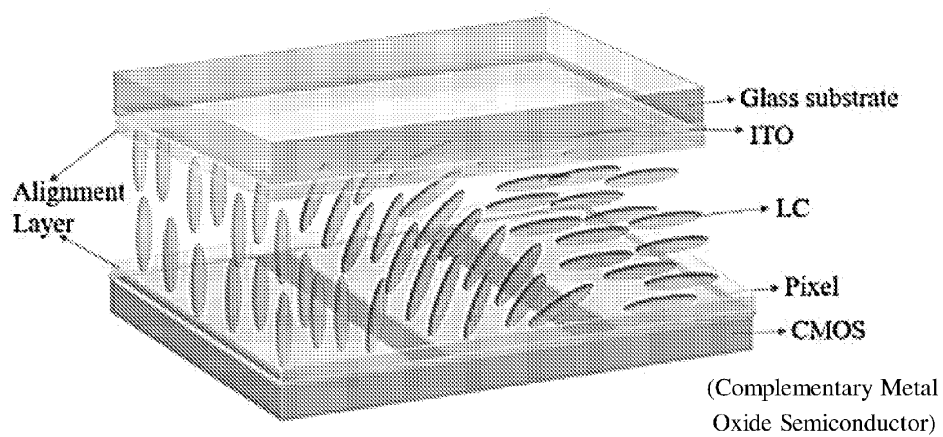
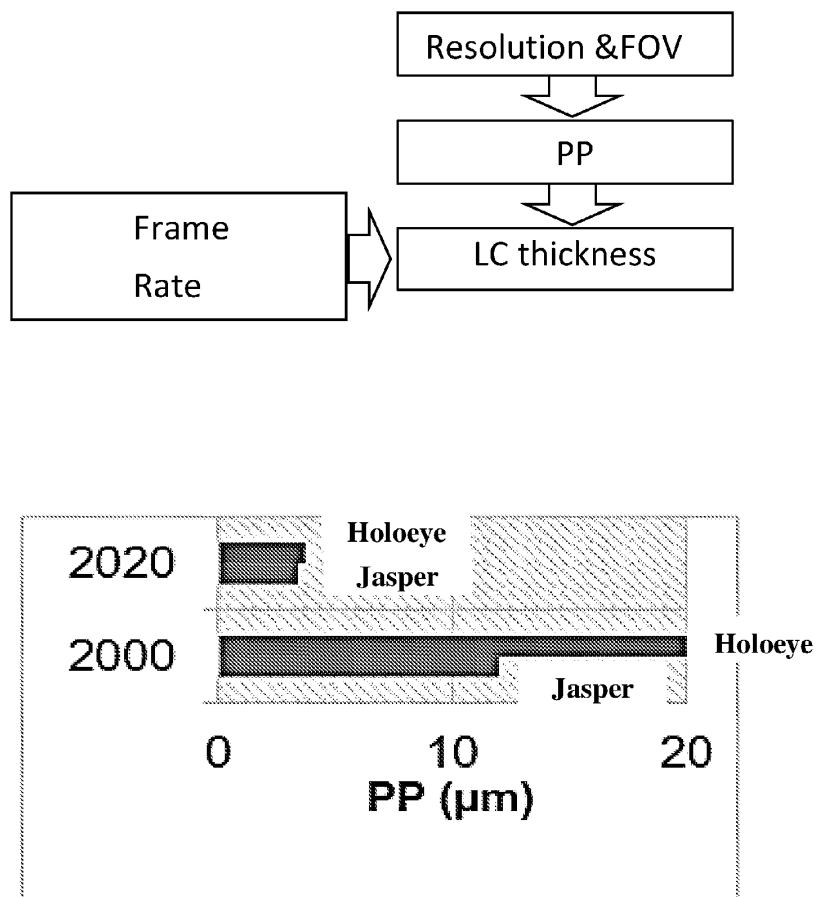


FIG. 1A



PRIOR ART

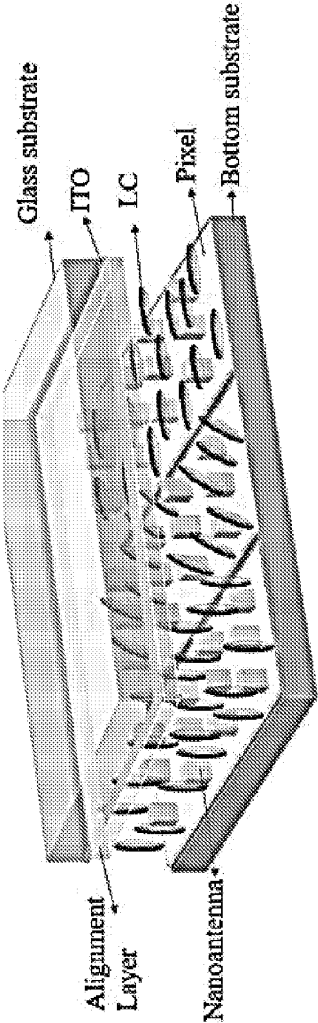
FIG. 1B

Voltage range ≈ 5 to 20V

Response time > 2 ms

PRIOR ART

FIG. 1C



PRIOR ART

FIG. 2

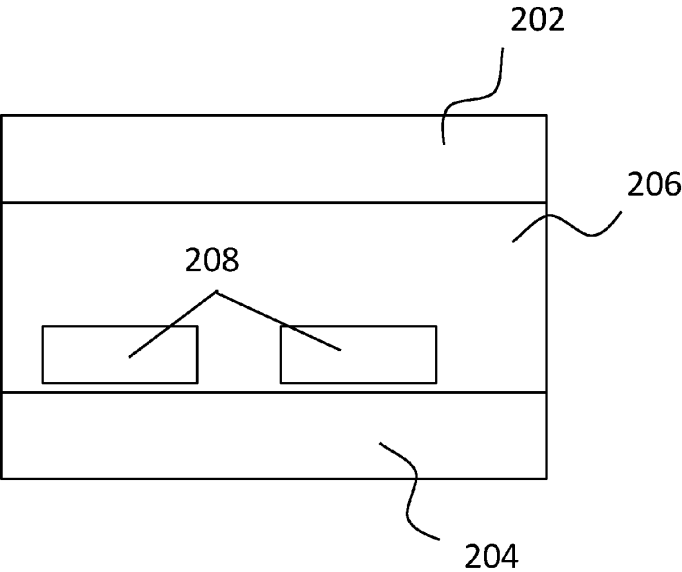
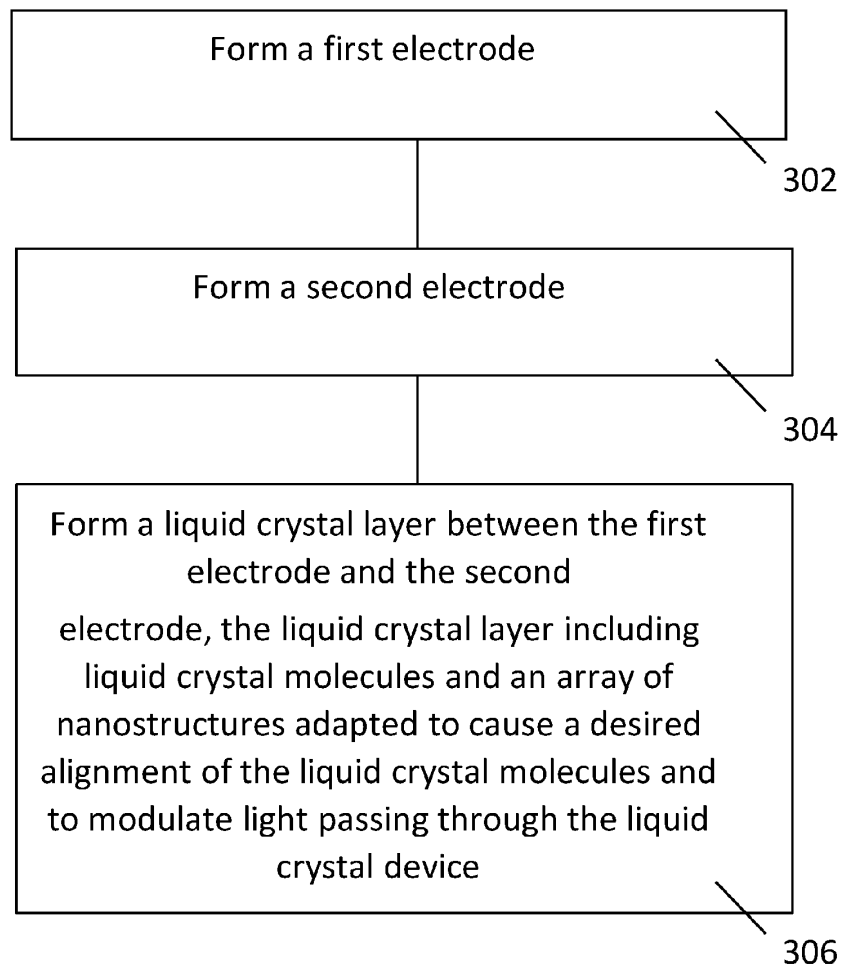


FIG. 3

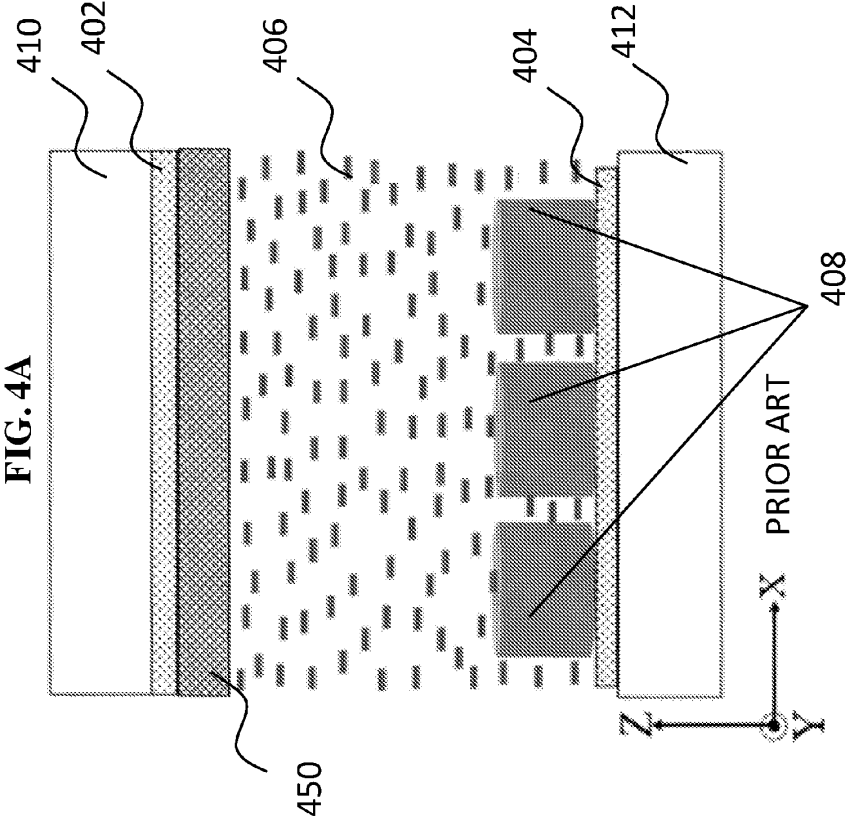


FIG. 4B

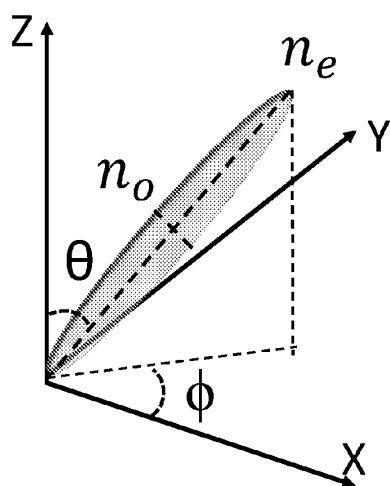


FIG. 5

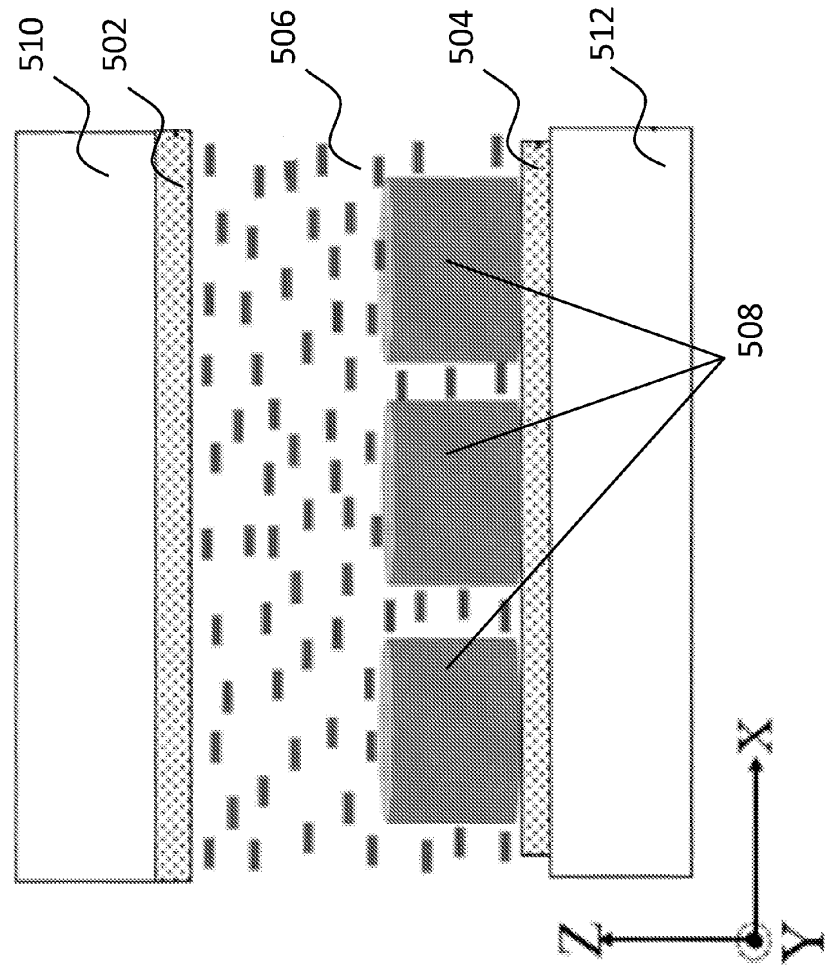


FIG. 6

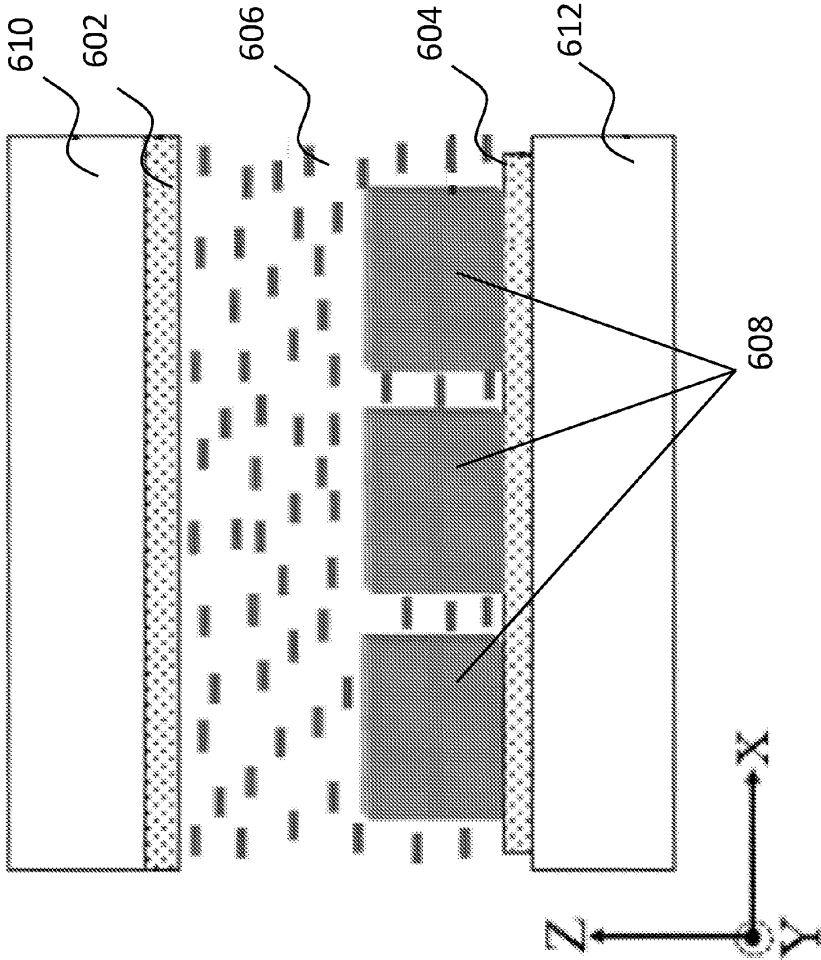


FIG. 7

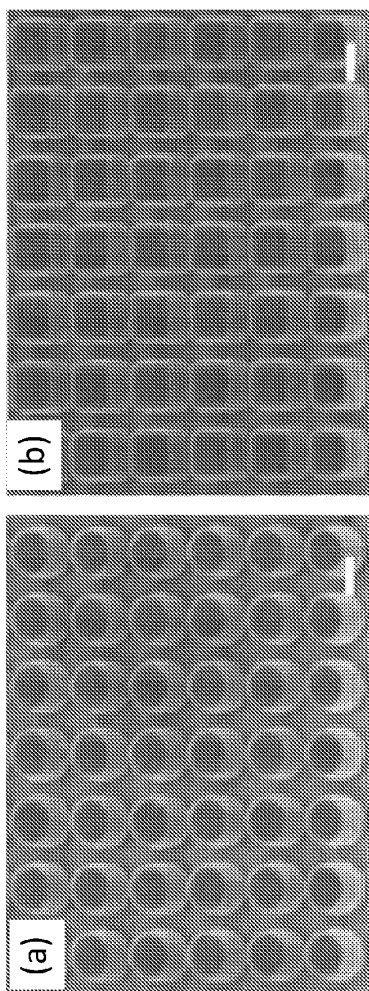


FIG. 8A

Transmittance

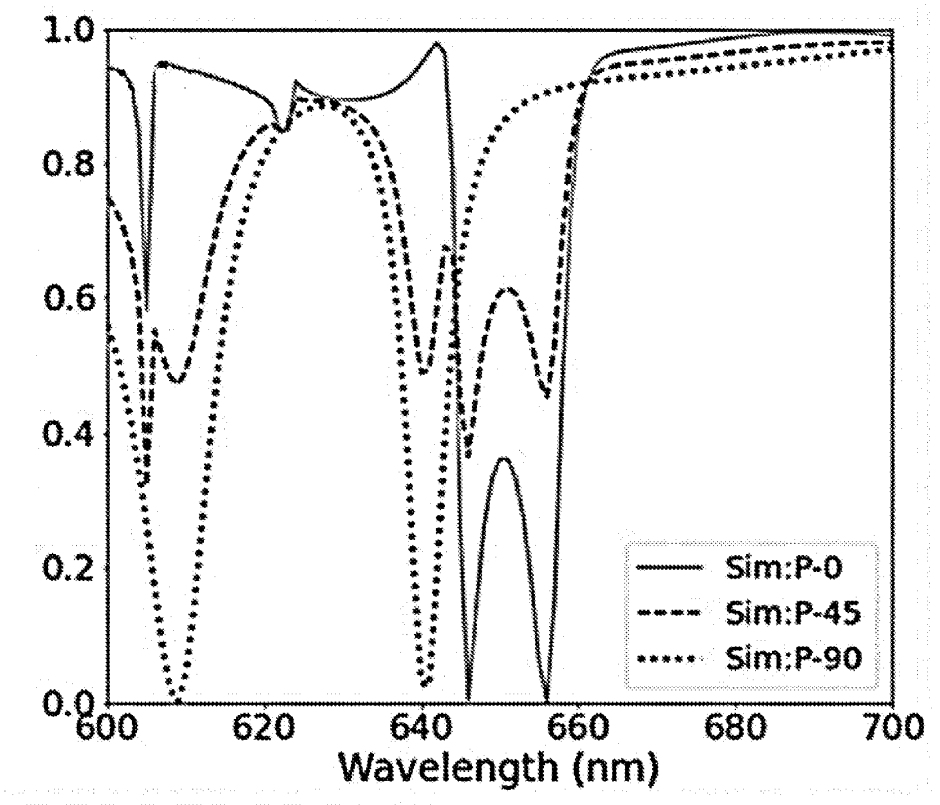


FIG. 8B

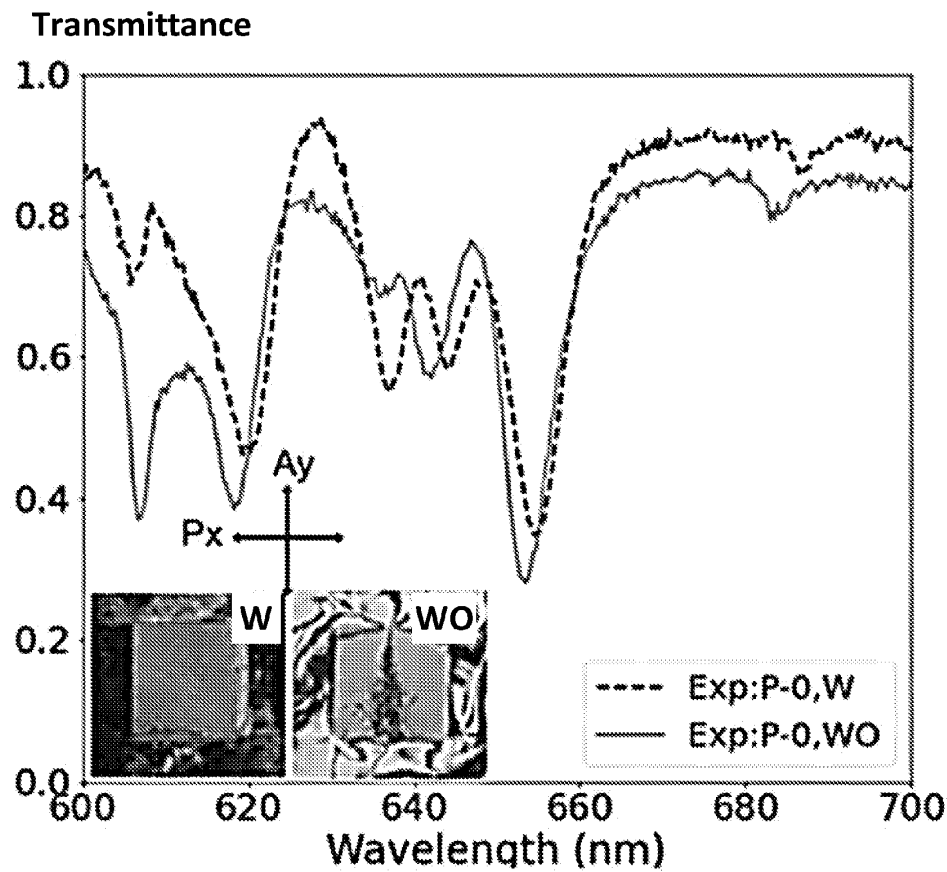


FIG. 8C

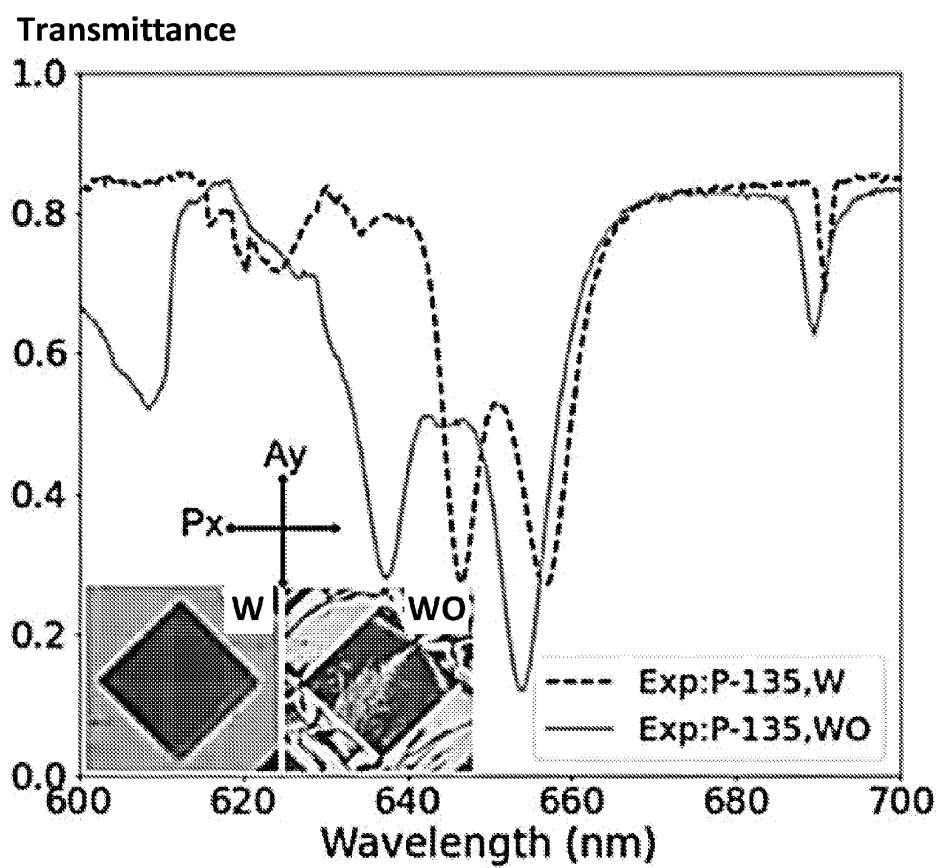


FIG. 8D

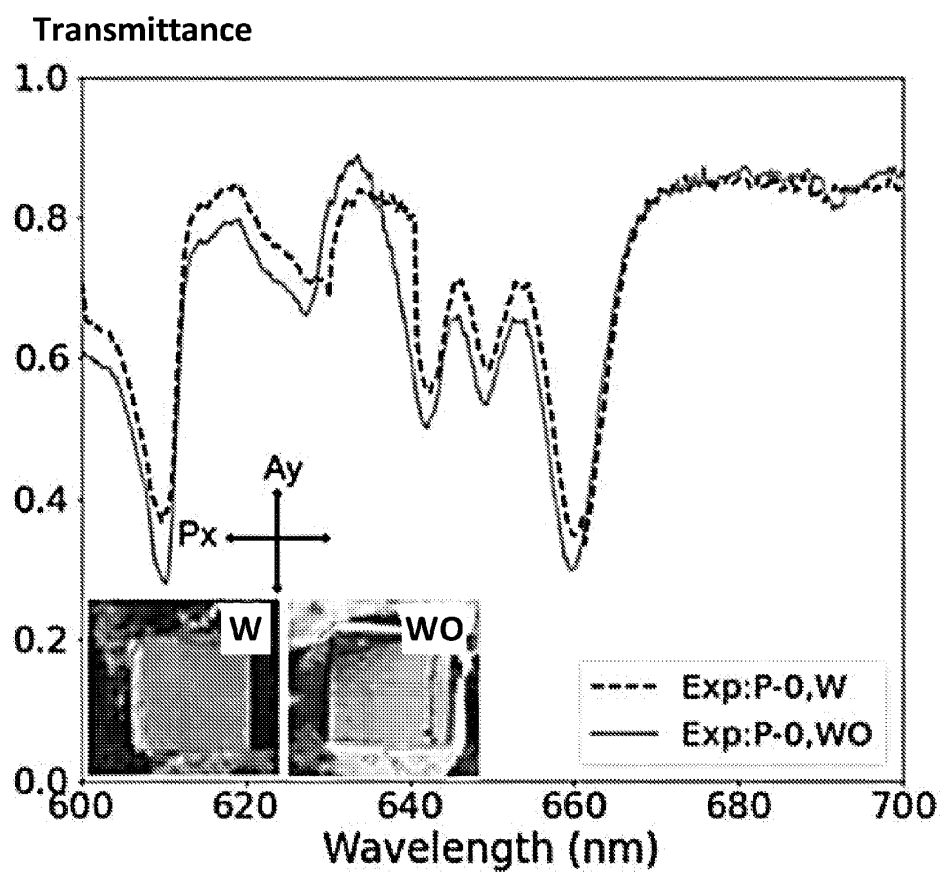


FIG. 8E

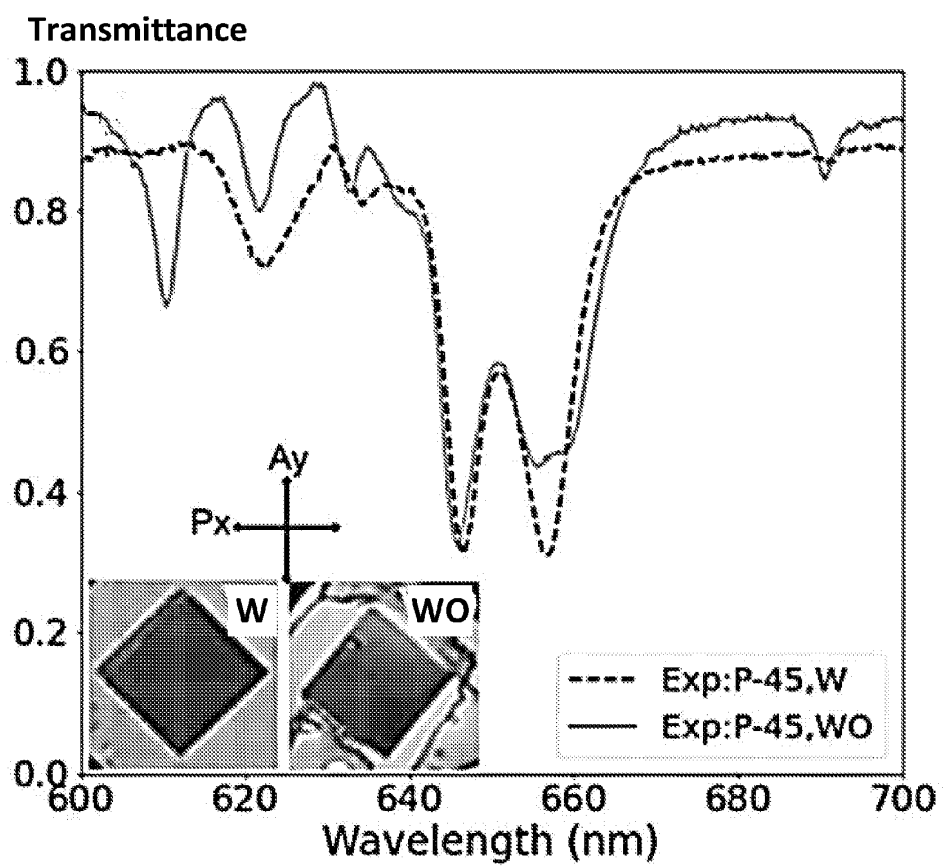


FIG. 9A

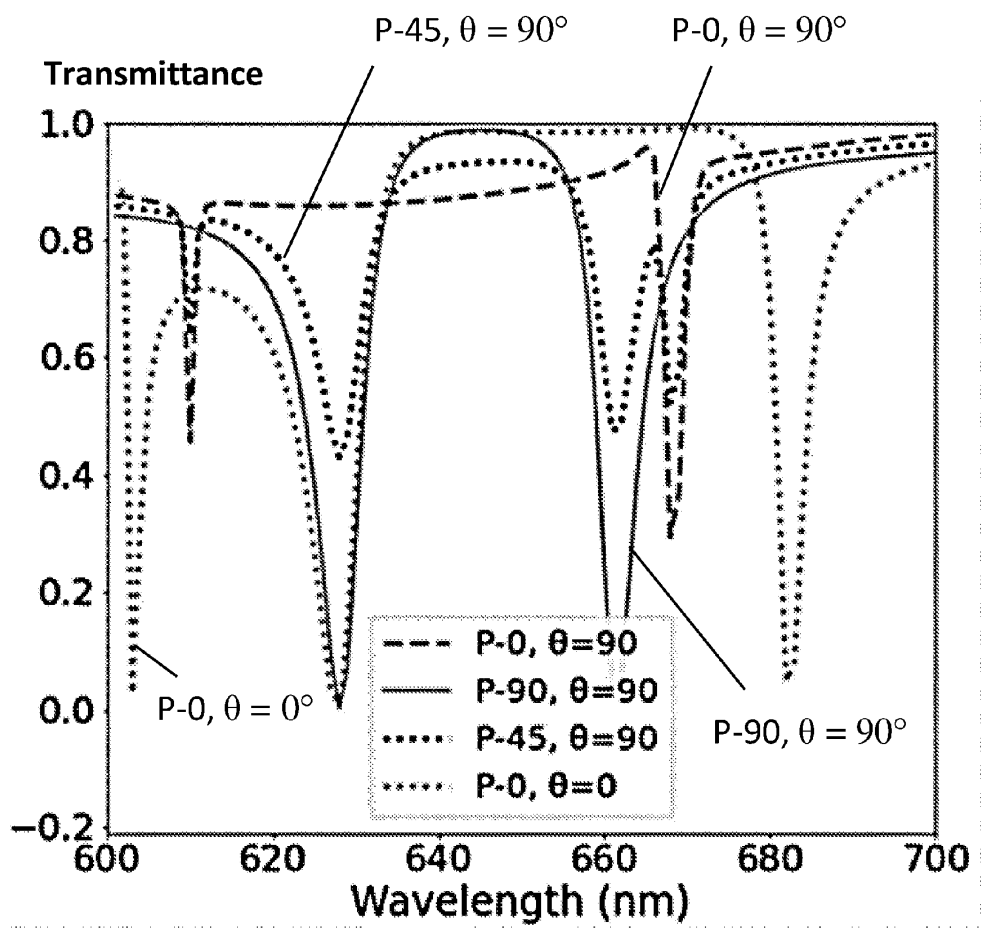


FIG. 9B

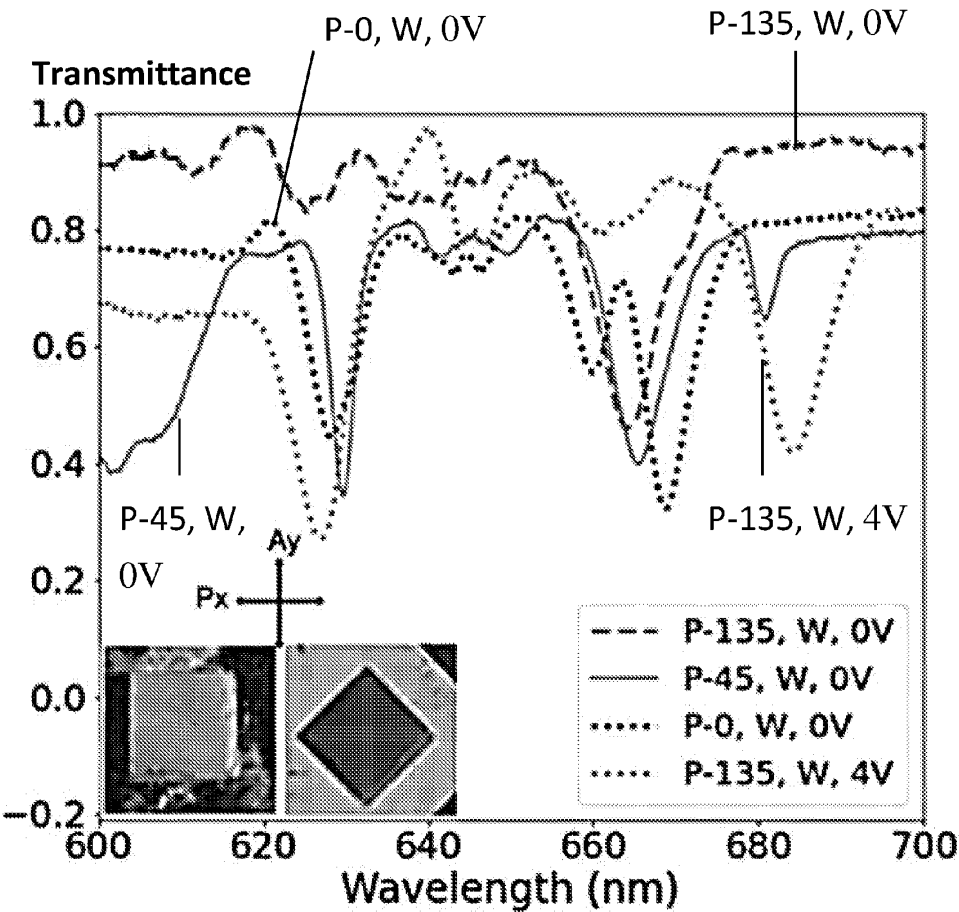


FIG. 9C

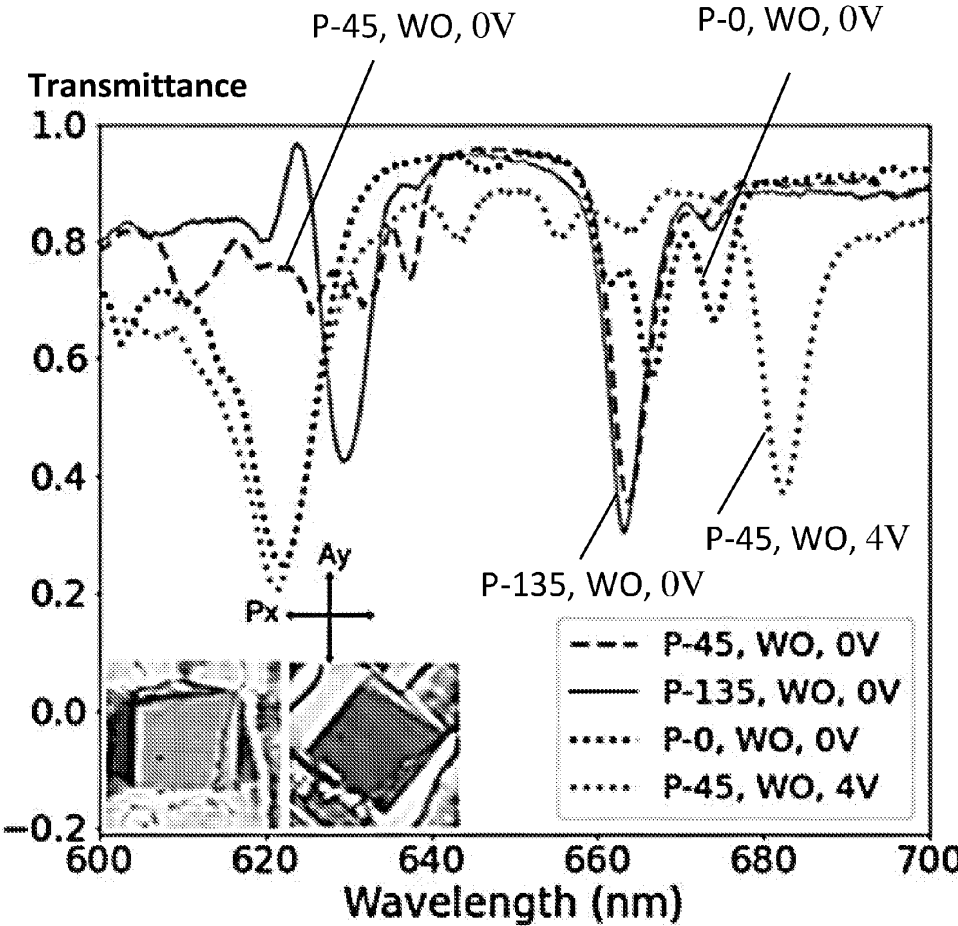


FIG. 10

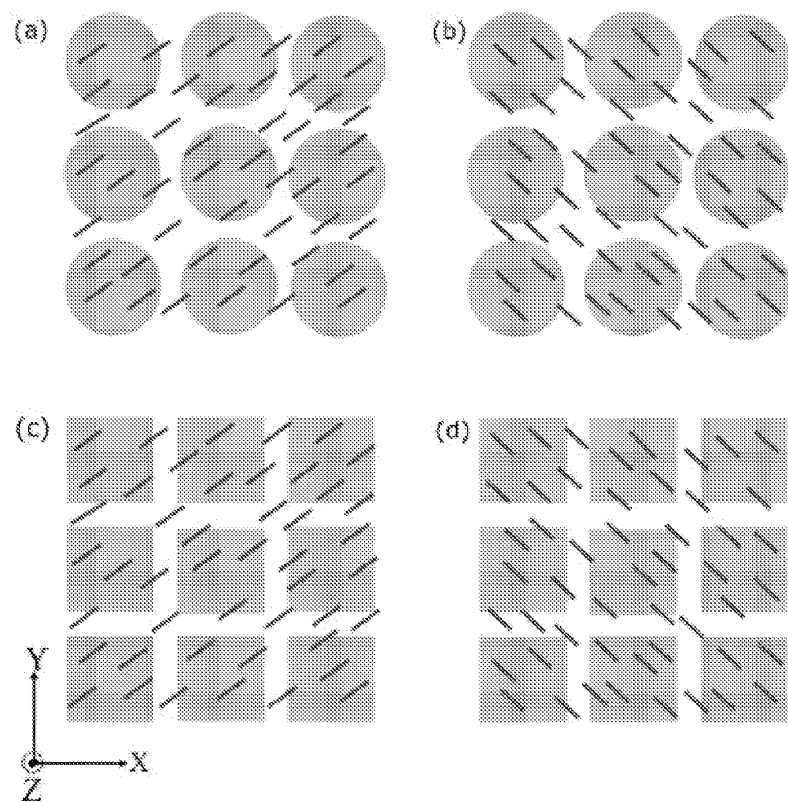


FIG. 11

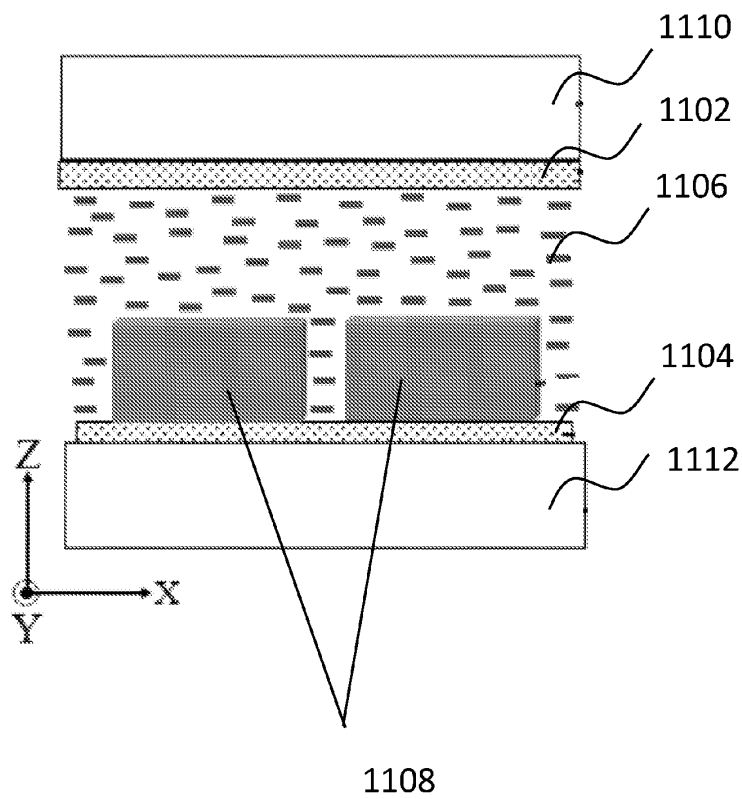


FIG. 12

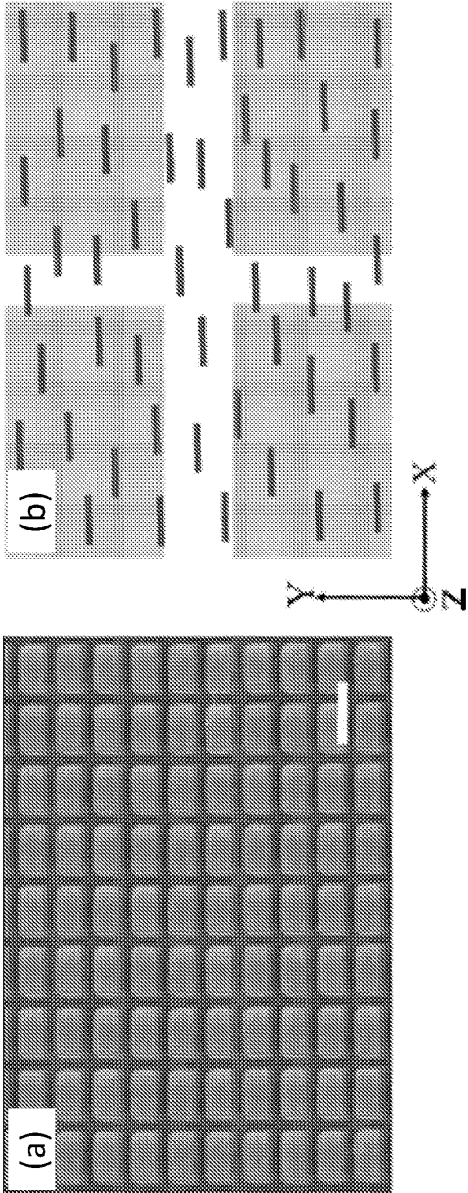


FIG. 13A

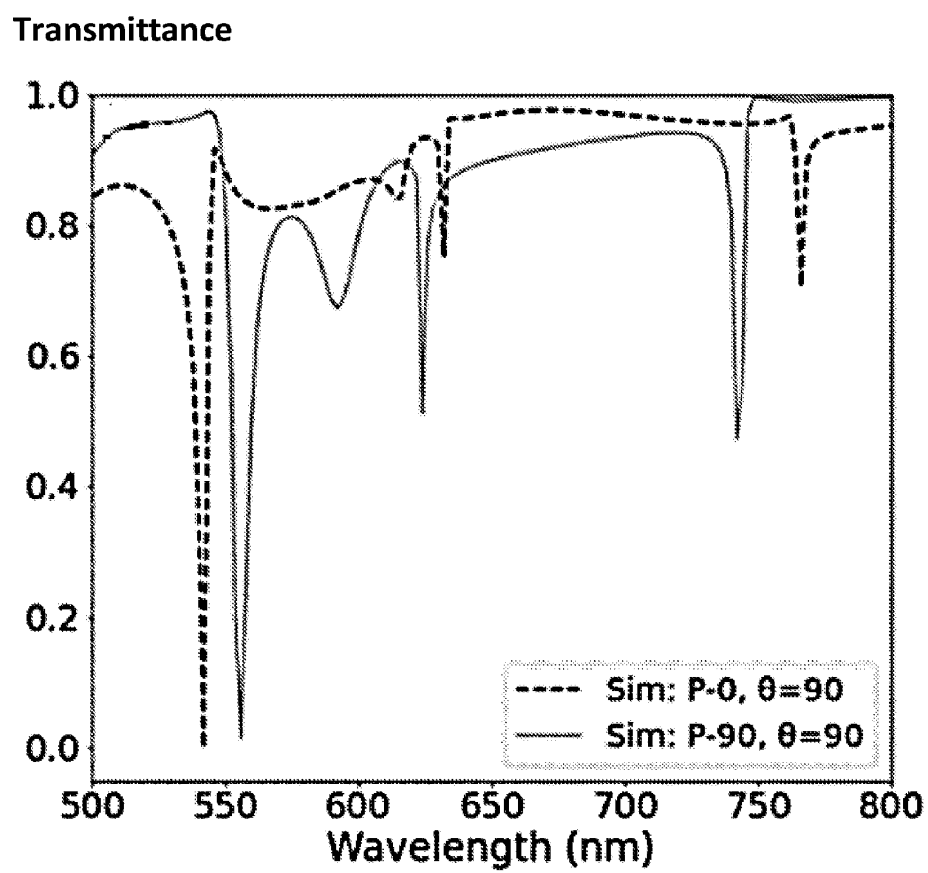


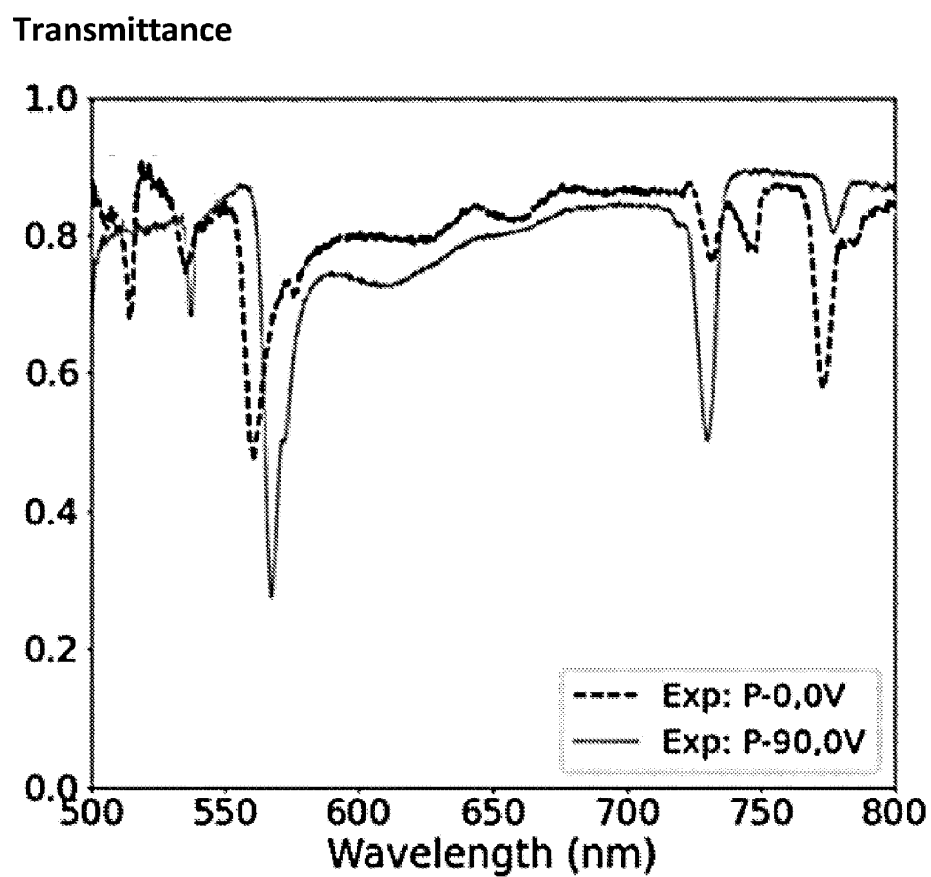
FIG. 13B

FIG. 14

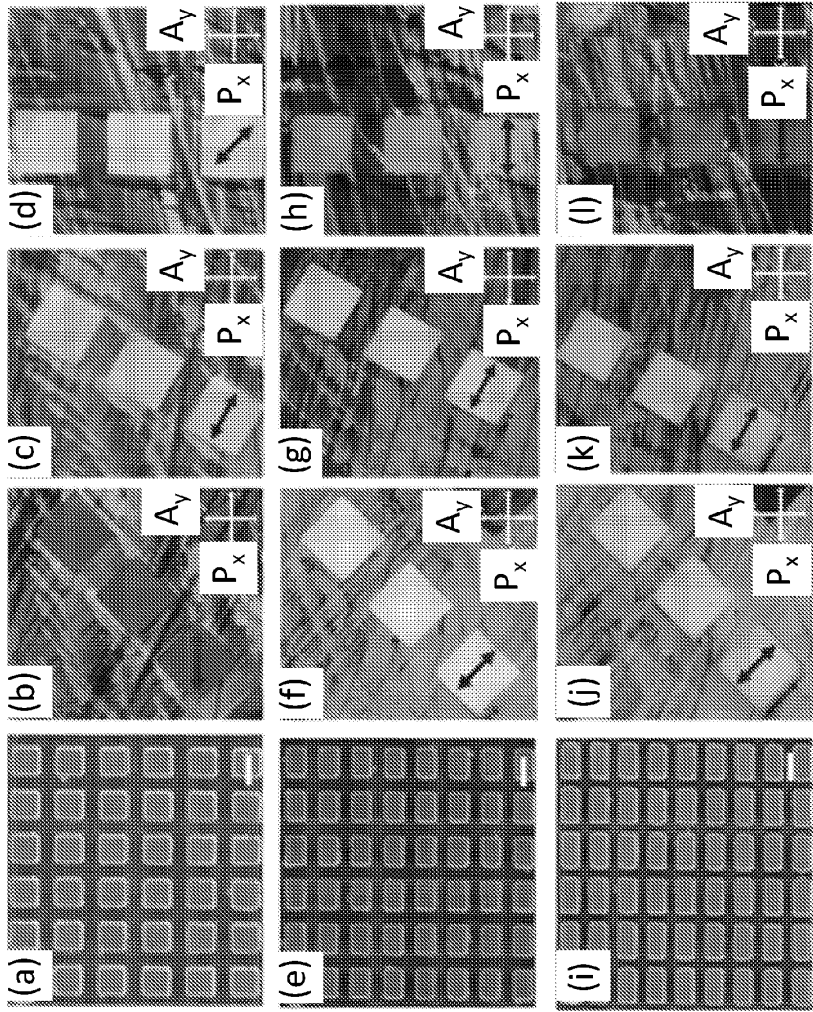


FIG. 15A

Transmittance

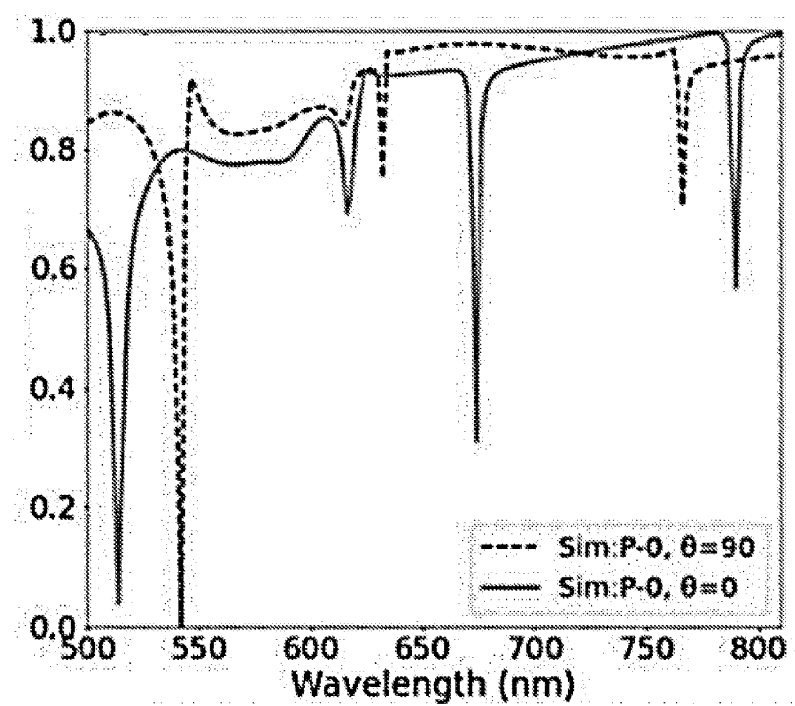


FIG. 15B

Transmittance

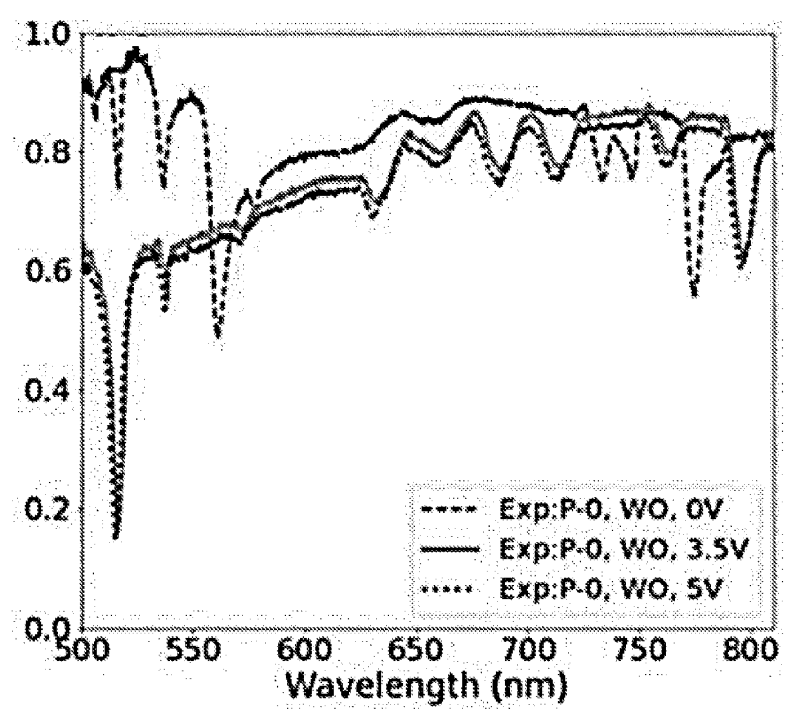


FIG. 15C

Transmittance

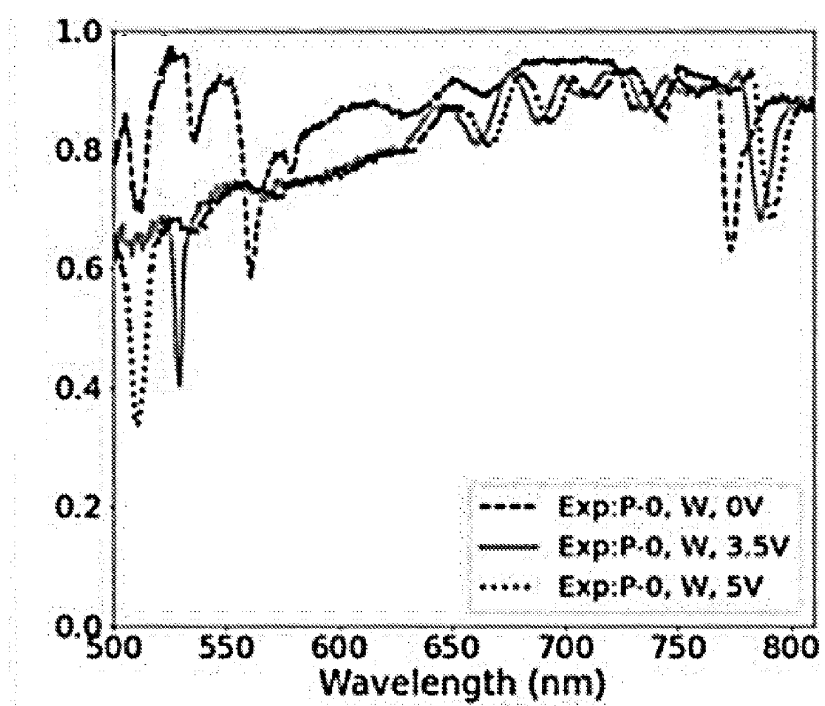


FIG. 16

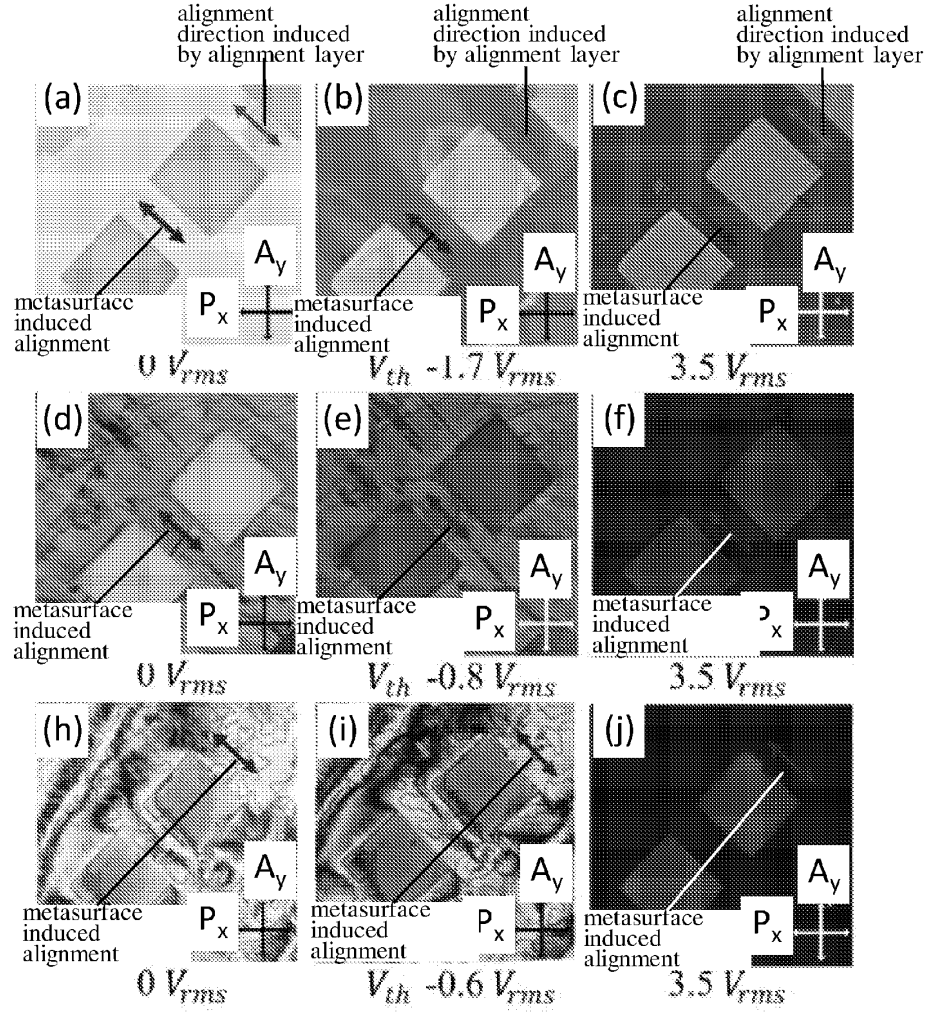


FIG. 17A

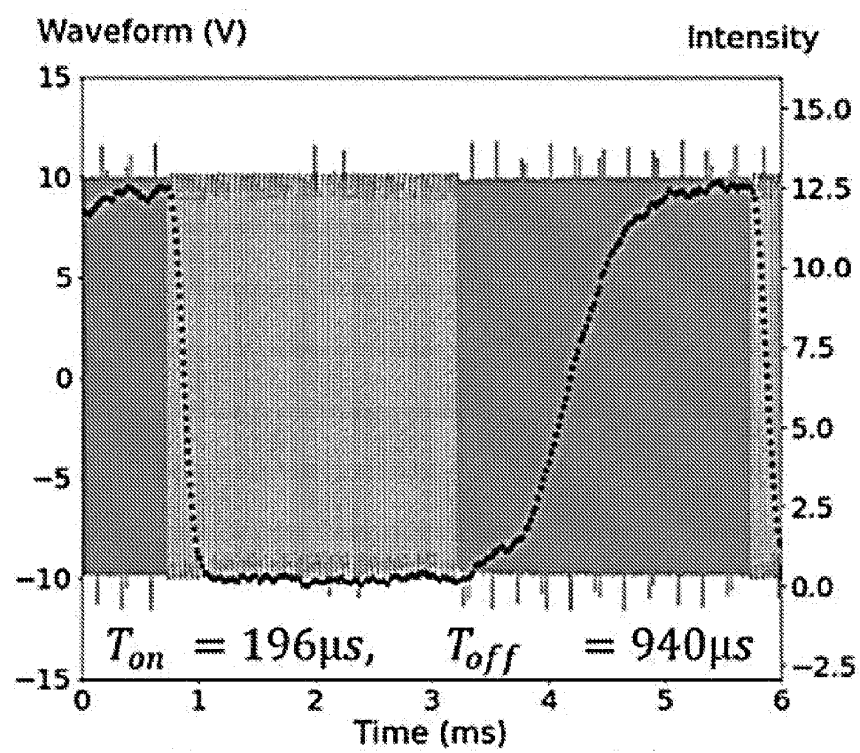


FIG. 17B

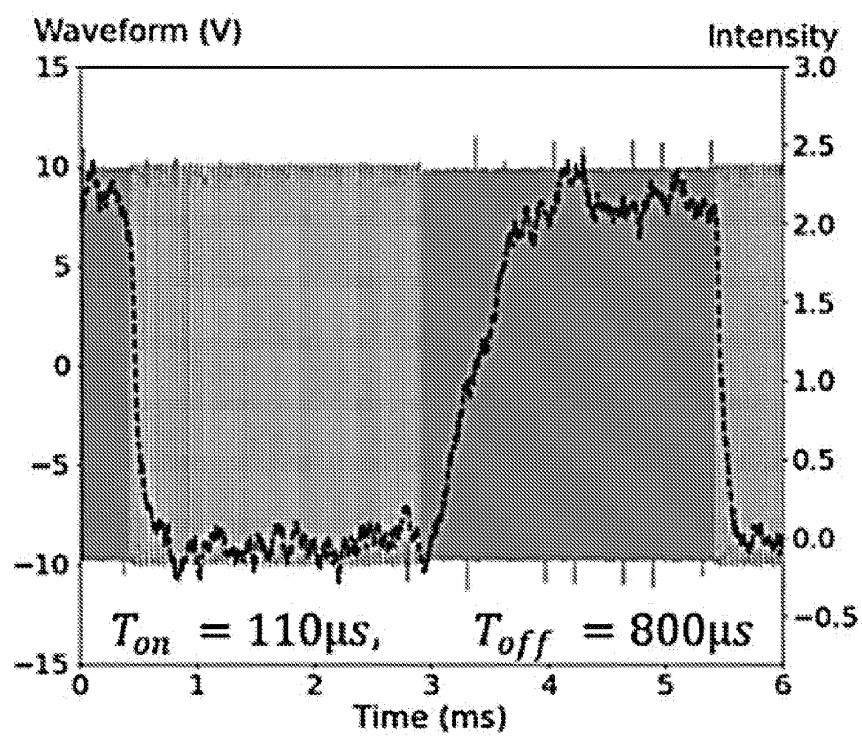
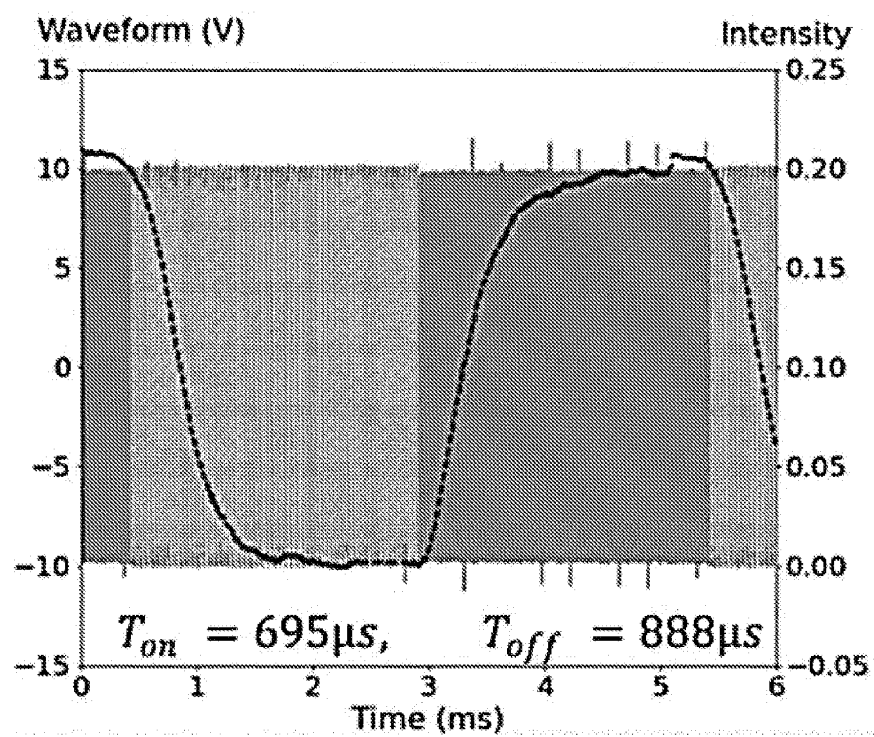


FIG. 17C



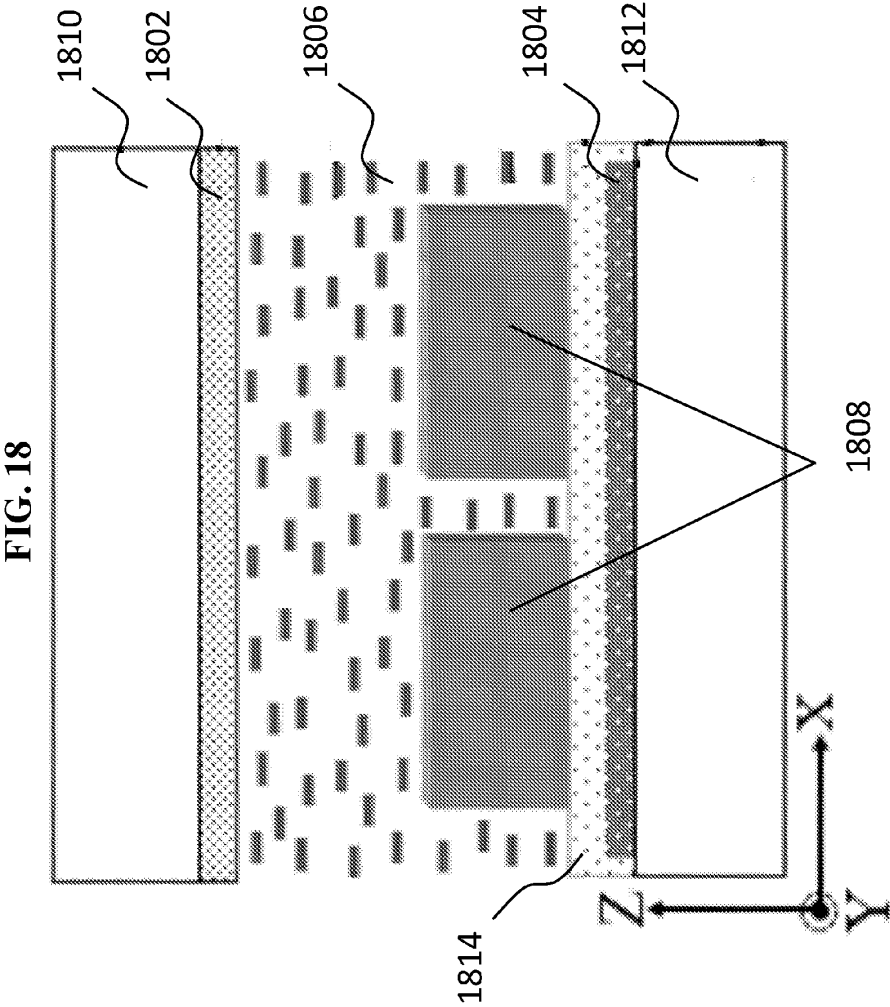
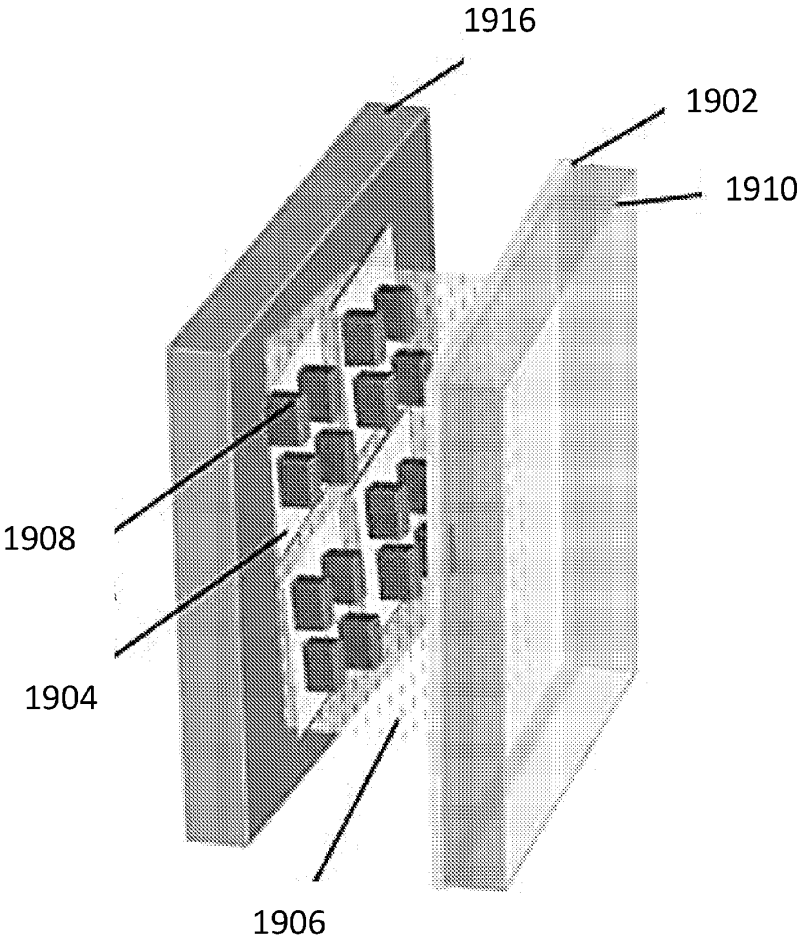
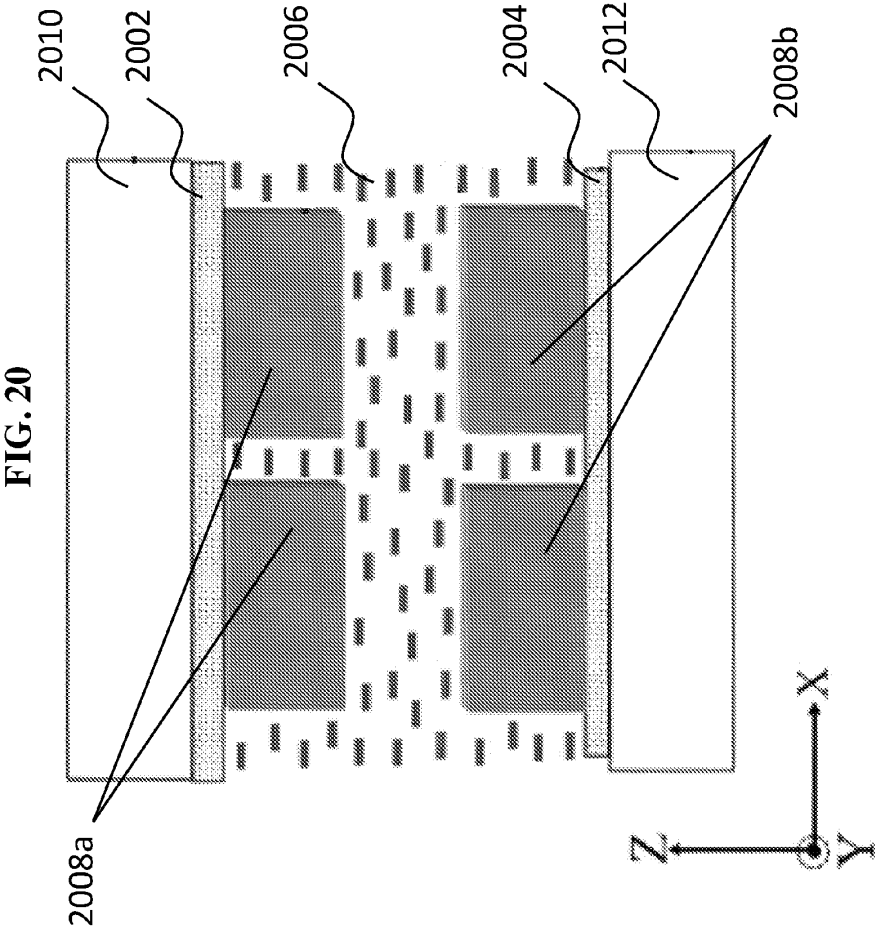


FIG. 19





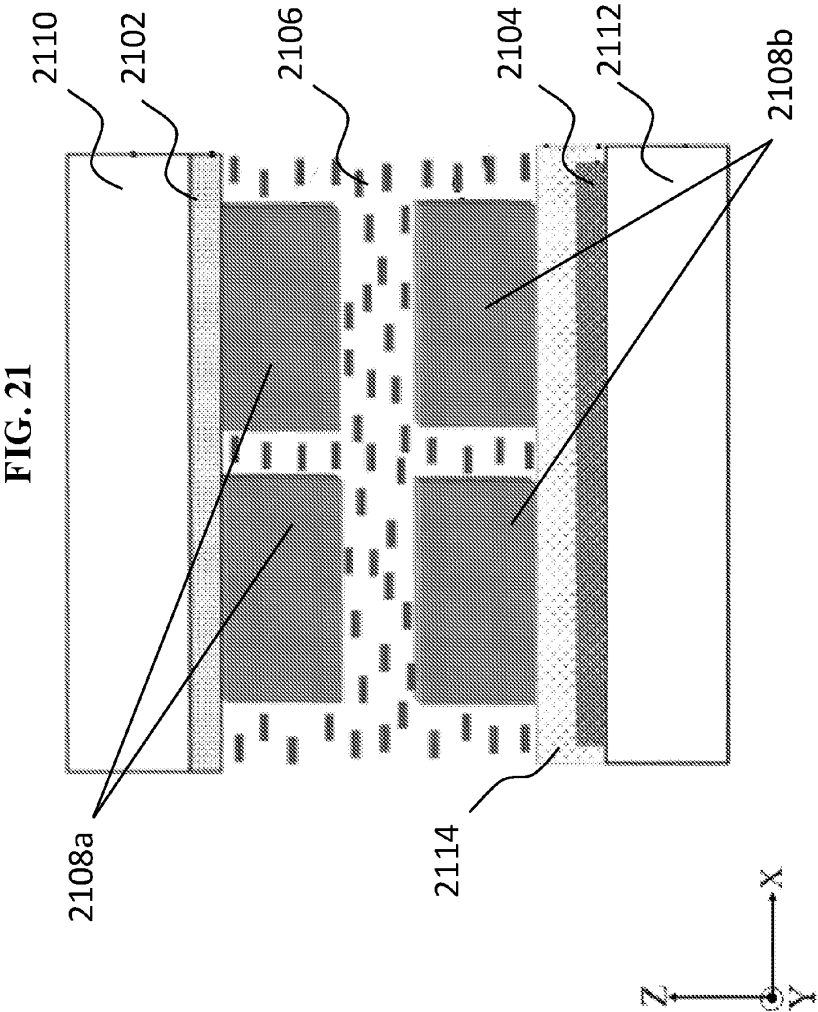


FIG. 22

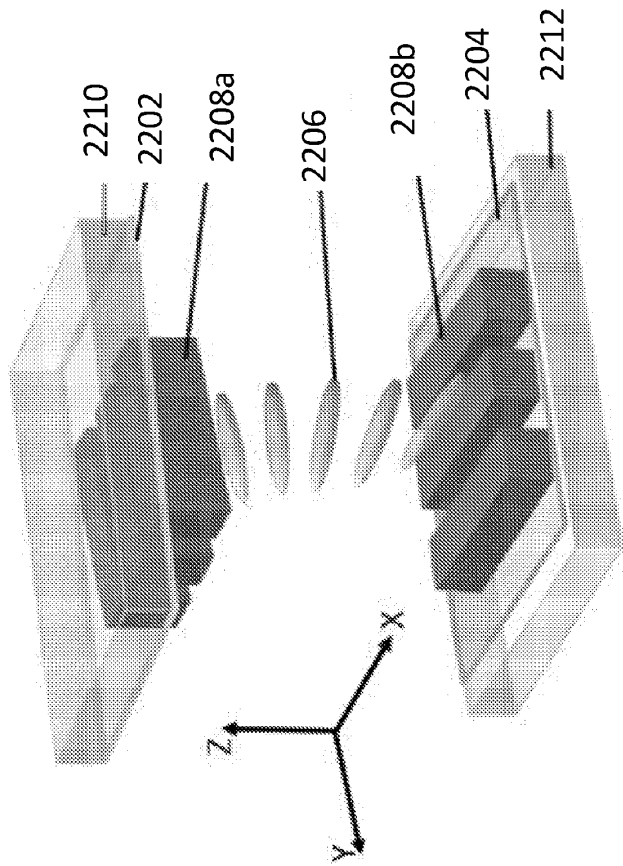


FIG. 23

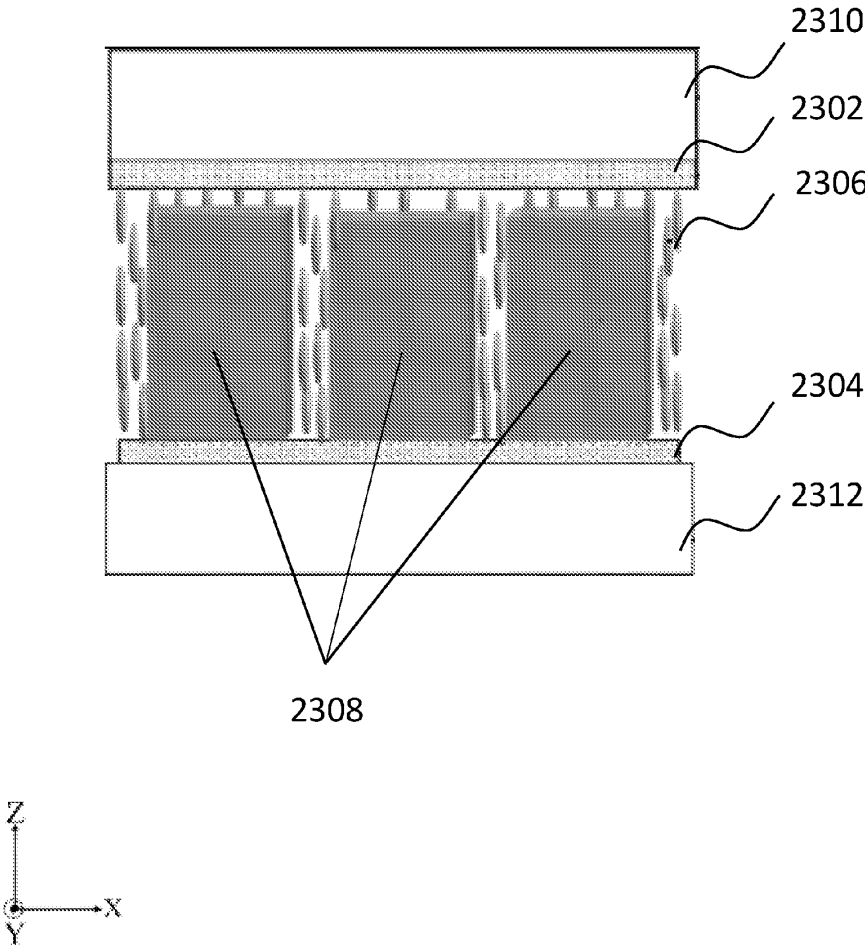


FIG. 24

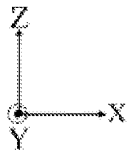
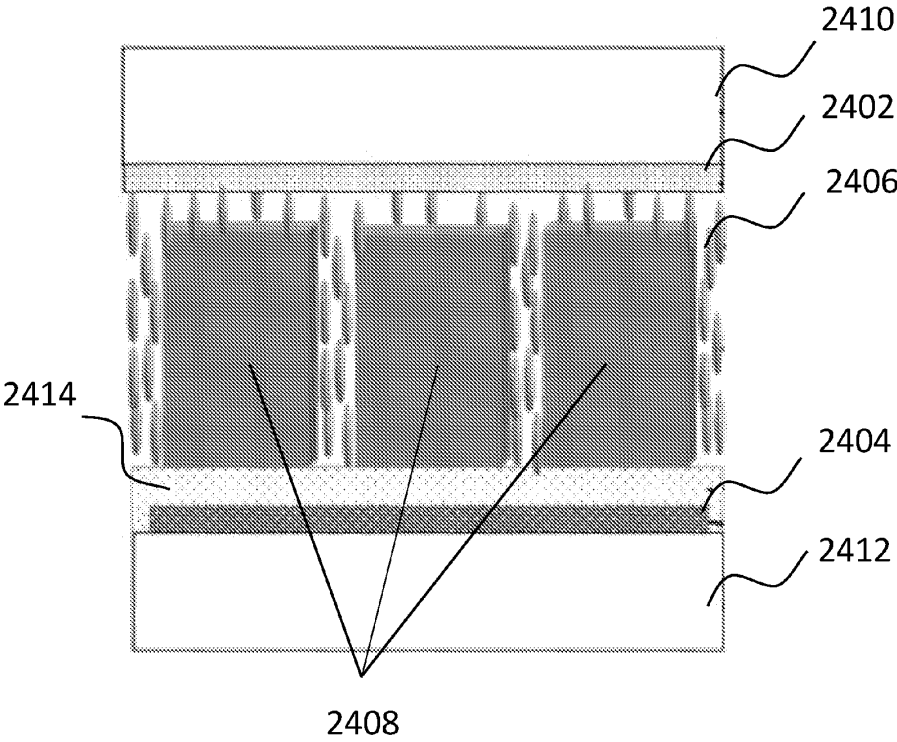


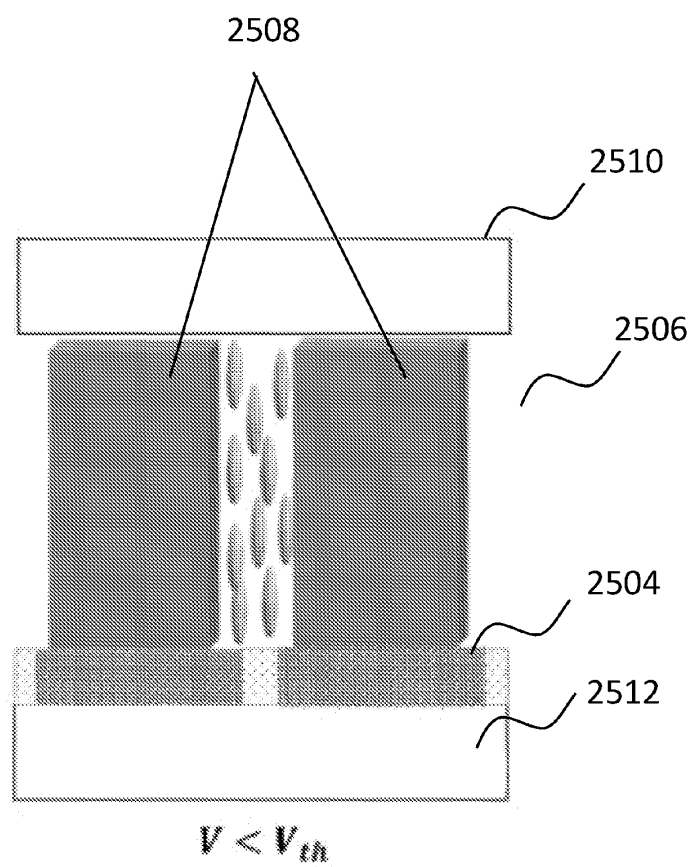
FIG. 25A

FIG. 25B

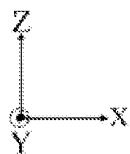
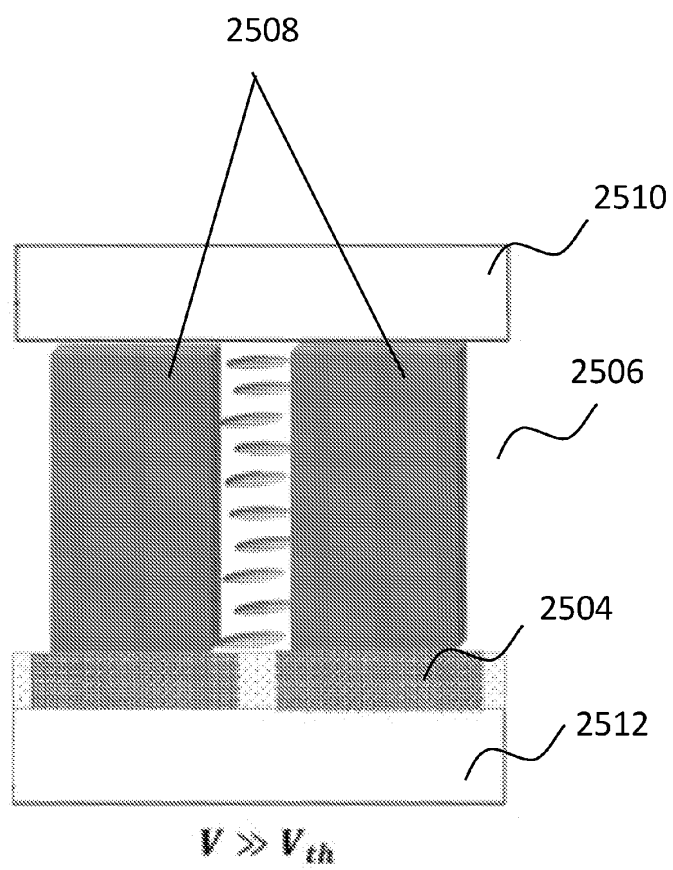


FIG. 26

Key technical Features	Embodiment	Device with alignment layer	Fabry Perot Multispectral SLM	Commercial LCOS-SLM
LC alignment	Pure metasurface induced	Polyimide or photoalignment	Polyimide	Polyimide or photoalignment
LC Thickness (d) * Pixel Pitch (PP)	d = 0.4 μm to 1 μm PP < 1 μm	d = 0.75 μm to 1.5 μm PP = 1.14 μm	d = 0.53 μm PP = 1.14 μm	d = 1.6 μm to 4.2 μm PP = 3.74 μm to 36 μm
Operating Voltage (V) & Response Speed (T)	V < 5V T < 1ms	V = 7V to 12V 1 ms < T < 5 ms	V ~ 8V 1 ms < T < 5 ms	V > 10 V T > 5 ms
Configuration	Transmissive or Reflective	Transmissive or Reflective	Reflective	Transmissive or Reflective
Phase Modulation	~2π	~2π	~2π	~2π