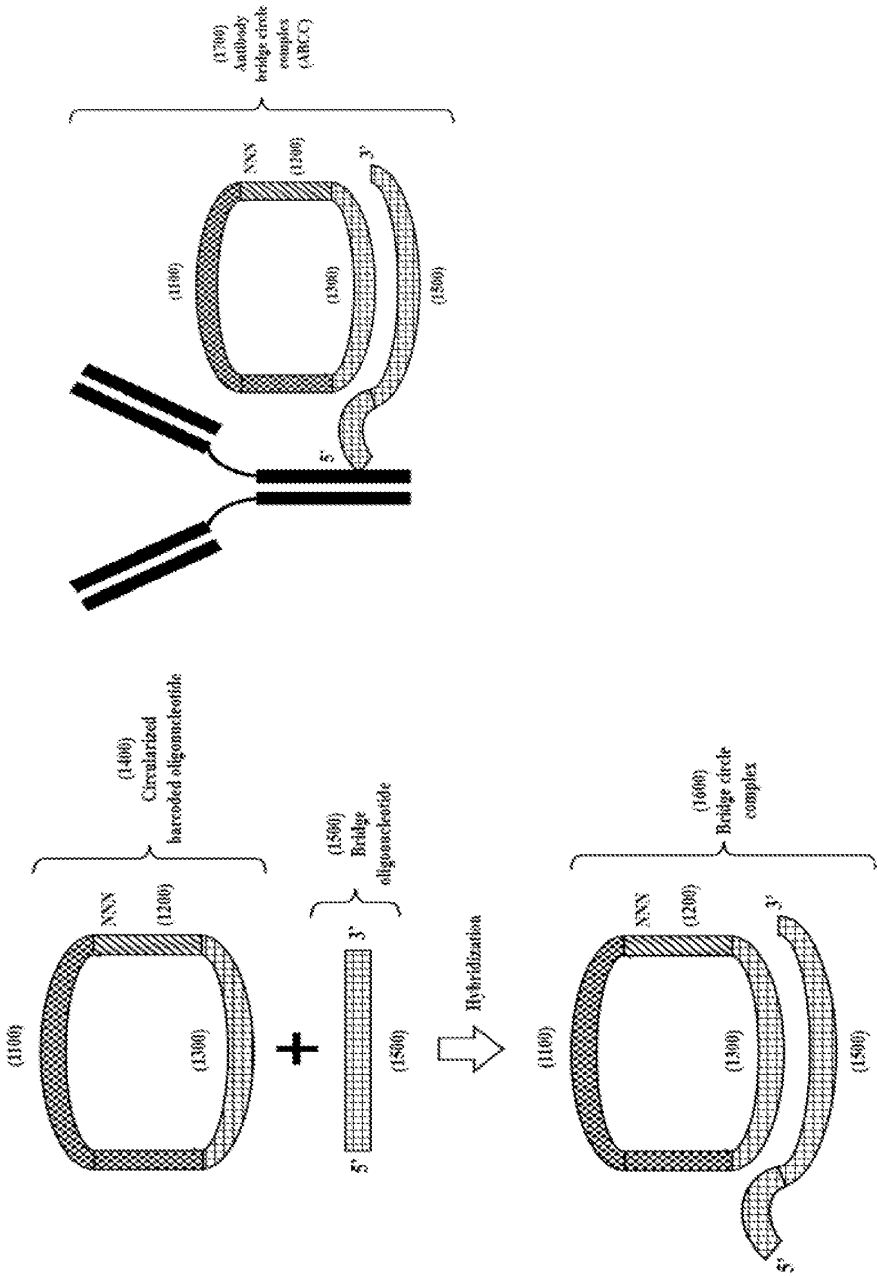


FIG. 109A

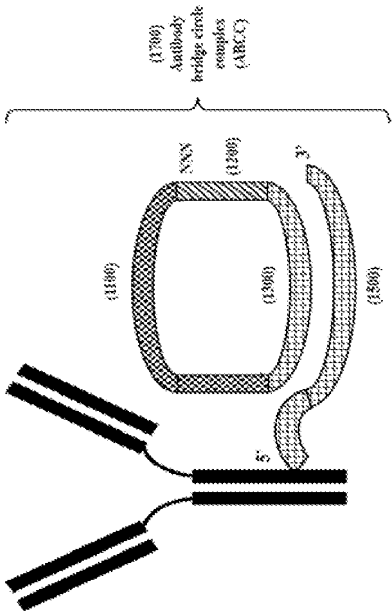


FIG. 110B

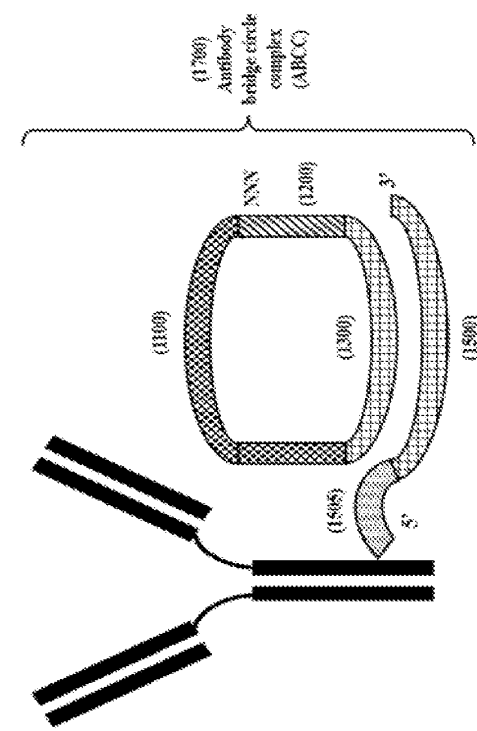


FIG. 110A

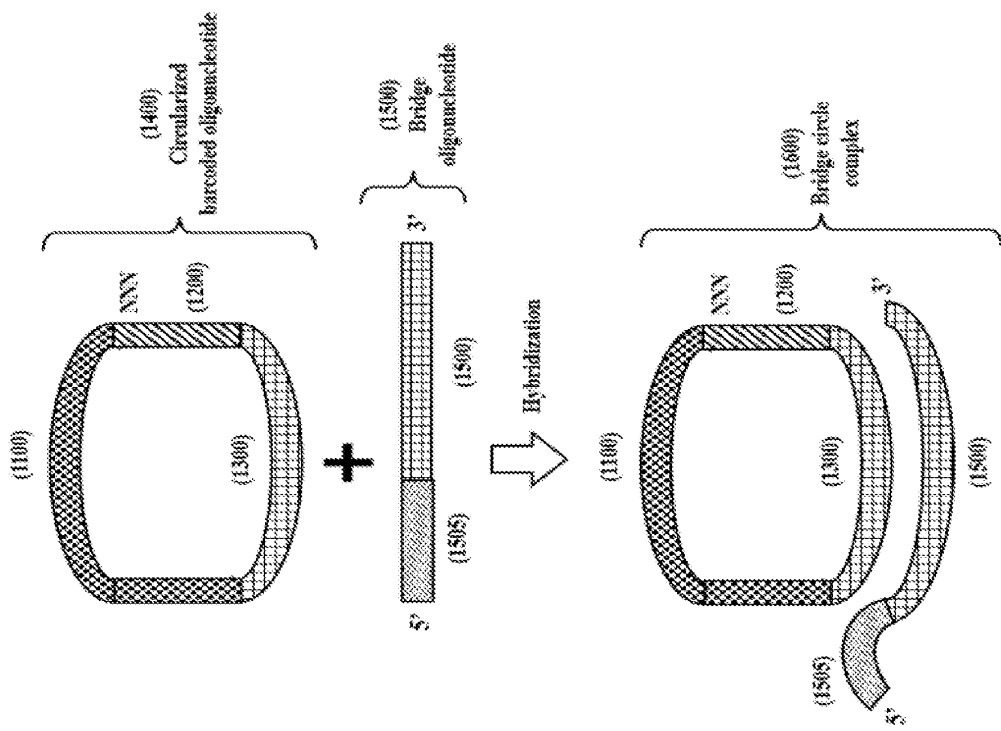


FIG. 111A

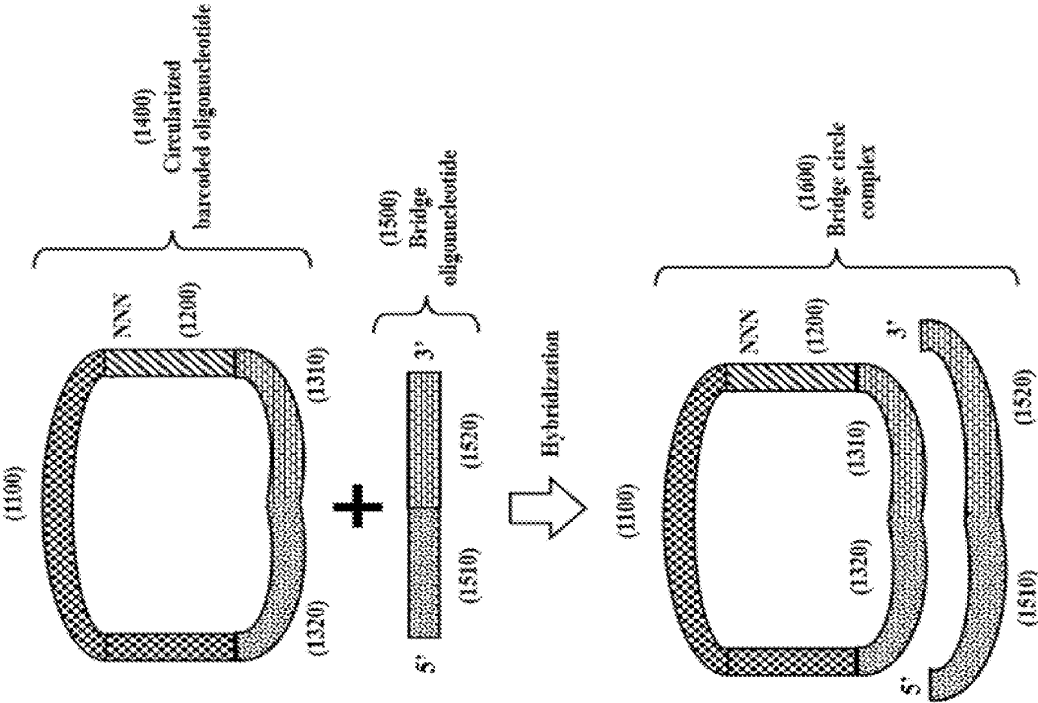


FIG. 111B

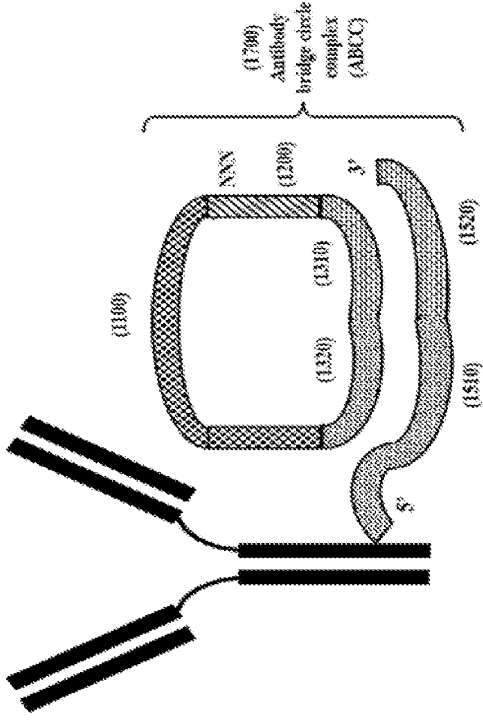


FIG. 112A

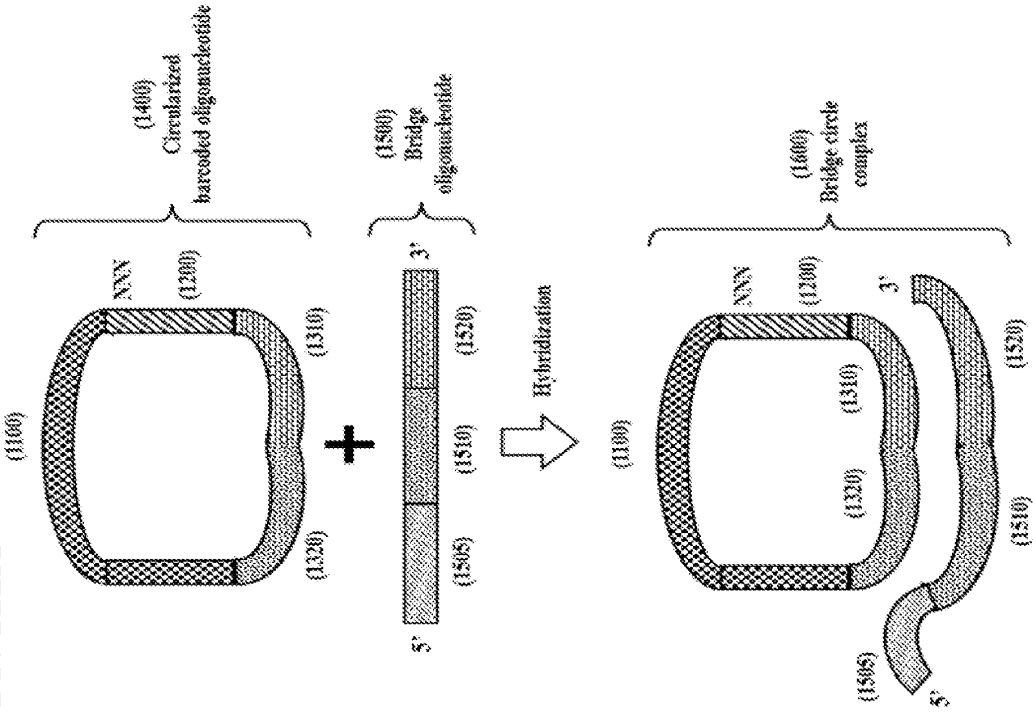


FIG. 112B

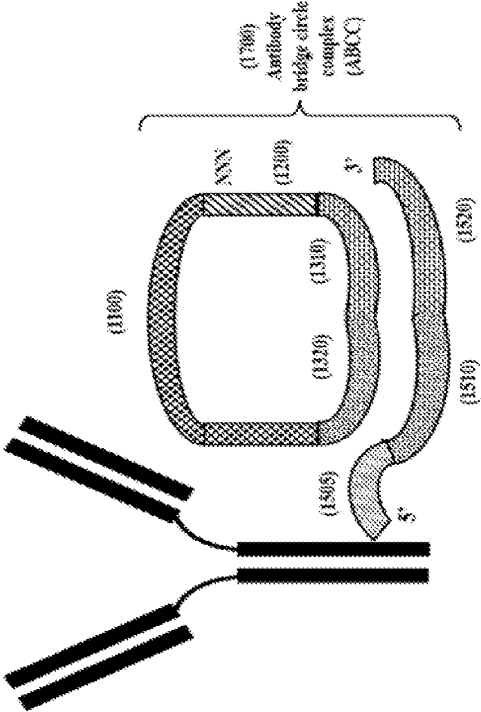


FIG. 113A

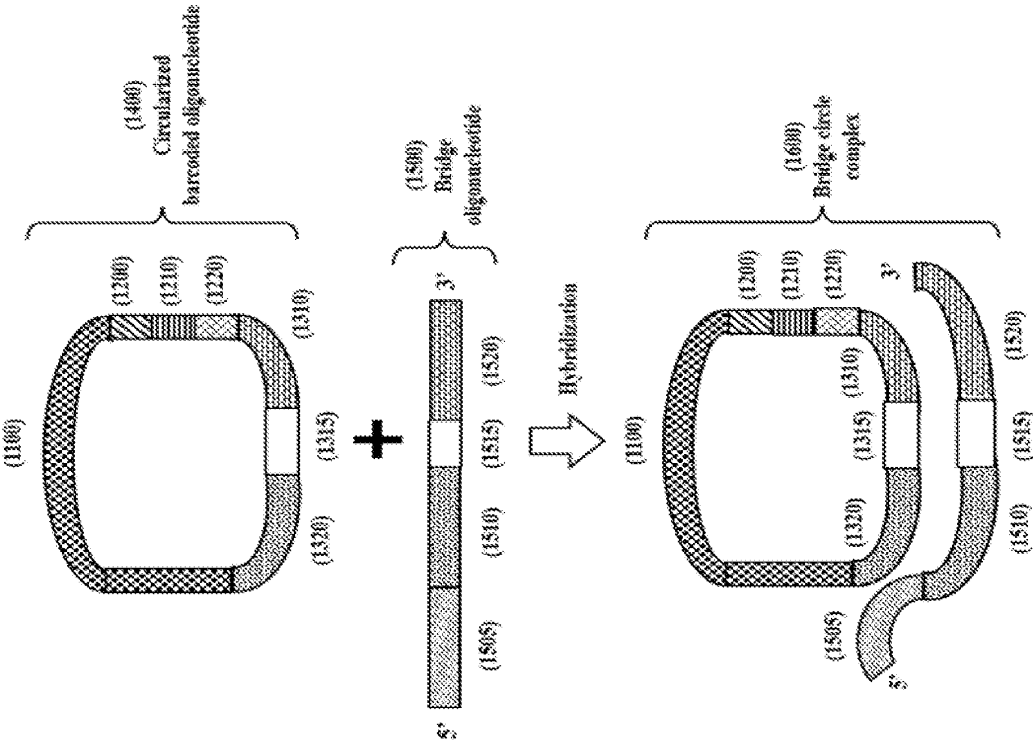


FIG. 113B

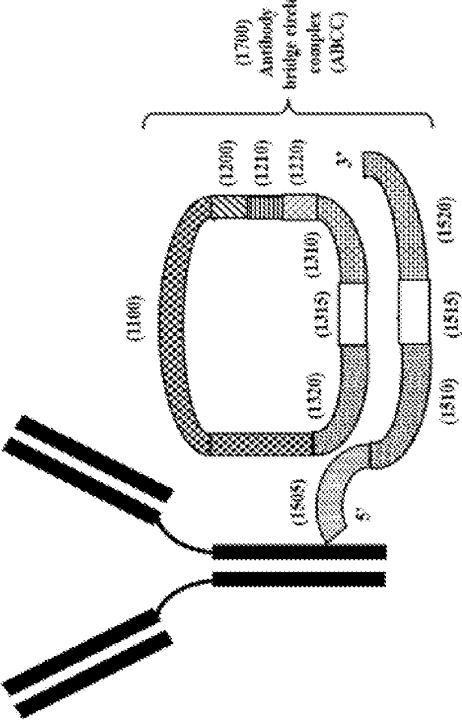


FIG. 114A A target analyte

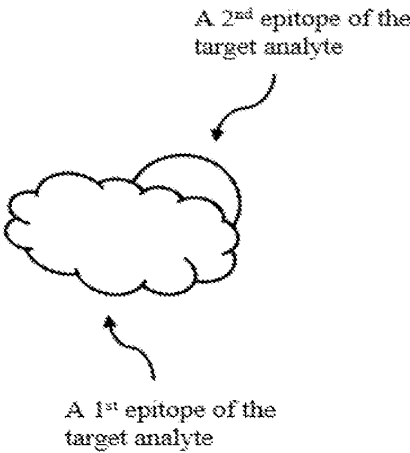


FIG. 114B

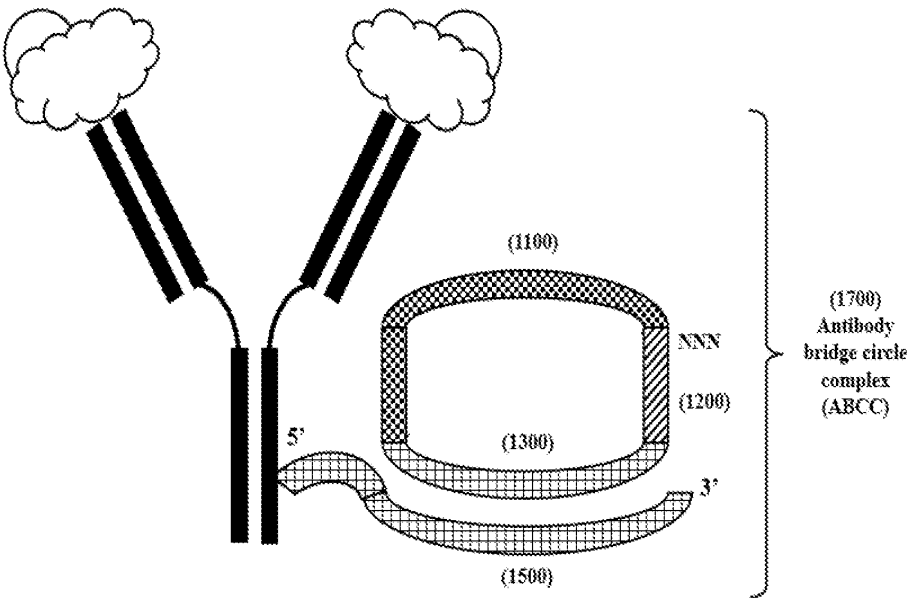


FIG. 115A

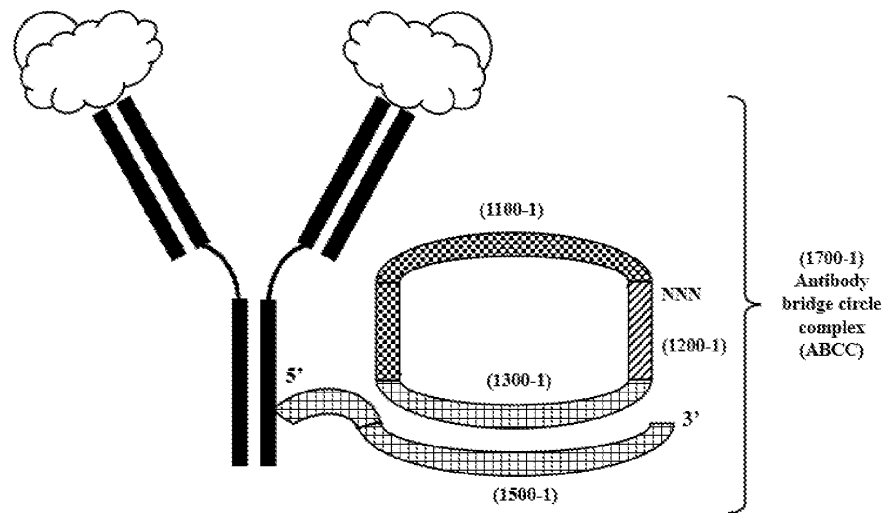
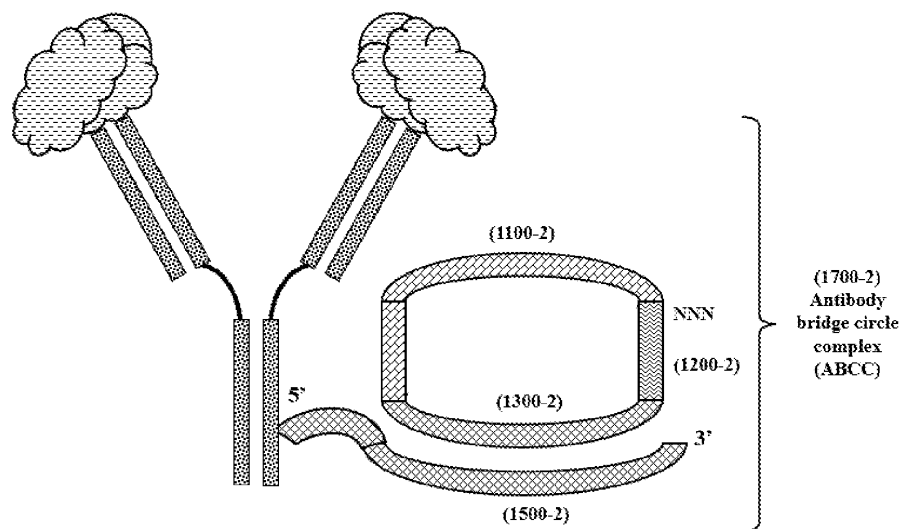


FIG. 115B



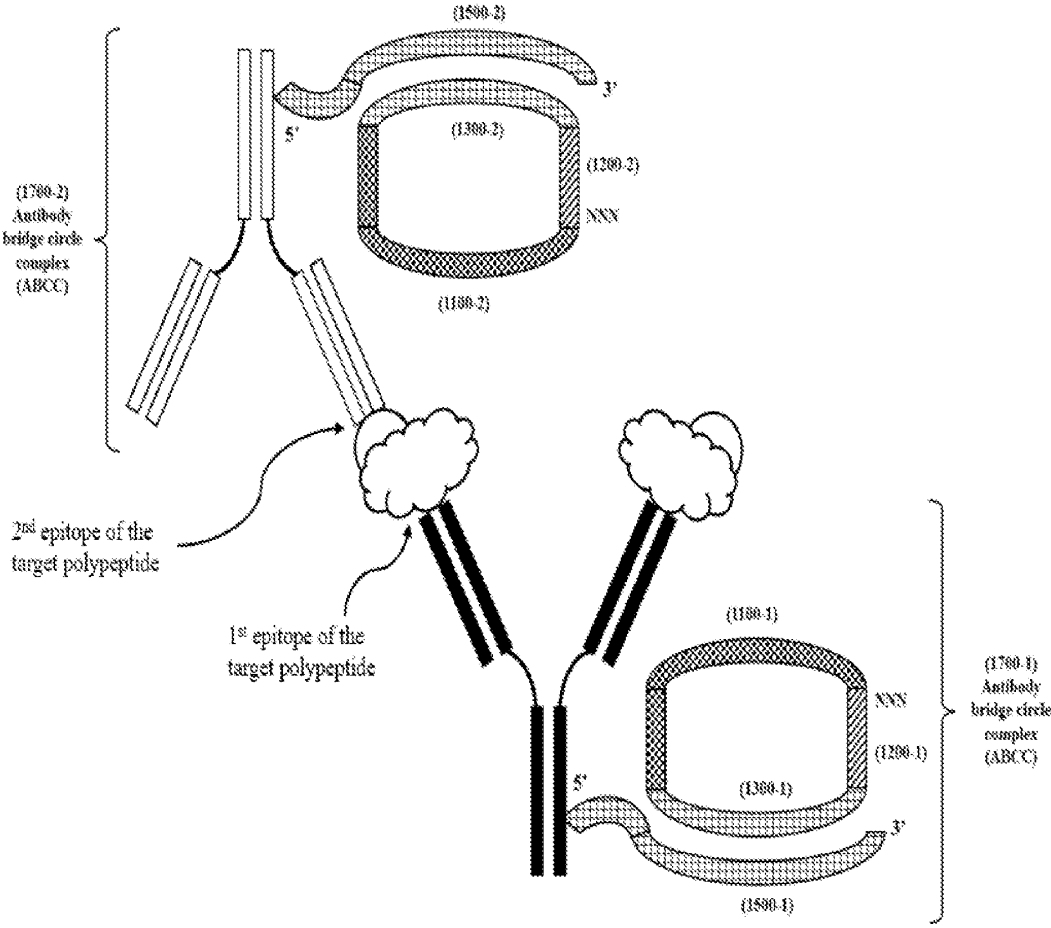


FIG. 116

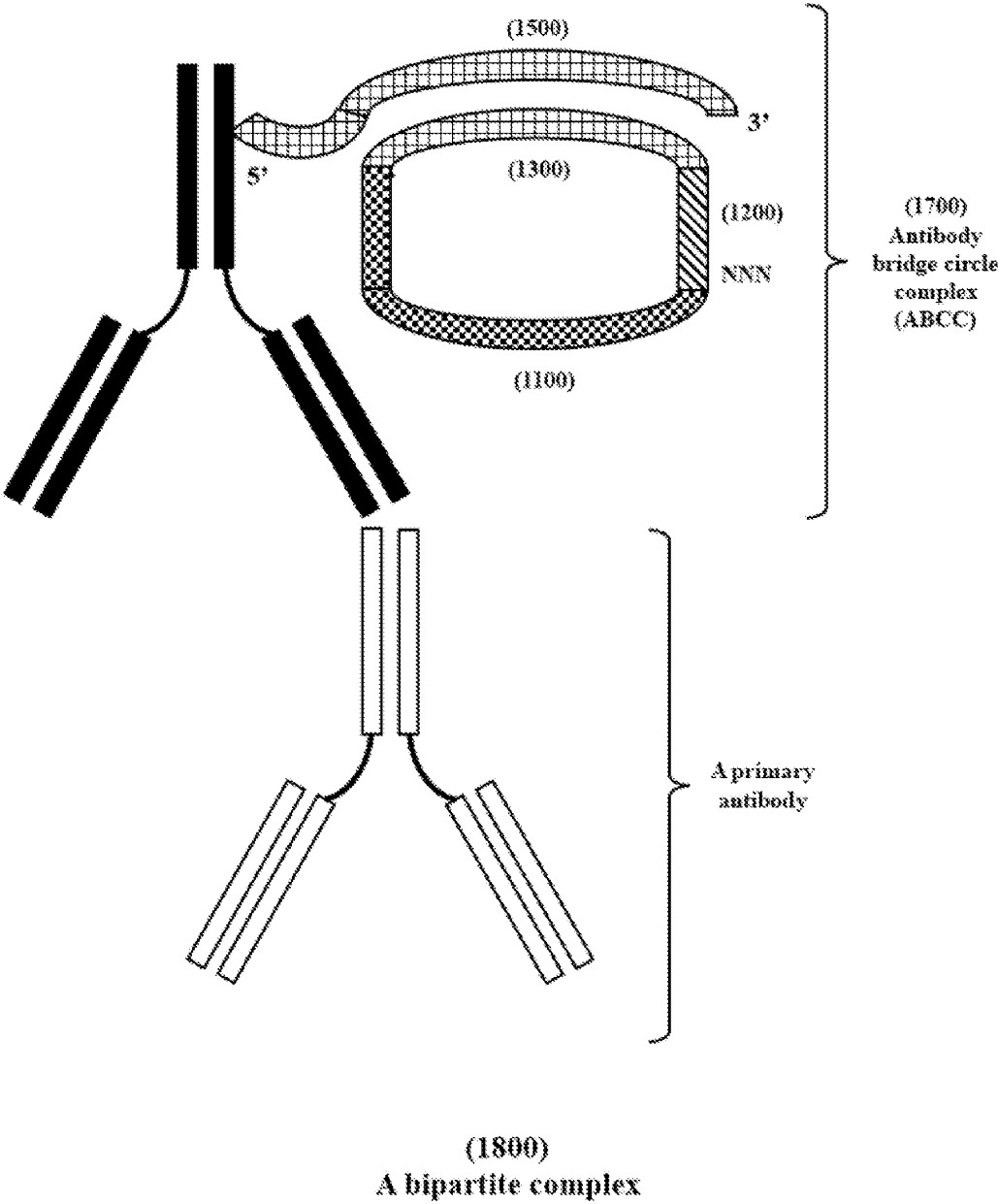
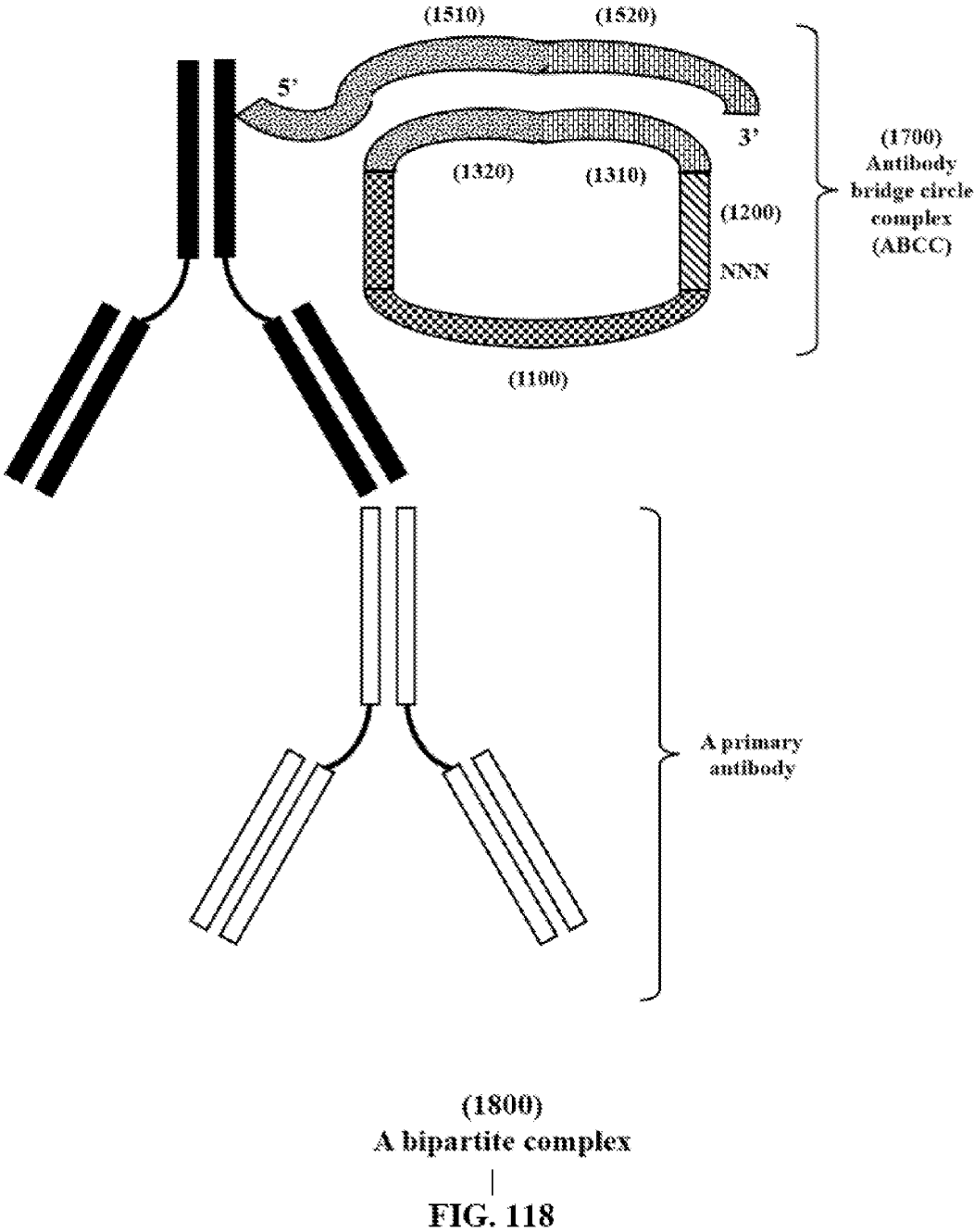


FIG. 117



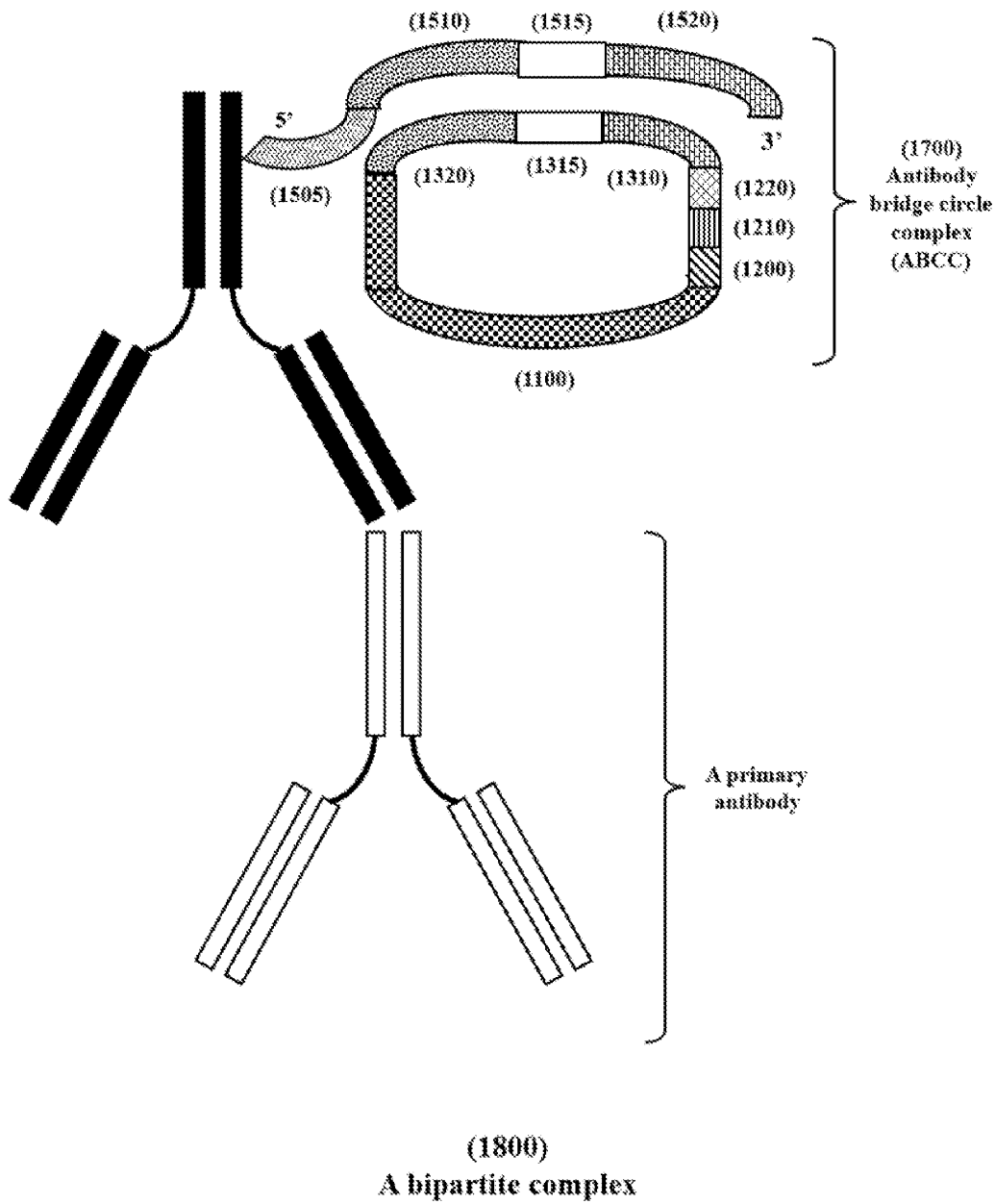


FIG. 119

FIG. 120B

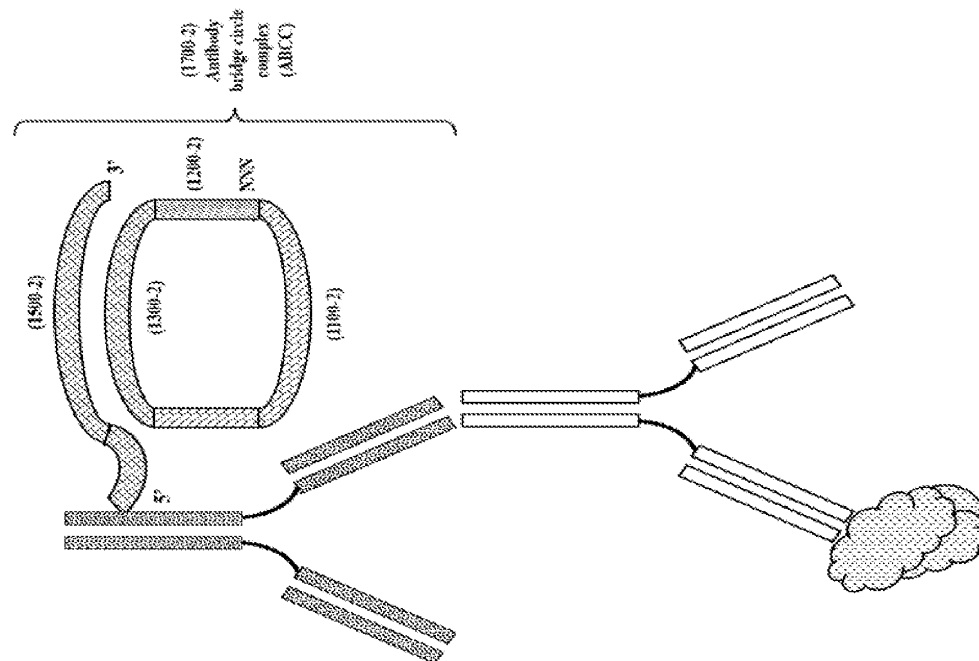
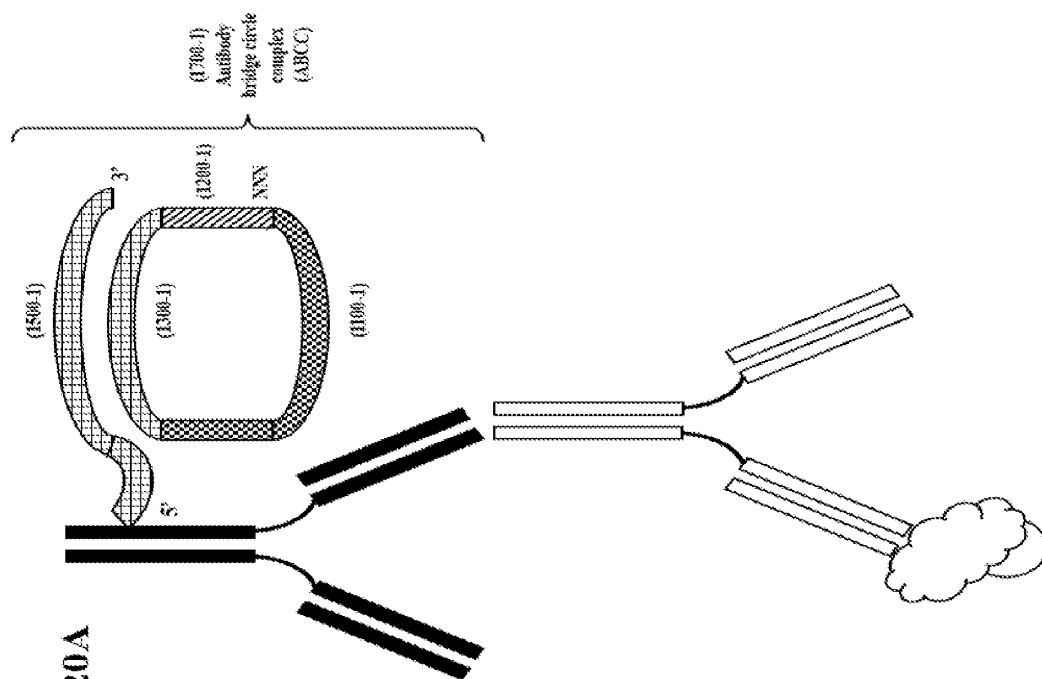


FIG. 120A



	Base position in a target barcode (5' to 3' direction)											
n-th barcode	1	2	3	4	5	6	7	8	9	10	11	12
Target analyte												
1 st barcode	C	T	A	C	C	C	G	T	G	G	T	G
Histone	red	green	red	red	red	red	green	green	green	green	green	green
2 nd barcode	T	C	A	A	A	A	T	G	G	G	G	T
Tubulin	green	red	red	red	red	red	green	green	green	green	green	green
3 rd barcode	C	A	T	C	A	C	T	G	T	G	G	G
HMOX1 (cytosol)	red	red	green	red	red	red	green	green	green	green	green	green
4 th barcode	C	C	C	T	C	A	G	T	G	T	G	G
C Myc (nucleus)	red	red	red	green	red	red	green	green	green	green	green	green
5 th barcode	A	A	A	C	C	T	T	G	G	T	T	T
GMI30 (Golgi)	red	red	red	red	red	green	green	green	green	green	green	green

FIG. 121

Target analytes and Localization	Target Barcodes
C-myc (Nucleus)	TCAAAATGGGT
Tubulin (Cytosol)	CTACCCGTGGTG

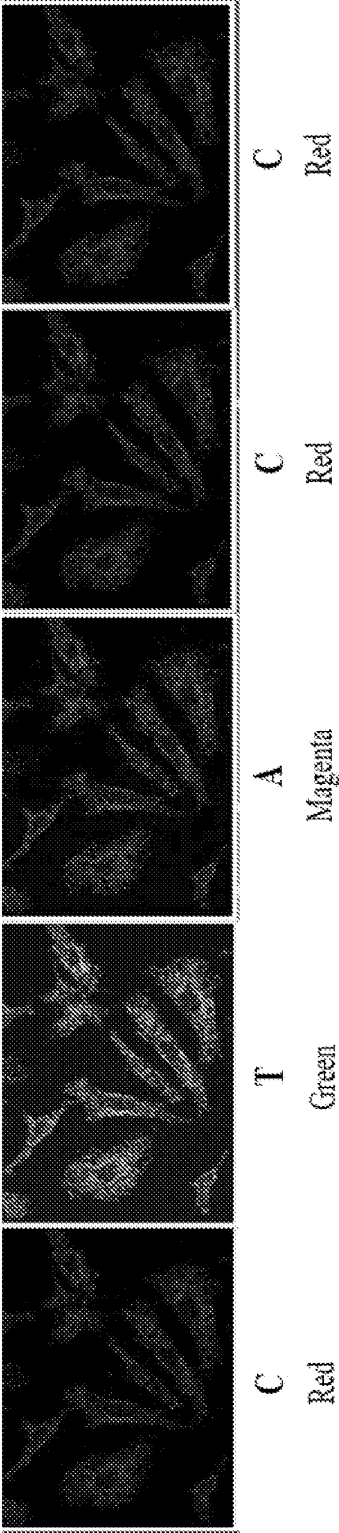
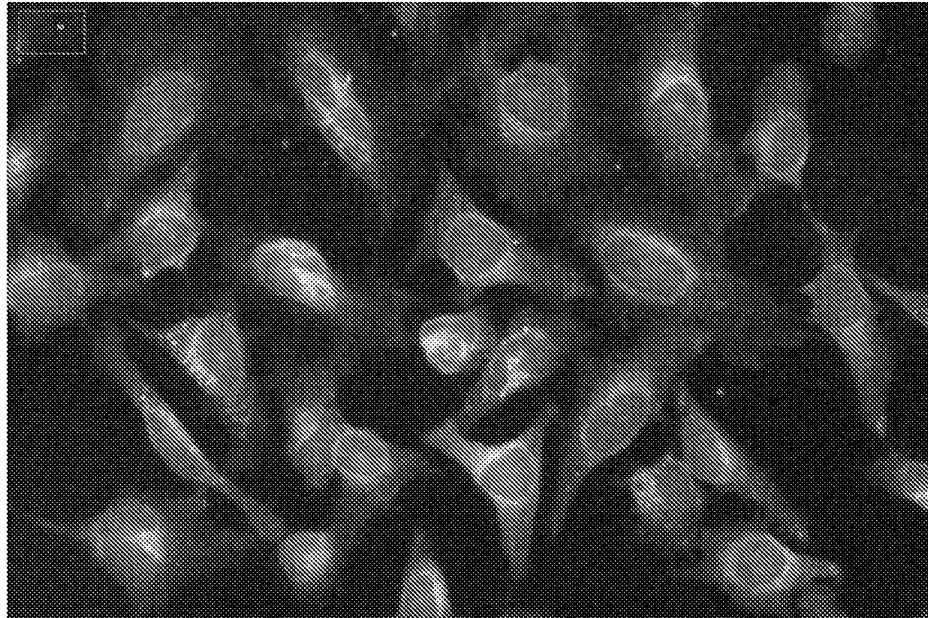
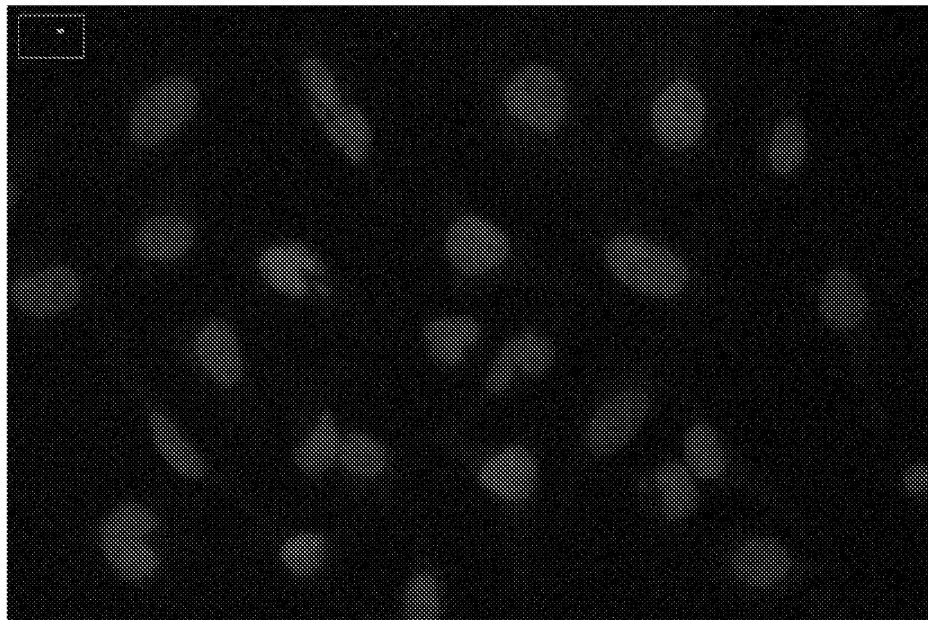


FIG. 122

125/127



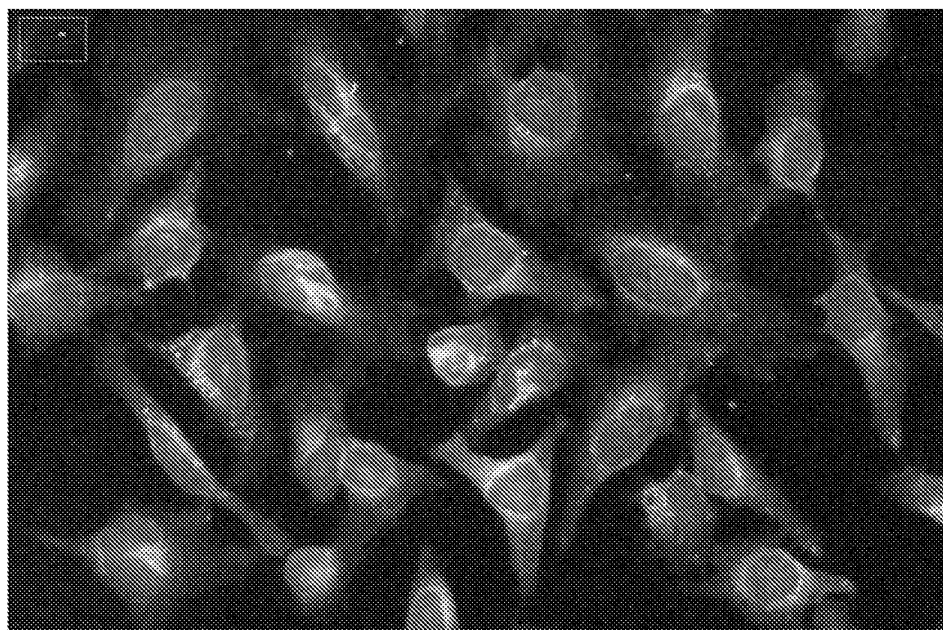
Histone (red) and Tubulin (green)



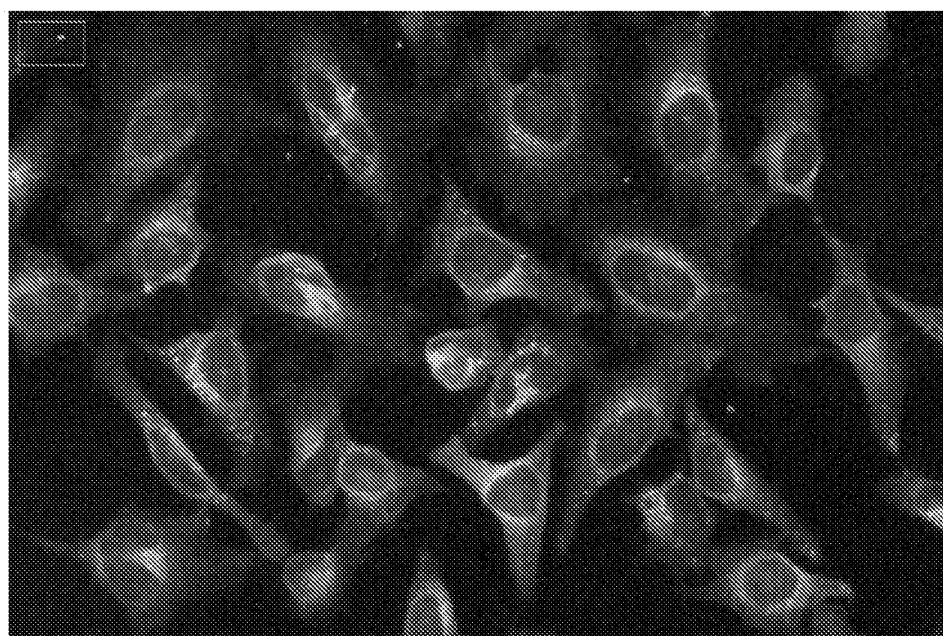
Histone (red)

FIG. 123A

126/127



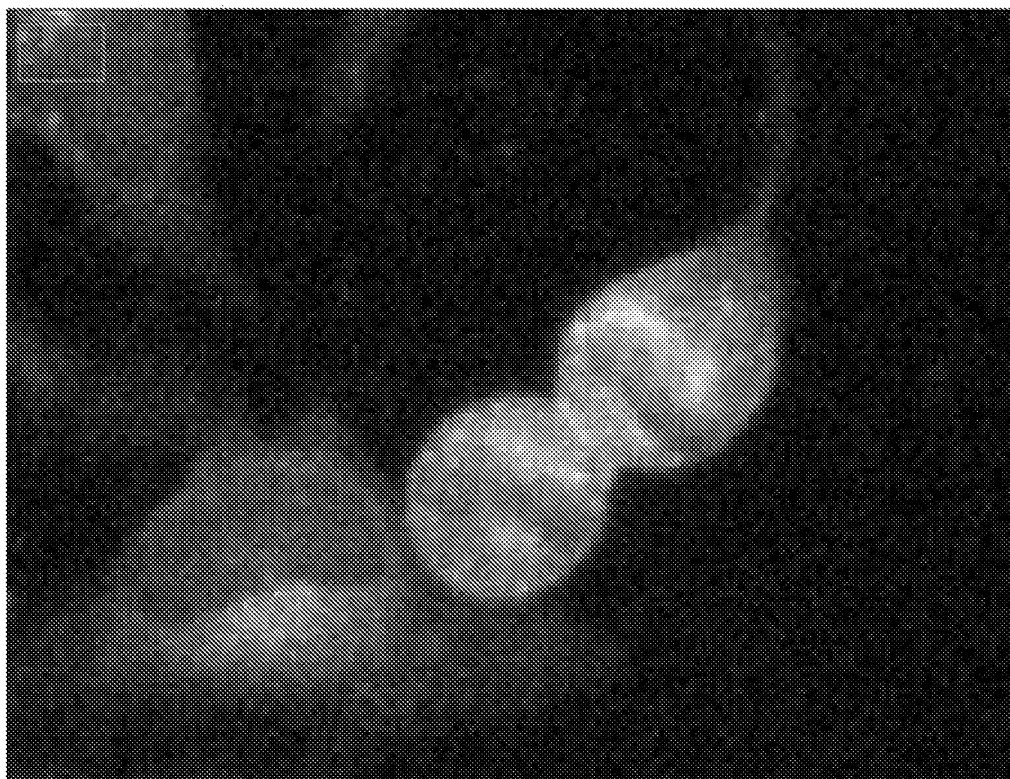
Histone (red) and Tubulin (green)



Tubulin (green)

FIG. 123B

127/127



Histone (red) and Tubulin (green)

FIG. 124