

United States Patents Issued to Dr. Eric R. Fossum

185 issued U.S. patents and 104 independent patent groups as of 20 Sept 2024

For Listing by Patent Groups [click here](#)

	Inventors	Patent Title	U.S. Patent No.
1	E.R. Fossum	<i>Charge-coupled device differencer</i>	4,686,648
2	P.R. Prucnal, E.R. Fossum and R.M. Osgood	<i>Integrated fiber optic coupler for VHSIC/VLSI Interconnects</i>	4,744,623
3	E.R. Fossum and S.S. Todorov	<i>Method of forming dielectric thin films on silicon by low energy ion beam bombardment</i>	4,776,925
4	E.R. Fossum, P.D. Kirchner, G.D. Pettit, A.C. Warren and J.M. Woodall	<i>Submicron dimension compound semiconductor fabrication using thermal etching</i>	4,920,069
5	E.R. Fossum and S.E. Kemeny	<i>Trench-defined CCD structure</i>	5,055,900
6	E.R. Fossum and F.J. Grunthaner	<i>Method for producing a hybridization of detector array and integrated circuit for readout</i>	5,236,871
7	E.R. Fossum, T.J. Cunningham, T.Krabach and C. Staller	<i>Monolithic In-based III-V compound semiconductor focal plane array cell with single stage CCD output</i>	5,386,128
8	E.R. Fossum, S.K. Mendis and S.E. Kemeny	<i>CMOS active pixel image sensor</i>	5,471,515
9	S.E. Kemeny, E.R. Fossum and R. H. Nixon	<i>Digital parallel processor array for path planning</i>	5,548,773
10	E.R. Fossum and B. Pain	<i>Solid-state image sensor with focal-plane digital photon-counting pixel array</i>	5,665,959
11	E.R. Fossum, Z. Zhou and B. Pain	<i>Successive approximation ADC for focal plane applications using balanced charge integrating amplifiers</i>	5,793,322
12	E.R. Fossum and R.H. Nixon	<i>CMOS active pixel sensor type imaging system on a chip</i>	5,841,126
13	E.R. Fossum and Z. Zhou	<i>Capacitively coupled successive approximation ultra low power analog to digital converter</i>	5,880,691
14	B. Pain, J. Nakamura and E.R. Fossum	<i>On-focal-plane analog to digital conversion for current-mode imaging devices</i>	5,886,659
15	E.R. Fossum	<i>Self-triggered X-ray sensor</i>	5,887,049
16	Z. Zhou, E.R. Fossum and B. Pain	<i>Integrated sensor with frame memory and programmable resolution for light adaptive imaging</i>	5,909,026
17	E.R.Fossum, S. Kemeny and B. Pain	<i>Active pixel sensor with multiresolution readout</i>	5,949,483
18	Y. Wang and E.R. Fossum	<i>Light-sensing array with wedge-like reflective optical concentrators</i>	5,952,645
19	E.R. Fossum	<i>Active pixel sensors with substantially planarized color filtering elements</i>	5,990,506

20	E.R. Fossum	<i>Median filter with embedded analog-to-digital converter</i>	5,995,163
21	E.R. Fossum	<i>Quantum efficiency improvements in active pixel sensors</i>	6,005,619
22	J. Stam, J. Bechtel, E.R. Fossum and S. Kemeny	<i>Wide dynamic range optical sensor</i>	6,008,486
23	E.R. Fossum, S. Mendis, B. Pain, R. Nixon and Z.Zhou	<i>Active pixel sensor having intra-pixel charge transfer with analog-to-digital converter</i>	6,021,172
24	Z. Zhou, E.R. Fossum and B. Pain	<i>Integrated sensor with frame memory and programmable resolution for light adaptive imaging</i>	6,057,539
25	E.R. Fossum, S.K. Mendis and S.E. Kemeny	<i>Active pixel sensor with intra-pixel charge transfer</i>	6,101,232
26	E.R. Fossum and B. Pain	<i>Integrated infrared and visible image sensors</i>	6,107,618
27	T.J. Cunningham, E.R. Fossum, S. Nikzad, B. Pain and G. Soli	<i>Delta-doped hybrid advanced detector for low energy particle detection</i>	6,107,619
28	O. Yadid-Pecht and E.R. Fossum	<i>Image sensor producing at least two integration times from each sensing pixel</i>	6,115,065
29	E.R.Fossum and M. Kaplinsky	<i>CMOS image sensor with different pixel sizes for different colors</i>	6,137,100
30	E.R. Fossum, J. Nakamura and S. Kemeny	<i>Active pixel sensor with simple floating gate pixels</i>	6,166,768
31	O. Yadid-Pecht, B. Pain and E.R. Fossum	<i>Method and apparatus of high dynamic range image sensor with individual pixel reset</i>	6,175,383
32	E.R. Fossum, A. Krymski, B. Mansoorian	<i>Active pixel image sensor with current mode readout</i>	6,194,696
33	E.R. Fossum	<i>Differential non-linearity correction scheme</i>	6,215,428
34	E.R. Fossum and G. Waligorski	<i>Pulse-controlled light emitting diode source</i>	6,222,172
35	V. Berezin, A Krymski and E.R. Fossum	<i>Lock-in pinned photodiode photodetector</i>	6,239,456
36	S.L. Barna, D. Van Blerkom and E.R. Fossum	<i>Nonlinear flash analog to digital converter used in an active pixel system</i>	6,295,013
37	F.T. Bauer, J.H. Bechtel, R.R. Turnbull, R. Nixon and E.R. Fossum	<i>Moisture detecting system using semiconductor light sensor with integral charge collection</i>	6,313,457
38	R.C. Gee, P.P-K. Lee, T-H Lee and E.R. Fossum	<i>Active pixel image sensor using a pinned photodiode</i>	6,320,617
39	T.J. Cunningham, E.R. Fossum, S. Nikzad, B. Pain and G. Soli	<i>Delta-doped hybrid advanced detector for low energy particle detection</i>	6,346,700
40	R.H. Nixon, E.R. Fossum and J. Bechtel	<i>Photodiode light sensor</i>	6,359,274
41	J.H. Bechtel, F.T. Bauer, J.S. Stam, R.C. Knapp, R. R. Trumbell, D.J. Schmidt, G.B. Poe, D.L. Plangger, R.H. Nixon, E.R. Fossum and T.E. Steenwyck	<i>Vehicle equipment control with semiconductor light sensors</i>	6,379,013

42	V. Berezin and E.R. Fossum	<i>Active pixel sensor with fully depleted buried photoreceptor</i>	6,388,243
43	B. Mansoorian and E.R. Fossum	<i>Semiconductor imaging sensor with on-chip encryption</i>	6,400,824
44	J.H. Bechtel, J.S. Stam, R.R. Turnbull, R.H. Nixon and E.R. Fossum	<i>Automatic dimming mirror using semiconductor light sensor with integral charge collection</i>	6,402,328
45	R. Nixon, N. Doudoumopoulos and E.R. Fossum	<i>Backside illumination of CMOS image sensor</i>	6,429,036
46	S.L. Barna and E.R. Fossum	<i>Increasing pixel conversion gain in CMOS image sensors</i>	6,445,022
47	S.L. Barna and E.R. Fossum	<i>Optical range finder</i>	6,452,666
48	E.R. Fossum and R.H. Nixon	<i>Single chip camera device having double sampling operation</i>	6,456,326
49	F.T. Bauer, J.H. Bechtel, R.R. Turnbull, R. Nixon and E.R. Fossum	<i>Moisture detecting system using semiconductor light sensor with integral charge collection</i>	6,469,291
50	R. Panicacci, B. Mansoorian and E.R. Fossum	<i>RAM line storage for fixed pattern noise correction</i>	6,473,124
51	O. Yadid-Pecht, B. Minch, B. Pain and E.R. Fossum	<i>Center of mass detection with an active pixel sensor</i>	6,476,860
52	E.R. Fossum	<i>Active pixel sensor array with electronic shuttering</i>	6,486,503
53	R.H. Nixon, E.R. Fossum and J. Bechtel	<i>Photodiode light sensor</i>	6,504,142
54	O. Yadid-Pecht, E.R. Fossum and C. Mead	<i>Active pixel sensor with winner-take-all mode of operation</i>	6,515,702
55	E.R. Fossum and R.H. Nixon	<i>Single substrate camera device with CMOS image sensor</i>	6,549,235
56	S. Campbell and E.R. Fossum	<i>Shared photodetector pixel image sensor</i>	6,552,322
57	E.R. Fossum, S.K. Mendis and S.E. Kemeny	<i>Active pixel sensor with intra-pixel charge transfer</i>	6,555,842
58	E.R. Fossum and R.H. Nixon	<i>CMOS active pixel sensor type imaging system on a chip</i>	6,570,617
59	E.R. Fossum and A. Kotlyar	<i>Wide dynamic range fusion using a lookup table</i>	6,584,235
60	T. Shaw, B. Pain, B. Olson, R. Nixon, E.R. Fossum, R. Panicacci and B. Mansoorian	<i>Single chip active pixel sensor</i>	6,606,122
61	E.R. Fossum, A. Krymski, R. Panicacci, C. Clark	<i>Digital exposure circuit for an image sensor</i>	6,609,745
62	E.R. Fossum, N. Doudoumopoulos and R. Panicacci	<i>Dead pixel correction by row/column substitution</i>	6,611,288
63	E.R. Fossum and S.L. Barna	<i>Frame shutter pixel with an isolated storage node</i>	6,624,456
64	S.L. Barna and E.R. Fossum	<i>Increasing pixel conversion gain in CMOS image sensors</i>	6,627,474

65	E.R. Fossum and S.L. Barna	<i>High speed digital to analog converter using multiple staggered successive approximation cells</i>	6,646,583
66	E.R. Fossum, S. Mendis, B. Pain, R. Nixon and Z.Zhou	<i>Active pixel sensor having intra-pixel charge transfer with analog-to-digital converter</i>	6,665,013
67	E.R. Fossum	<i>Photodiode-type pixel for global electronic shutter and reduced lag</i>	6,667,768
68	E.R. Fossum	<i>Differential non-linearity correction scheme</i>	6,677,872
69	E.R. Fossum and A. Andersson	<i>Stitched circuits larger than the maximum reticle size in sub-micron process</i>	6,690,076
70	E.R. Fossum	<i>Interpolator for a CMOS sensor using a digital register</i>	6,704,049
71	V. Berezin and E.R. Fossum	<i>Multi-junction APS with dual simultaneous integration</i>	6,724,426
72	E.R. Fossum	<i>Dynamic range extension for CMOS image sensor</i>	6,734,905
73	R.H. Nixon, E.R. Fossum and J. Bechtel	<i>Light Sensor</i>	6,737,629
74	J.H. Bechtel, F.T. Bauer, J.S. Stam, R.C. Knapp, R. R. Trumbell, D.J. Schmidt, G.B. Poe, D.L. Plangger, R.H. Nixon, E.R. Fossum and T.E. Steenwyck	<i>Vehicle equipment control with semiconductor light sensors</i>	6,742,904
75	E.R. Fossum, S.K. Mendis and S.E. Kemeny	<i>Active pixel sensor with intra-pixel charge transfer</i>	6,744,068
76	E.R. Fossum	<i>Two-transistor pixel with buried reset channel and method of formation</i>	6,744,084
77	V. Berezin, A Krymski and E.R. Fossum	<i>Lock-in pinned photodiode photodetector</i>	6,750,485
78	J.H. Bechtel, J.S. Stam, R.R. Turnbull, R.H. Nixon and E.R. Fossum	<i>Automatic dimming mirror using semiconductor light sensor with integral charge collection</i>	6,755,542
79	S.L. Barna and E.R. Fossum	<i>Low light sensor signal to noise improvement</i>	6,765,613
80	Z. Zhou, E.R. Fossum and B. Pain	<i>Integrated sensor with frame memory and programmable resolution for light adaptive imaging</i>	6,787,749
81	V. Berezin, A Krymski and E.R. Fossum	<i>Lock-in pinned photodiode photodetector</i>	6,794,214
82	B. Pain, Z. Zhou, and E.R. Fossum	<i>CMOS integration sensor with fully differential column readout circuit for light adaptive imaging</i>	6,801,258
83	E.R. Fossum	<i>Active pixel sensor array with electronic shuttering</i>	6,825,059
84	S. Campbell and E.R. Fossum	<i>Shared photodetector pixel image sensor</i>	6,838,563
85	E.R. Fossum	<i>Latched row logic for a rolling exposure snap</i>	6,847,398

86	J.H. Bechtel, J.S. Stam, R.R. Turnbull, R.H. Nixon and E.R. Fossum	<i>Automatic dimming mirror using semiconductor glare sensor</i>	6,863,405
87	S.L. Barna and E.R. Fossum	<i>Technique for flagging oversaturated pixels</i>	6,873,363
88	E.R. Fossum	<i>High dynamic range cascaded integration cell and method of operation</i>	6,888,122
89	E.R. Fossum and S.L. Barna	<i>Analog to digital converter using multiple staggered successive approximation cells</i>	6,909,392
90	E.R. Fossum and A. Kotlyar	<i>Wide dynamic range fusion using memory lookup</i>	6,912,324
91	E.R. Fossum, J. Nakamura and S. Kemeny	<i>Active pixel sensor pixel whose output is coupled to an output transistor gate</i>	6,943,838
92	S.L. Barna, D. Van Blerkom and E.R. Fossum	<i>Nonlinear flash analog to digital converter used in an active pixel system</i>	6,977,603
93	O. Yadid-Pecht, B. Minch, B. Pain and E.R. Fossum	<i>Center of mass detection via an active pixel sensor</i>	6,980,230
94	E.R. Fossum	<i>Method of forming two-transistor pixel with buried reset channel</i>	6,984,537
95	E.R. Fossum, D. Schick and S. Xue	<i>Three-side buttable CMOS image sensors</i>	7,009,646
96	E.R. Fossum	<i>High-low sensitivity pixel</i>	7,026,596
97	O. Yadid-Pecht, B. Minch, B. Pain and E.R. Fossum	<i>Center of mass detection via an active pixel sensor</i>	7,053,929
98	R.H. Nixon, E.R. Fossum and J. Bechtel	<i>Rearview assembly for a vehicle that are not exposed to the same optical spectrum</i>	7,087,878
99	E.R. Fossum and S.L. Barna	<i>Frame shuttering scheme for increased frame rate</i>	7,092,021
100	E.R. Fossum	<i>Photodiode-type pixel for global electronic shutter and reduced lag</i>	7,095,440
101	E.R. Fossum, S.K. Mendis and S.E. Kemeny	<i>Method of acquiring an image from an optical structure having pixels with dedicated readout circuits</i>	7,105,371
102	A. Olsen, E.R. Fossum and G. Rossi	<i>Amplification with feedback capacitance for photodetector signals</i>	7,183,531
103	O. Yadid-Pecht and E.R. Fossum	<i>Image sensor with high dynamic range linear output</i>	7,190,398
104	A. Olsen, E.R. Fossum and G. Rossi	<i>Amplification with feedback capacitance for photodetector signals</i>	7,199,349
105	E.R. Fossum	<i>Methods of operating photodiode-type pixel and imager device</i>	7,209,173
106	P.O. Pahr, A. Olsen and E.R. Fossum	<i>Double sampling active pixel sensor with double sampling temperature sensor</i>	7,280,139
107	A. Olsen, E.R. Fossum and G. Rossi	<i>Amplification with feedback capacitance for photodetector signals</i>	7,291,822
108	E.R. Fossum	<i>In-pixel kTC noise suppression using circuit techniques</i>	7,326,904

109	T.Tang, R. Gutierrez, R. Calvet, J. Xu and E.R. Fossum	<i>Lens barrel</i>	7,345,827
110	S. P. Campbell, R.H. Tsai, G.A. Agranov and E.R. Fossum	<i>Alignment among elements in an image sensor</i>	7,351,945
111	J.H. Bechtel, F.T. Bauer, J.S. Stam, R.C. Knapp, R. R. Trumbell, D.J. Schmidt, G.B. Poe, D.L. Plangger, R.H. Nixon, E.R. Fossum and T.E. Steenwyck	<i>Vehicle headlamp control utilizing a light sensor having at least two transducers</i>	7,361,875
112	E.R. Fossum	<i>Two-transistor pixel with buried reset channel and method of formation</i>	7,365,409
113	E.R. Fossum and R.H. Nixon	<i>Single substrate camera device with CMOS image sensor</i>	7,369,166
114	V. Berezin and E.R. Fossum	<i>Multi junction APS with dual simultaneous integration</i>	7,372,490
115	R.H. Nixon, E.R. Fossum and J. Bechtel	<i>Vehicle rearview assembly having a light sensor with two or more transducers</i>	7,378,633
116	E.R. Fossum	<i>In-pixel kTC noise suppression using circuit techniques</i>	7,385,166
117	E.R. Fossum and S.L. Barna	<i>Frame shutter pixel with an isolated storage node</i>	7,388,239
118	S.L. Barna and E.R. Fossum	<i>Low light sensor signal to noise improvement</i>	7,436,442
119	E.R. Fossum	<i>High dynamic range cascaded integration pixel cell</i>	7,442,910
120	A. Olsen, E.R. Fossum and G. Rossi	<i>Amplification with feedback capacitance for photodetector signals</i>	7,473,883
121	J.H. Bechtel, J.S. Stam, R.R. Turnbull, R.H. Nixon and E.R. Fossum	<i>Apparatus including at least one light sensor with an input pin for receiving an integration period signal</i>	7,550,703
122	J. Bechtel, J. Stam, E.R. Fossum, and S. Kemeny	<i>Vehicle vision system</i>	7,567,291
123	E.R. Fossum, A. Krymski, R. Panicacci, C. Clark	<i>Digital exposure circuit for an image sensor</i>	7,646,407
124	A. Olsen, E.R. Fossum and G. Rossi	<i>Amplification with feedback capacitance for photodetector signals</i>	7,652,243
125	S. P. Campbell, R.H. Tsai, G.A. Agranov and E.R. Fossum	<i>Alignment among elements in an image sensor</i>	7,655,893
126	T.Tang, R. Gutierrez, R. Calvet, J. Xu and E.R. Fossum	<i>Lens barrel</i>	7,660,056
127	E.R. Fossum and S.L. Barna	<i>Frame shutter pixel with an isolated storage node</i>	7,687,302
128	V. Berezin and E.R. Fossum	<i>Multi junction APS with dual simultaneous integration</i>	7,719,592
129	E.R. Fossum and S.L. Barna	<i>Frame shuttering scheme for increased frame rate</i>	7,830,438
130	P.O. Pahr, A. Olsen and E.R. Fossum	<i>Double sample active pixel sensor with double sampling temperature sensor</i>	7,898,316

131	E.R. Fossum	<i>Interpolator for a CMOS sensor using a digital register</i>	7,916,193
132	E.R. Fossum	<i>High dynamic range cascaded integration pixel cell and method of operation</i>	7,990,449
133	S.L. Barna and E.R. Fossum	<i>Technique for flagging oversaturated pixels</i>	8,031,260
134	E.R. Fossum, A. Krymski, R. Panicacci, C. Clark	<i>Digital exposure circuit for an image sensor</i>	8,040,394
135	E.R. Fossum, A. Krymski, R. Panicacci, C. Clark	<i>Digital exposure circuit for an image sensor</i>	8,054,339
136	M. Agan, E.R. Fossum, R. Nixon, H. Olson, B. Pain, C. Pasqualino, E. Satorius, T. Shaw, G.L. Stevens	<i>Highly miniaturized, battery operated, digital wireless camera using programmable single chip active pixel sensor (APS) digital camera chip</i>	8,085,342
137	S.H. Lee, E.R. Fossum, Y.D. Park, K.L. Cho, S.J. Byun	<i>Three-dimensional image sensor</i>	8,300,088
138	E.R. Fossum, K. L. Cho, Y.D. Park, Y. G.Jin, S. H. Lee, S.-J. Byun	<i>Image sensor including noise removing unit, image pickup device having the image sensor, and image sensing method performed in the image sensor</i>	8,373,782
139	Y-G Jin, K-Y Oh, S-M Lee, K-C Choe, S-E Seo, Y-D Park, E.R. Fossum, K-L Cho	<i>Photo detecting apparatus and unit pixel thereof</i>	8,513,709
140	E.R. Fossum, Y-G Jin, S-J Hwang, D-K Cha, Y-D Park, J-C Ahn, K-S Moon	<i>Image sensor devices having dual-gated charge storage regions therein</i>	8,520,104
141	E.R. Fossum, A. Krymski, R. Panicacci, C. Clark	<i>Method of operating an image sensor having a digital exposure circuit</i>	8,531,550
142	E.R. Fossum, D-K. Cha, Y-G. Jin, Y-D. Park, S-J. Hwang	<i>High sensitivity image sensors including a single electron field effect transistor and methods of operating the same</i>	8,546,901
143	E.R. Fossum	<i>Method of operating a CMOS imager with color interpolation</i>	8,614,754
144	E.R. Fossum, S.P. Kim, Y.D. Park, H.S. Oh, H.J. Bae, T.E.Yoon	<i>Image sensors having multiple photoelectric conversion devices therein</i>	8,625,016
145	E.R. Fossum	<i>Image sensor using single photon jots and processor to create pixels</i>	8,648,287
146	E.R. Fossum and Y-D. Park	<i>Unit pixel, photo-detection device and method of measuring a distance using the same</i>	8,687,174
147	E.R. Fossum, D-K Cha, Y-G Jin, Y-D Park, S-J Hwang	<i>High sensitivity image sensors</i>	8,803,273
148	E.R. Fossum	<i>Method of operating a CMOS imager using color interpolation</i>	8,896,730
149	E.R. Fossum, S-J Hwang, Y-G Jin, Y-D Park, D-K Cha	<i>Image sensors</i>	8,976,277
150	Y. Wang, E.R. Fossum, I. Ovsiannikov, Y-D Park, D-K Min	<i>Image sensor, operating method thereof, and device including the image sensor</i>	8,994,867
151	E.R. Fossum	<i>Image sensor having sub-diffraction-limit pixels</i>	9,225,918

152	E.R. Fossum, Y.M. Wang, T-Y Lee, Y-D Park	<i>Depth pixel of three-dimensional image sensor and three-dimensional image sensor including the same</i>	9,232,163
153	E.R. Fossum	<i>Image sensor having sub-diffraction-limit pixels</i>	9,565,385
154	E.R. Fossum, J. Ma, D. Hondongwa	<i>Low full-well capacity image sensor with high sensitivity</i>	9,728,565
155	E.R. Fossum and T-Y Lee	<i>Distance sensor and image processing system including the same</i>	9,762,890
156	E.R. Fossum and T-Y Lee	<i>Distance sensor and image processing system including the same</i>	9,805,476
157	L. Anzagira and E.R. Fossum	<i>Multi-junction pixel image sensor with dielectric reflector between photodetection layers</i>	10,163,968
158	E.R. Fossum and J. Ma	<i>Gateless reset for image sensor pixels</i>	10,283,539
159	J. Ma and E.R. Fossum	<i>CMOS image sensor with pump gate and extremely high conversion gain</i>	10,319,776
160	J. Ma, L. Anzagira, E.R. Fossum	<i>Image sensor and image sensor pixel having JFET source follower</i>	10,340,305
161	E.R. Fossum and L. Anzagira	<i>Image sensor color filter array pattern</i>	10,349,015
162	D.B. Hondongwa and E.R. Fossum	<i>Counting and integrating pixels, detectors, and methods</i>	10,473,798
163	E.R. Fossum	<i>Image sensor with controllable exposure response non-linearity</i>	10,523,886
164	E.R. Fossum and L. Anzagira	<i>Quanta image sensor with polarization-sensitive jots</i>	10,652,497
165	E.R. Fossum	<i>Image sensor having sub-diffraction-limit pixels</i>	10,674,098
166	L. Anzagira and E.R. Fossum	<i>Multi-junction pixel image sensor with dielectric reflector between photodetection layers</i>	10,840,291
167	E.R. Fossum and J. Ma	<i>Gateless reset for image sensor pixels</i>	10,978,504
168	E.R. Fossum	<i>Image sensor having sub-diffraction-limit pixels</i>	11,128,831
169	J. Ma and E.R. Fossum	<i>CMOS image sensor with pump gate and extremely high conversion gain</i>	11,251,215
170	J. Ma and E.R. Fossum	<i>High conversion gain and high fill-factor image sensors with pump-gate and vertical charge storage well for global shutter and high-speed applications</i>	11,496,703
171	Z. Wang, J. Ma, J. Liu, E.R. Fossum, X. Wang	<i>UV/VIS/IR Backside-illuminated photon-counting sensor</i>	11,522,098
172	E.R. Fossum	<i>Quanta image sensor with controllable non-linearity</i>	11,711,630
173	J. Ma, L. Anzagira, E.R. Fossum	<i>Image sensor and image sensor pixel having JFET source follower</i>	11,764,249
174	E. Amri, Y. Felk, D. Stucki, J. Ma, E.R. Fossum	<i>Quanta image sensor quantum random number generation</i>	11,868,742
175	E.R. Fossum and S. Masoodian	<i>Stacked backside-illuminated quanta image sensor with cluster-parallel readout</i>	11,924,573

176	X. Wang, C.J. Carver, E.R. Fossum, J. Liu, X. Zhou, and N.R. Shade	<i>Speckle-suppressing lighting system</i>	12,001,028
	Re-examined patents		
177	E.R. Fossum and S.L. Barna	<i>Apparatus for operating a CMOS imager having a pipelined analog to digital converter</i>	RE42,117
178	V. Berezin, A Krymski and E.R. Fossum	<i>Pinned photodiode photodetector with common buffer transistor and binning capability</i>	RE42,292
179	V. Berezin, A Krymski and E.R. Fossum	<i>Pinned photodiode photodetector with common buffer transistor and binning capability</i>	RE41,340
180	E.R. Fossum and S.L. Barna	<i>Method and apparatus for operating a CMOS imager having a pipelined analog to digital converter</i>	RE41,519
181	E.R. Fossum and S.L. Barna	<i>Method for operating a CMOS imager having a pipelined analog to digital converter,</i>	RE41,730
182	E.R. Fossum and R.H. Nixon	<i>Single substrate camera device with CMOS image sensor</i>	RE42,918
183	V. Berezin, A Krymski and E.R. Fossum	<i>CMOS active image sensor with common pixel transistors and binning capability</i>	RE44,482
184	E.R. Fossum and S.L. Barna	<i>Method and apparatus for operating a CMOS imager having a pipelined analog to digital converter</i>	RE45,282
185	E.R. Fossum and S.L. Barna	<i>Analog to digital conversion for a CMOS image sensor</i>	RE45,493

List of Foreign Patent Publications Issued to Dr. Eric R. Fossum

120 Foreign Patent Publications as of 17-March-2024

via [WIPO Search](#)

IN:"eric" AND "fossum" AND NOT CTR:US

[124 returned, incl. 4 that are not mine]

[USPTO Patent Public Search](#) database:USPAT Query:

(eric near2 fossum).inv. NOT clutch NOT Soluble

[184 returned as of 17-March-2024 – the above list was not generated from this search]