EXHIBIT N

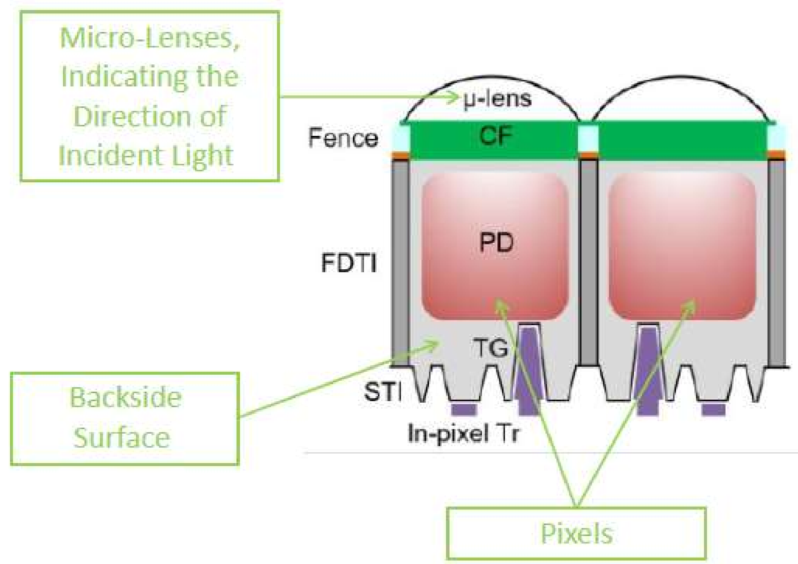
Infringement of U.S. Patent No. 11,721,714

ISOCELL HP2 Image Sensor
Samsung Galaxy S23 Ultra

Claim 1	
A light trapping device, comprising:	The Samsung Galaxy S23 Ultra is a light trapping device at least because it includes a Samsung ISOCELL sensor. In particular, the Samsung Galaxy S23 Ultra includes an ISOCELL HP2 sensor. The ISOCELL HP2 is a 200-megapixel image sensor for ultra-high resolution photos. *See, e.g.*, D-VGT Technology of ISOCELL Image Sensor, Samsung Electronics Corp., June 30, 2023, available at https://semiconductor.samsung.com/news-events/tech-blog/d-vtg-technology-of-isocell-image-sensor/ (last visited March 7, 2024).  Samsung Galaxy S23 Ultra, Samsung Electronics Corp.

U.S. Patent No. 11,721,714

Claim 1(a): at least one light sensitive pixel having a light incident surface, a backside surface opposite the light incident surface, and a peripheral sidewall disposed into at least a portion of the pixel and extending at least substantially around the pixel periphery;

Claim 1(a)	
at least one light sensitive pixel having a light incident surface, a backside surface opposite the light incident surface, and a peripheral sidewall disposed into at least a portion of the pixel and extending at least substantially around the pixel periphery;	The ISOCELL HP2 sensor from the Samsung Galaxy S23 Ultra includes at least one light sensitive pixel having a light incident surface, a backside surface opposite the light incident surface, and a peripheral sidewall disposed into at least a portion of the pixel and extending at least substantially around the pixel periphery. The below illustration from Samsung shows that the ISOCELL HP2 includes at least one light sensitive pixel having a light incident surface and a backside surface. Figure 5.8.1 IEEE 359 1(a)  *See, e.g.*, Sungbong Park, *et al.*, *A 64Mpixel CMOS Image Sensor with 0.56μm Unit Pixels Separated by Front Deep-Trench Isolation*, 2022 IEEE International Solid-State Circuits Conference, March 17, 2022.

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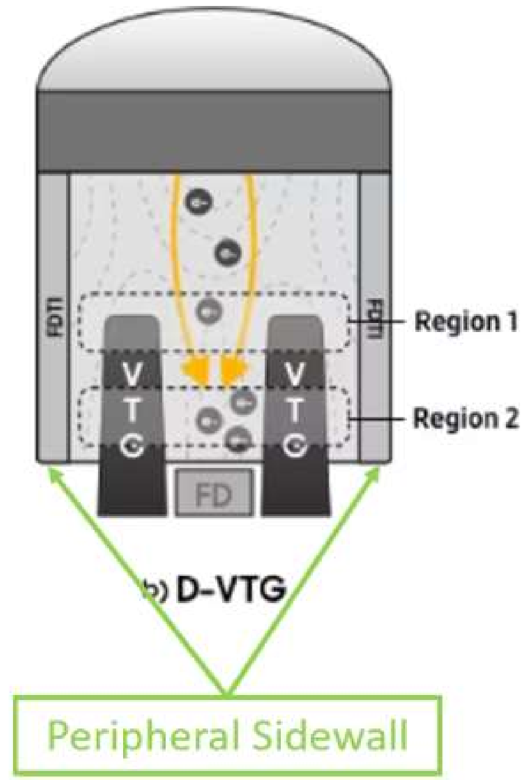
Claim 1(a): at least one light sensitive pixel having a light incident surface, a backside surface opposite the light incident surface, and a peripheral sidewall disposed into at least a portion of the pixel and extending at least substantially around the pixel periphery;

Claim 1(a)	
	 *See, e.g.*, D-VGT Technology of ISOCELL Image Sensor, Samsung Electronics Corp., June 30, 2023, available at https://semiconductor.samsung.com/news-events/tech-blog/d-vtg-technology-of-isocell-image-sensor/ (last visited March 8, 2024).

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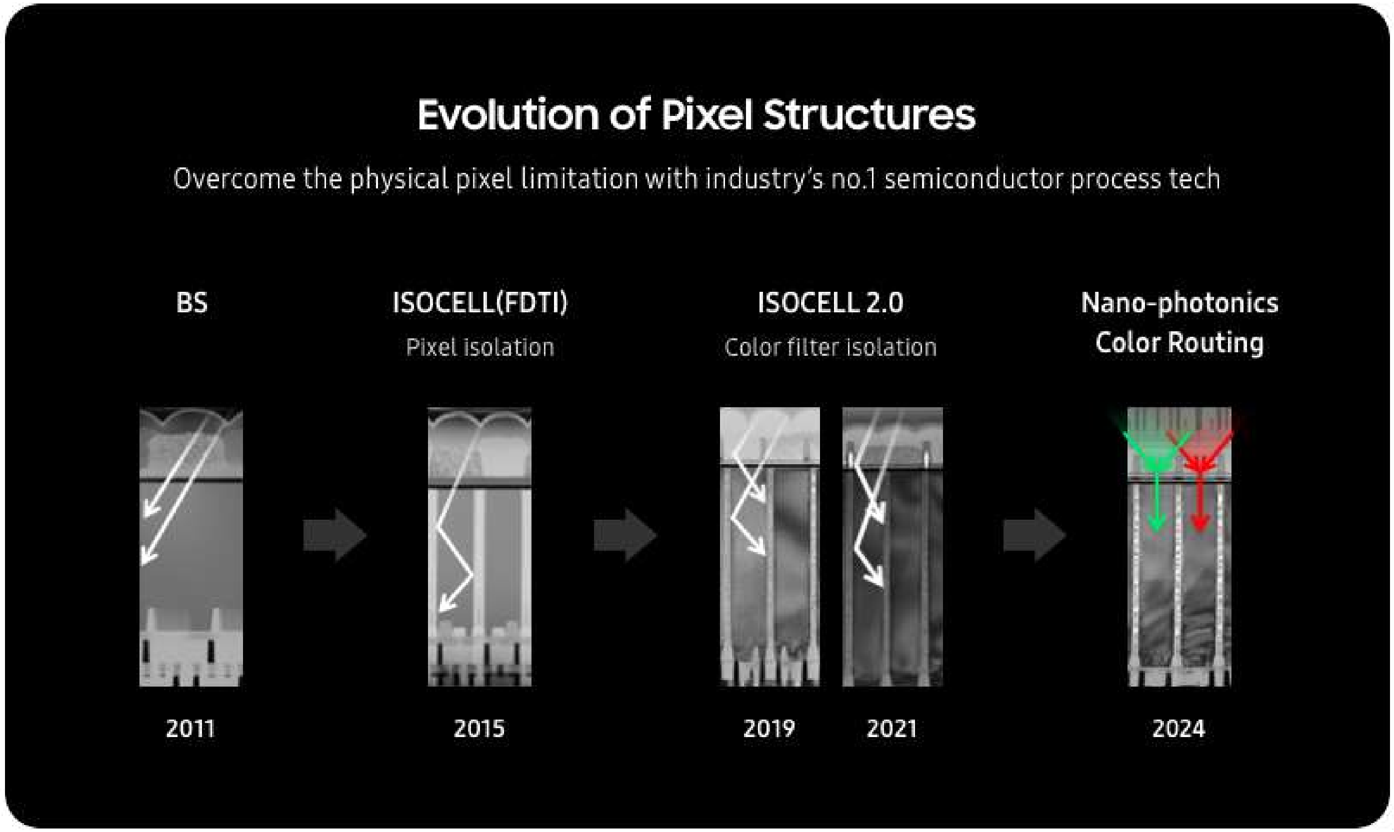
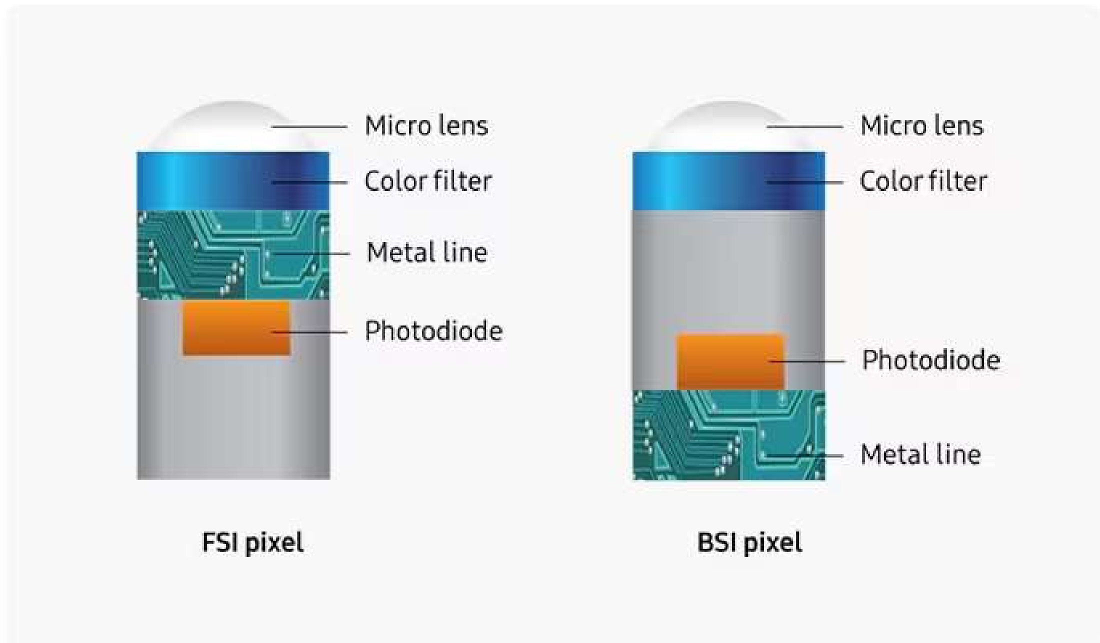
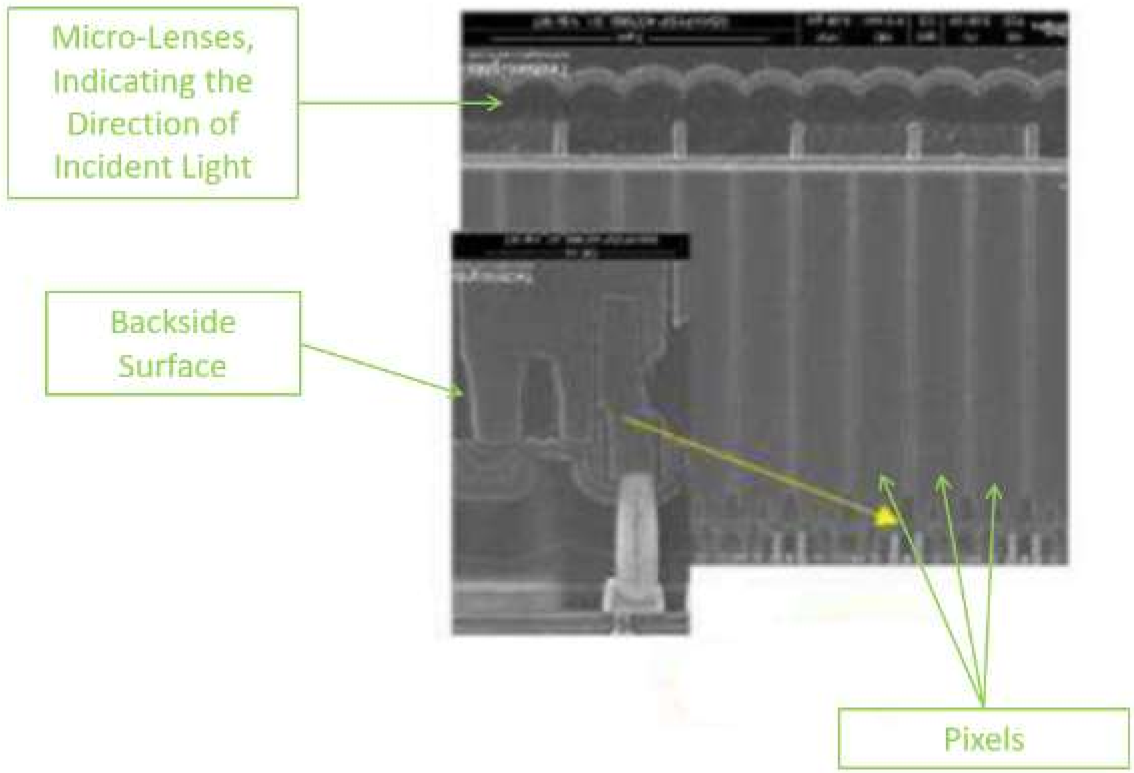
Claim 1(a): at least one light sensitive pixel having a light incident surface, a backside surface opposite the light incident surface, and a peripheral sidewall disposed into at least a portion of the pixel and extending at least substantially around the pixel periphery;

Claim 1(a)	
	 https://semiconductor.samsung.com/news-events/tech-blog/how-isocell-unlock-the-future-of-camera-experiences/

Claim 1(b)	
a backside light trapping material at least partially covering the backside surface; and	The ISOCELL HP2 sensor includes a backside light trapping material at least partially covering the backside surface. The ISOCELL HP2 is a stacked backside illuminated image sensor, showing the presence of a backside light trapping material. *See, e.g.*, Sungbong Park, *et al.*, *A 64Mpixel CMOS Image Sensor with 0.56µm Unit Pixels Separated by Front Deep-Trench Isolation*, 2022 IEEE International Solid-State Circuits Conference, March 17, 2022.  https://semiconductor.samsung.com/news-events/tech-blog/isocell-plus-leading-the-next-generation-of-image-sensors/

<table>
<tr><th>Claim 1(b)</th><th></th></tr>
<tr><td></td><td>

The below image shows the backside light trapping material for the ISOCELL HP2 in the Samsung Galaxy S23 Ultra.

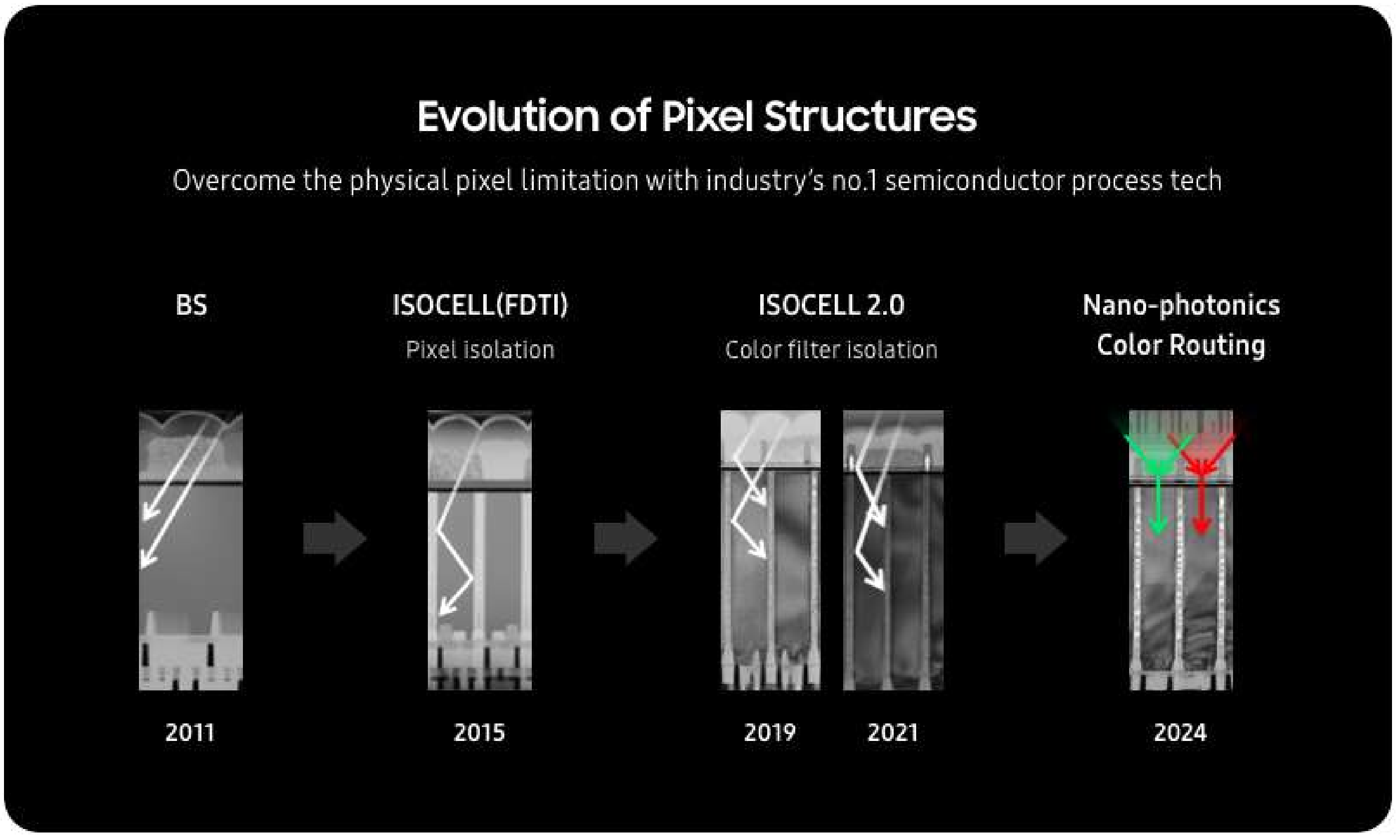


Scott-Thomas, John, "*Trends and Developments in State-of-the-Art CMOS Image Sensors*", TechInsight Inc., (undated) ("Samsung's most recent 200 MP sensor, the HP2 found in the Galaxy S23 Ultra, also uses a Dual Vertical Gate") (citing Jungbin Yun, *et al.*, "*A 0.6 µm Small Pixel for High Resolution CMOS Image Sensor with Full Well Capacity of 10,000e- by Dual Vertical Transfer Gate Technology*", Samsung Electronics, Symposium on VLSI Technology & Circuits Digest of Technical Papers, 2022, pp.351–352.)

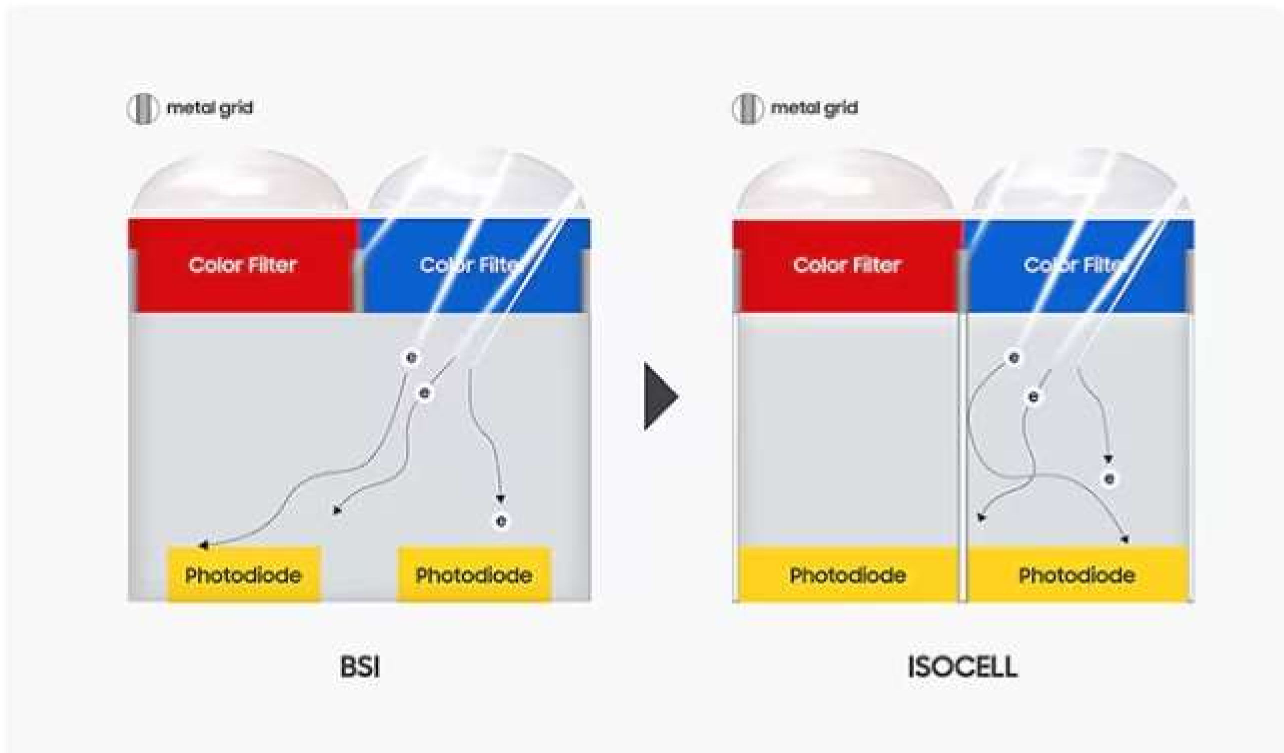
</td></tr>
</table>

<table>
<tr><th>Claim 1(c)</th><th></th></tr>
<tr><td>a peripheral light trapping material substantially covering the peripheral sidewall;</td><td>The ISOCELL HP2 sensor includes a peripheral light trapping material substantially covering the peripheral sidewall.

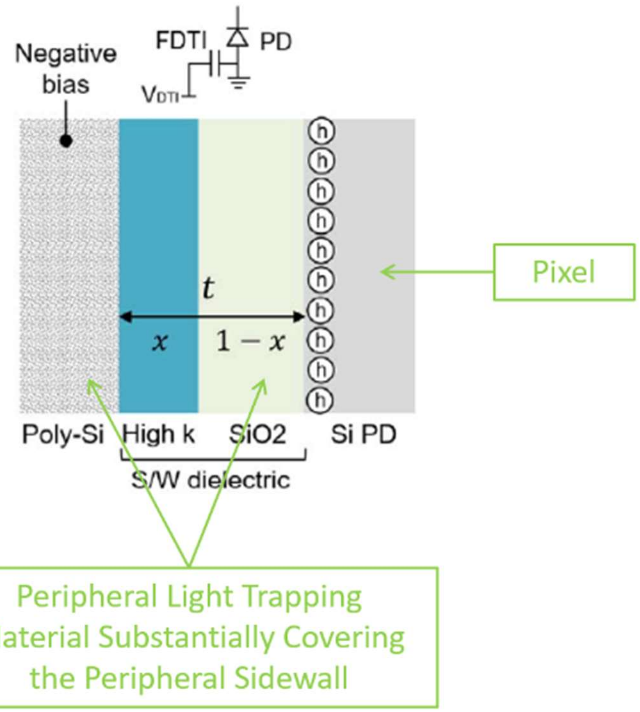
The peripheral light trapping material in the ISOCELL HP2 is shown below:



https://semiconductor.samsung.com/news-events/tech-blog/how-isocell-unlock-the-future-of-camera-experiences/</td></tr>
</table>

Claim 1(d)	
wherein light contacting the backside light trapping material or the peripheral light trapping material is reflected back toward the pixel;	The ISOCELL HP2 sensor includes a backside light trapping material and a peripheral light trapping material, wherein light contacting the backside light trapping material or the peripheral light trapping material is reflected back toward the pixel. As shown below, light contacting the peripheral light trapping material will be reflected back toward the pixel in Samsung's ISOCELL devices.  ISOCELL Plus: Leading the next generation of image sensors, Samsung Corp., https://semiconductor.samsung.com/news-events/tech-blog/isocell-plus-leading-the-next-generation-of-image-sensors/ (last visited March 5, 2024)

Claim 1(e): wherein at least one of the backside light trapping material or the peripheral light trapping material includes a high refractive index material sandwiched between two low refractive index materials.

Claim 1(e)	
wherein at least one of the backside light trapping material or the peripheral light trapping material includes a high refractive index material sandwiched between two low refractive index materials.	The ISOCELL HP2 sensor includes a backside light trapping material and a peripheral light trapping material, wherein at least one of the backside light trapping material or the peripheral light trapping material includes a high refractive index material sandwiched between two low refractive index materials. The ISOCELL HP2 includes 200-megapixels with peripheral light trapping material including, for example, polysilicon sandwiched between a High k dielectric and SiO2.  *See, e.g.*, Sungbong Park, *et al.*, *A 64Mpixel CMOS Image Sensor with 0.56µm Unit Pixels Separated by Front Deep-Trench Isolation*, 2022 IEEE International Solid-State Circuits Conference, March 17, 2022.

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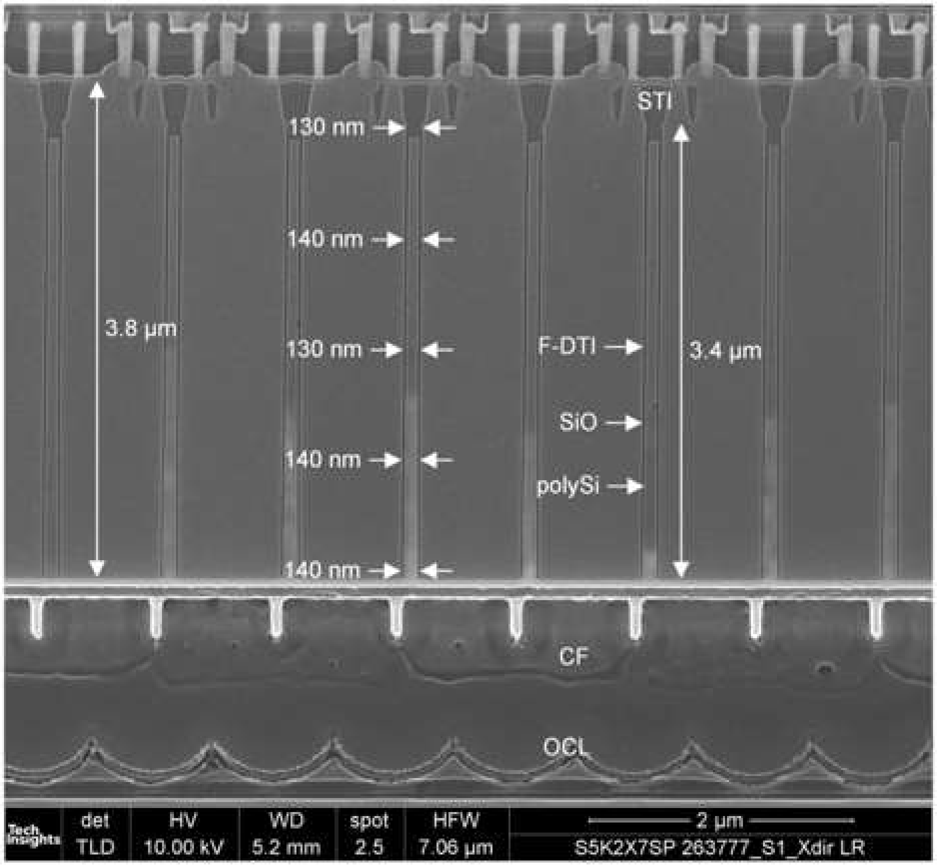
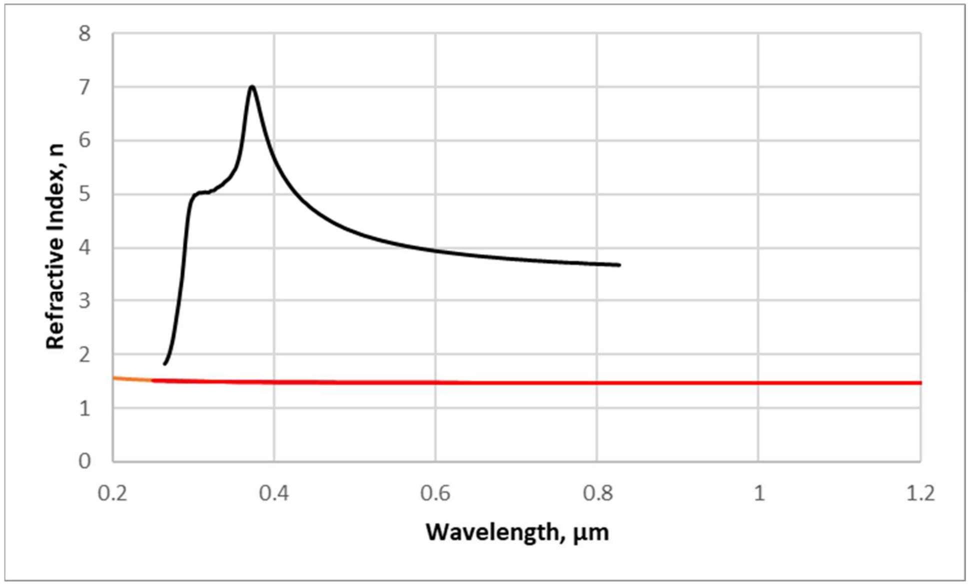
Claim 1(e): wherein at least one of the backside light trapping material or the peripheral light trapping material includes a high refractive index material sandwiched between two low refractive index materials.

Claim 1(e)	
	 Figure 4–0.90µm pixel ISOCELL Gen 3 F-DTI–SEM http://zhuanlan.zhihu.com/p/605284749

Claim 1(e): wherein at least one of the backside light trapping material or the peripheral light trapping material includes a high refractive index material sandwiched between two low refractive index materials.

Claim 1(e)	
	As shown below, the index of refraction for polysilicon (black curve) is at least 0.2 greater than silicon dioxide (colored curves).  Compiled from RefractiveIndex.info (last visited March 8, 2024) (Polysilicon: https://refractiveindex.info/?shelf=3d&book=crystals&page=silicon; Silicon Dioxide: https://refractiveindex.info/?shelf=main&book=SiO2&page=Rodriguez-de_Marcos, https://refractiveindex.info/?shelf=main&book=SiO2&page=Gao, https://refractiveindex.info/?shelf=main&book=SiO2&page=Lemarchand) (last visited March 8, 2024).