

List of Past U.S. Patents granted to Sau-Ching Wong (updated July 17, 2026)

	U.S. PAT. #	Title of Patent	Date of Patent	Current Assignee(s) (Previous Assignee)
1	11200954	Programming nonvolatile memory cells through a series of predetermined threshold voltages	12/14/2021	Samsung
2	11114164	Programming nonvolatile memory cells through a series of predetermined threshold voltages	09/07/2021	Samsung
3	10978159	Programming nonvolatile memory cells through a series of predetermined threshold voltages	04/13/2021	Samsung
4	10535407	Adaptive parallel writing to nonvolatile memory cells	01/14/2020	Samsung
5	10468107	Programming nonvolatile memory cells through a series of predetermined threshold voltages	11/05/2019	Samsung
6	10468108	Programming nonvolatile memory cells through a series of predetermined threshold voltages	11/05/2019	Samsung
7	9,576,647	Parallel programming of nonvolatile memory cells	02/21/2017	Samsung
8	9,449,682	Reading a multi-bit value from a memory cell	09/20/2016	Samsung
9	8,027,196	Parallel programming of multiple-bit-per-cell memory cells by controlling program pulsewidth and programming voltage	09/27/2011	Samsung
10	7,808,820	Parallel programming of multiple-bit-per-cell memory cells by controlling program pulsewidth and programming voltage	10/05/2010	Samsung
11	7,656,710	Adaptive operations for nonvolatile memories	02/02/2010	Samsung
12	7,554,844	Integrated circuit with analog or multilevel storage cells and user-selectable sampling frequency	06/30/2009	Sandisk
13	7,426,138	Parallel programming of multiple-bit-per-cell memory cells by controlling program pulsewidth and programming voltage	09/16/2008	Samsung
14	7,397,697	Multi-bit-per-cell flash EEPROM memory with refresh	07/08/2008	Sandisk
15	7,355,891	Fabricating bi-directional nonvolatile memory cells	04/08/2008	Samsung
16	7,349,255	High data rate write process for non-volatile flash memories	03/25/2008	Sandisk
17	7,298,670	Integrated circuit with analog or multilevel storage cells and user-selectable sampling frequency	11/20/2007	Sandisk
18	7,268,809	Analog buffer memory for high-speed digital image capture	09/11/2007	Sandisk
19	7,227,779	Contactless bidirectional nonvolatile memory	06/05/2007	Samsung
20	7,221,591	Fabricating bi-directional nonvolatile memory cells	05/22/2007	Samsung
21	7,170,781	Multi-bit-per-cell flash EEPROM memory with refresh	01/30/2007	Sandisk
22	7,139,192	Programming of multi-level memory cells on a continuous word line	11/21/2006	Samsung
23	7,106,632	Integrated circuit with analog or multilevel storage cells and user-selectable sampling frequency	09/12/2006	Sandisk
24	7,099,188	Bit line reference circuits for binary and multiple-bit-per-cell memories	08/29/2006	Samsung
25	7,092,289	Efficient redundancy system for flash memories with uniformly sized blocks	08/15/2006	Samsung
26	7,080,192	File storage and erasure in flash memory	07/18/2006	Samsung
27	7,079,422	Periodic refresh operations for non-volatile multiple-bit-per-cell memory	07/18/2006	Samsung
28	7,061,801	Contactless bidirectional nonvolatile memory	06/13/2006	Samsung
29	7,054,193	Non-uniform programming pulse width for writing of multi-bit-per-cell memories	05/30/2006	Samsung
30	6,944,058	High data rate write process for non-volatile flash memories	09/13/2005	Sandisk
31	6,937,520	Nonvolatile semiconductor memory device	08/30/2005	Sharp / Samsung / MLM
32	6,914,820	Erasing storage nodes in a bi-directional nonvolatile memory cell	07/05/2005	Samsung (MLM)
33	6,906,951	Bit line reference circuits for binary and multiple-bit-per-cell memories	06/14/2005	Samsung (MLM)
34	6,898,117	Multi-bit-per-cell flash EEPROM memory with refresh	05/24/2005	Sandisk

35	6,882,567	Parallel programming of multiple-bit-per-cell memory cells on a continuous word line	04/19/2005	Samsung (MLM)
36	6,856,568	Refresh operations that change address mappings in a non-volatile memory	02/15/2005	Samsung (MLM)
37	6,826,084	Accessing individual storage nodes in a bi-directional nonvolatile memory cell	11/30/2004	Samsung (MLM)
38	6,760,262	Charge pump circuit adjustable in response to an external voltage source	07/06/2004	Sandisk
39	6,760,068	Correction of corrupted elements in sensors using analog/multi-level non-volatile memory	07/06/2004	Sandisk
40	6,754,128	Non-volatile memory operations that change a mapping between physical and logical addresses when restoring data	06/22/2004	Samsung (MLM)
41	6,747,896	Bi-directional floating gate nonvolatile memory	06/08/2004	Samsung (MLM)
42	6,731,539	Memory with offset bank select cells at opposite ends of buried diffusion lines	05/04/2004	Samsung
43	6,662,263	Sectorless flash memory architecture	12/09/2003	Samsung (MLM)
44	6,624,773	Data encryption and signal scrambling using programmable data conversion arrays	09/23/2003	Sandisk
45	6,614,685	Flash memory array partitioning architectures	09/02/2003	Samsung (MLM)
46	6,606,267	High data rate write process for non-volatile flash memories	08/12/2003	Sandisk
47	6,594,036	Analog/multi-level memory for digital imaging	07/15/2003	Sandisk
48	6,570,810	Contactless flash memory with buried diffusion bit/virtual ground lines	05/27/2003	Samsung (MLM)
49	6,558,967	Multi-bit-per-cell memory system with numbers of bits per cell set by testing of memory units	05/06/2003	Samsung (MLM)
50	6,556,465	Adjustable circuits for analog or multi-level memory	04/29/2003	Sandisk
51	6,549,456	Integrated circuit with analog or multilevel storage cells and user-selectable sampling frequency	04/15/2003	Sandisk
52	6,532,556	Data management for multi-bit-per-cell memories	03/11/2003	Samsung (MLM)
53	6,522,586	Dynamic refresh that changes the physical storage locations of data in flash memory	02/18/2003	Samsung / MLM
54	6,498,851	Data encryption and signal scrambling using programmable data conversion arrays	12/24/2002	Sandisk
55	6,480,422	Contactless flash memory with shared buried diffusion bit line architecture	11/12/2002	Samsung (MLM)
56	6,466,476	Data coding for multi-bit-per-cell memories having variable numbers of bits per memory cell	10/15/2002	Samsung (MLM)
57	6,456,529	Programmable impedance device	09/24/2002	Sandisk
58	6,396,744	Flash memory with dynamic refresh	05/28/2002	Samsung (MLM)
59	6,370,075	Charge pump circuit adjustable in response to an external voltage source	04/09/2002	Sandisk
60	6,363,008	Multi-bit-cell non-volatile memory with maximized data capacity	03/26/2002	Samsung (MLM)
61	6,345,000	Flash memory permitting simultaneous read/write and erase operations in a single memory array	02/05/2002	Sandisk
62	6,320,788	Programmable impedance device	11/20/2001	Sandisk
63	6,317,349	Non-volatile content addressable memory	11/13/2001	Sandisk
64	6,314,025	High data rate write process for non-volatile flash memories	11/06/2001	Sandisk
65	6,307,776	Multi-bit-per-cell flash EEPROM memory with refresh	10/23/2001	Sandisk
66	6,285,593	Word-line decoder for multi-bit-per-cell and analog/multi-level memories with improved resolution and signal-to-noise ratio	09/04/2001	Sandisk
67	6,259,627	Read and write operations using constant row line voltage and variable column line load	07/10/2001	Samsung (MLM)
68	6,208,542	Techniques for storing digital data in an analog or multilevel memory	03/27/2001	Sandisk
69	6,201,734	Programmable impedance device	03/13/2001	Sandisk
70	6,185,119	Analog memory IC with fully differential signal path	02/06/2001	Sandisk
71	6,184,726	Adjustable level shifter circuits for analog or multilevel memories	02/06/2001	Sandisk
72	6,169,503	Programmable arrays for data conversions between analog and digital	01/02/2001	Sandisk
73	6,166,938	Data encoding for content addressable memories	12/26/2000	Sandisk

74	6,160,739	Non-volatile memories with improved endurance and extended lifetime	12/12/2000	Sandisk
75	6,157,558	Content addressable memory cell and array architectures having low transistor counts	12/05/2000	Sandisk
76	6,154,157	Non-linear mapping of threshold voltages for analog/multi-level memory	11/28/2000	Sandisk
77	6,151,246	Multi-bit-per-cell flash EEPROM memory with refresh	11/21/2000	Sandisk
78	6,134,145	High data rate write process for non-volatile flash memories	10/17/2000	Sandisk
79	6,134,141	Dynamic write process for high bandwidth multi-bit-per-cell and analog/multi-level non-volatile memories	10/17/2000	Sandisk
80	6,094,368	Auto-tracking write and read processes for multi-bit-per-cell non-volatile memories	07/25/2000	Sandisk (Invox)
81	6,058,060	Multi-bit-per-cell and analog/multi-level non-volatile memories with improved resolution and signal-to noise ratio	05/02/2000	Sandisk (Invox)
82	6,038,166	High resolution multi-bit-per-cell memory	03/14/2000	Sandisk (Invox)
83	5,969,986	High-bandwidth read and write architectures for non-volatile memories	10/19/1999	Innovative Memory Sys (Invox)
84	5,949,716	Look-ahead erase for sequential data storage	09/07/1999	Sandisk (Invox)
85	5,943,283	Address scrambling in a semiconductor memory	08/24/1999	Sandisk (Invox)
86	5,923,585	Source biasing in non-volatile memory having row-based sectors	07/13/1999	Sandisk (Invox)
87	5,909,449	Multi-bit-per-cell non-volatile memory with error detection and correction	06/01/1999	Sandisk (Invox)
88	5,909,387	Memory architecture for recording of multiple messages	06/01/1999	Sandisk (Invox)
89	5,896,340	Multiple array architecture for analog or multi-bit-cell memory	04/20/1999	Sandisk / Invoice Tech
90	5,818,757	Analog and multi-level memory with reduced program disturb	10/06/1998	Sandisk (Invox)
91	5,815,425	Combined digital write and analog rewrite process for non-volatile memory	09/29/1998	Sandisk (Invox)
92	5,801,980	Testing of an analog memory using an on-chip digital input/output interface	09/01/1998	Sandisk (Invox)
93	5,751,635	Read circuits for analog memory cells	05/12/1998	Sandisk (Invoice Tech)
94	5,748,534	Feedback loop for reading threshold voltage	05/05/1998	Sandisk (Invox)
95	5,748,533	Read circuit which uses a coarse-to-fine search when reading the threshold voltage of a memory cell	05/05/1998	Sandisk (Invoice Tech)
96	5,745,409	Non-volatile memory with analog and digital interface and storage	04/28/1998	Sandisk (Invox)
97	5,694,356	High resolution analog storage EPROM and flash EPROM	12/02/1997	Sandisk (Invoice Tech)
98	5,687,115	Write circuits for analog memory	11/11/1997	Sandisk (Invoice Tech)
99	5,682,352	Digital testing of analog memory devices	06/10/1997	Sandisk (Invox)
100	5,680,341	Pipelined record and playback for analog non-volatile memory	10/21/1997	Sandisk (Invox)
101	5,638,320	High resolution analog storage EPROM and flash EPROM	06/10/1997	Sandisk (Invox)
102	4,912,342	Programmable logic device with array blocks with programmable clocking	03/27/1990	Altera
103	4,899,070	Bit line sense amplifier for programmable logic devices	02/06/1990	Altera
104	4,899,067	Programmable logic devices with spare circuits for use in replacing defective circuits	02/06/1990	Altera
105	4,871,930	Programmable logic device with array blocks connected via programmable interconnect	10/03/1989	Altera
106	4,864,161	Multifunction flip-flop-type circuit	09/05/1989	Altera
107	4,774,421	Programmable logic array device using EPROM technology	09/27/1988	Altera
108	4,713,792	Programmable macrocell using EPROM or EEPROM transistors for architecture control in programmable logic circuits	12/15/1987	Altera
109	4,617,479	Programmable logic array device using EPROM technology	10/14/1986	Altera
110	4,000,413	MOS-RAM	12/28/1976	Intel