Luigi Gaioni

List of Publications by Year
in descending order

#	Article	IF	Citations
1	The SLIM5 low mass silicon tracker demonstrator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 942-953.	1.6	25
2	Comprehensive Study of Total Ionizing Dose Damage Mechanisms and Their Effects on Noise Sources in a 90 nm CMOS Technology. IEEE Transactions on Nuclear Science, 2008, 55, 3272-3279.	2.0	24
3	Dynamic Compression of the Signal in a Charge Sensitive Amplifier: From Concept to Design. IEEE Transactions on Nuclear Science, 2015, 62, 2318-2326.	2.0	24
4	Test results and prospects for RD53A, a large scale 65Ânm CMOS chip for pixel readout at the HL-LHC. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, 282-285.	1.6	22
5	Vertically integrated deep N-well CMOS MAPS with sparsification and time stamping capabilities for thin charged particle trackers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 624, 379-386.	1.6	20
6	CHIPIX65: Developments on a new generation pixel readout ASIC in CMOS 65 nm for HEP experiments. , 2015, , .		20
7	Investigating Degradation Mechanisms in 130 nm and 90 nm Commercial CMOS Technologies Under Extreme Radiation Conditions. IEEE Transactions on Nuclear Science, 2008, 55, 1992-2000.	2.0	19
8	Development of deep N-well MAPS in a 130 nm CMOS technology and beam test results on a 4k-pixel matrix with digital sparsified readout. , 2008, , .		19
9	Introducing 65nm CMOS technology in low-noise read-out of semiconductor detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 624, 373-378.	1.6	18
10	Recent progress of RD53 Collaboration towards next generation Pixel Read-Out Chip for HL-LHC. Journal of Instrumentation, 2016, 11, C12058-C12058.	1.2	17
11	65 nm CMOS analog front-end for pixel detectors at the HL-LHC. Journal of Instrumentation, 2016, 11, C02049-C02049.	1.2	17
12	A 4096-pixel MAPS device with on-chip data sparsification. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 604, 408-411.	1.6	16
13	A Front-End Channel in 65 nm CMOS for Pixel Detectors at the HL-LHC Experiment Upgrades. IEEE Transactions on Nuclear Science, 2017, 64, 789-799.	2.0	16
14	The superB silicon vertex tracker. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 585-587.	1.6	15
15	TID Effects in Deep N-Well CMOS Monolithic Active Pixel Sensors. IEEE Transactions on Nuclear Science, 2009, 56, 2124-2131.	2.0	14
16	Mechanisms of Noise Degradation in Low Power 65 nm CMOS Transistors Exposed to Ionizing Radiation. IEEE Transactions on Nuclear Science, 2010, , .	2.0	14
17	Thin pixel development for the SuperB silicon vertex tracker. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 650, 169-173.	1.6	14
18	Macro Pixel ASIC (MPA): the readout ASIC for the pixel-strip (PS) module of the CMS outer tracker at HL-LHC. Journal of Instrumentation, 2014, 9, C11012-C11012.	1.2	14

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19	The associative memory for the self-triggered SLIM5 silicon telescope. , 2008, , .		13
20	Assessment of a Low-Power 65Ânm CMOS Technology for Analog Front-End Design. IEEE Transactions on Nuclear Science, 2014, 61, 553-560.	2.0	13
21	Recent development on triple well 130 nm CMOS MAPS with in-pixel signal processing and data sparsification capability. , 2007, , .		12
22	TID-Induced Degradation in Static and Noise Behavior of Sub-100 nm Multifinger Bulk NMOSFETs. IEEE Transactions on Nuclear Science, 2011, 58, 776-784.	2.0	11
23	SLIM5 beam test results for thin striplet detector and fast readout beam telescope. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 601-604.	1.6	10
24	Beam-test results of 4k pixel CMOS MAPS and high resistivity striplet detectors equipped with digital sparsified readout in the Slim5 low mass silicon demonstrator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 596-600.	1.6	9
25	The SuperB silicon vertex tracker. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 636, S168-S172.	1.6	9
26	Dynamic Compression of the Signal in a Charge Sensitive Amplifier: Experimental Results. IEEE Transactions on Nuclear Science, 2018, 65, 636-644.	2.0	9
27	Radiation Tolerance of Devices and Circuits in a 3D Technology Based on the Vertical Integration of Two 130-nm CMOS Layers. IEEE Transactions on Nuclear Science, 2013, 60, 4526-4532.	2.0	8
28	Characterization of bandgap reference circuits designed for high energy physics applications. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 824, 371-373.	1.6	8
29	Ionizing Radiation Effects on the Noise of 65 nm CMOS Transistors for Pixel Sensor Readout at Extreme Total Dose Levels. IEEE Transactions on Nuclear Science, 2018, 65, 550-557.	2.0	8
30	Deep n-well MAPS in a 130nm CMOS technology: Beam test results. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 195-197.	1.6	7
31	2D and 3D thin pixel technologies for the Layer0 of the SuperB Silicon Vertex Tracker. , 2011, , .		7
32	Modeling Charge Loss in CMOS MAPS Exposed to Non-Ionizing Radiation. IEEE Transactions on Nuclear Science, 2013, 60, 2574-2582.	2.0	7
33	First results on 3D pixel sensors interconnected to the RD53A readout chip after irradiation to 1Ã—1016 neq cmâ˘2. Journal of Instrumentation, 2019, 14, C06018-C06018.	1.2	7
34	The high rate data acquisition system for the SLIM5 beam test. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 321-323.	1.6	6
35	First results from the characterization of a three-dimensional deep N-well MAPS prototype for vertexing applications. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 699, 41-46.	1.6	6
36	Impact of gate-leakage current noise in sub-100 nm CMOS front-end electronics. , 2007, , .		5

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37	CMOS technologies in the 100nm range for rad-hard front-end electronics in future collider experiments. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2008, 596, 107-112.	1.6	5
38	Front-end electronics in a 65nm CMOS process for high density readout of pixel sensors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 650, 163-168.	1.6	5
39	Vertical integration approach to the readout of pixel detectors for vertexing applications. , 2011, , .		5
40	Recent developments on CMOS MAPS for the SuperB Silicon Vertex Tracker. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, 283-287.	1.6	5
41	Design of low-power, low-voltage, differential I/O links for High Energy Physics applications. Journal of Instrumentation, 2015, 10, C01055-C01055.	1.2	5
42	65-nm CMOS Front-End Channel for Pixel Readout in the HL-LHC Radiation Environment. IEEE Transactions on Nuclear Science, 2017, 64, 2922-2932.	2.0	5
43	Novel active signal compression in low-noise analog readout at future X-ray FEL facilities. Journal of Instrumentation, 2015, 10, C04003-C04003.	1.2	5
44	Forecasting noise and radiation hardness of CMOS front-end electronics beyond the 100nm frontier. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 358-361.	1.6	4
45	Beam test results of different configurations of deep N-well MAPS matrices featuring in pixel full signal processing. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 628, 234-237.	1.6	4
46	Monolithic Pixel Sensors for Fast Silicon Vertex Trackers in a Quadruple Well CMOS Technology. IEEE Transactions on Nuclear Science, 2013, 60, 2343-2351.	2.0	4
47	A 65 nm CMOS analog processor with zero dead time for future pixel detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2017, 845, 595-598.	1.6	4
48	Characterisation of irradiated thin silicon sensors for the CMS phase II pixel upgrade. European Physical Journal C, 2017, 77, 1.	3.9	4
49	The front-end chip of the SuperB SVT detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, 180-183.	1.6	3
50	Design of bandgap reference circuits in a 65 nm CMOS technology for HL-LHC applications. Journal of Instrumentation, 2015, 10, C02004-C02004.	1.2	3
51	A prototype of a new generation readout ASIC in 65nm CMOS for pixel detectors at HL-LHC. Journal of Instrumentation, 2016, 11, C12044-C12044.	1.2	3
52	Threshold tuning DACs for pixel readout chips at the High Luminosity LHC. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 969, 164025.	1.6	3
53	RD53 analog front-end processors for the ATLAS and CMS experiments at the High-Luminosity LHC. , 2020, , .		3
54	Optimization of the 65-nm CMOS Linear Front-End Circuit for the CMS Pixel Readout at the HL-LHC. IEEE Transactions on Nuclear Science, 2021, 68, 2682-2692.	2.0	3

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55	Review of radiation effects leading to noise performance degradation in 100 - nm scale microelectronic technologies. , 2008, , .		2
56	Noise Behavior of a 180 nm CMOS SOI Technology for Detector Front-End Electronics. IEEE Transactions on Nuclear Science, 2008, 55, 2408-2413.	2.0	2
57	On-Chip Fast Data Sparsification for a Monolithic 4096-Pixel Device. IEEE Transactions on Nuclear Science, 2009, 56, 1159-1162.	2.0	2
58	The Apsel65 front-end chip for the readout of pixel sensors in the 65 nm CMOS node. , 2011, , .		2
59	Monolithic pixel sensors for fast particle trackers in a quadruple well CMOS technology. , 2012, , .		2
60	A 65-nm CMOS Prototype Chip With Monolithic Pixel Sensors and Fast Front-End Electronics. IEEE Transactions on Nuclear Science, 2012, 59, 3304-3311.	2.0	2
61	The design of fast analog channels for the readout of strip detectors in the inner layers of the SuperB SVT. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, 205-207.	1.6	2
62	Heavily Irradiated 65-nm Readout Chip With Asynchronous Channels for Future Pixel Detectors. IEEE Transactions on Nuclear Science, 2018, 65, 2699-2706.	2.0	2
63	Design of analog front-ends for the RD53 demonstrator chip. , 2017, , .		2
64	Investigating degradation mechanisms in 130 nm and 90 nm commercial CMOS technologies exposed to up to 100 Mrad ionizing radiation dose. , 2007, , .		1
65	Recent developments in 130 nm CMOS monolithic active pixel detectors. Nuclear Physics, Section B, Proceedings Supplements, 2007, 172, 20-24.	0.4	1
66	TID effects in deep N-well CMOS monolithic active pixel sensors. , 2008, , .		1
67	3D DNW MAPS for high resolution, highly efficient, sparse readout CMOS detectors. , 2009, , .		1
68	Charge signal processors in sparse readout CMOS MAPS and hybrid pixel sensors for the SuperB Layer0. , 2009, , .		1
69	A 3D deep n-well CMOS MAPS for the ILC vertex detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 617, 324-326.	1.6	1
70	Recent progress in the development of 3D deep n-well CMOS MAPS. Journal of Instrumentation, 2012, 7, C02007-C02007.	1.2	1
71	Fast analog front-end for the readout of the SuperB SVT inner Layers. , 2012, , .		1
72	Advances in the development of pixel detector for the SuperB Silicon Vertex Tracker. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 731, 25-30.	1.6	1

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73	Latest results of the R&D on CMOS MAPS for the Layer0 of the SuperB SVT. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 732, 484-487.	1.6	1
74	Beam test results for the SuperB-SVT thin striplet detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, 314-317.	1.6	1
75	Characterization of a large scale DNW MAPS fabricated in a 3D integration process. , 2013, , .		1
76	Low-power clock distribution circuits for the Macro Pixel ASIC. Journal of Instrumentation, 2015, 10, C01051-C01051.	1.2	1
77	Charge preamplifier in a 65 nm CMOS technology for pixel readout in the Grad TID regime. , 2016, , .		1
78	Perspectives for low noise detector readout in a sub-quarter-micron CMOS SOI technology. , 2007, , .		0
79	Evaluation of the radiation tolerance of 65 nm CMOS devices for high-density front-end electronics. , 2010, , .		0
80	Thin pixel development for the Layer0 of the SuperB Silicon Vertex Tracker. , 2010, , .		0
81	Analog front-end for monolithic and hybrid pixels in a vertical integration CMOS technology. , 2011, , .		0
82	A 3D Vertically Integrated Deep N-Well CMOS MAPS for the SuperB Layer0. Journal of Instrumentation, 2011, 6, C01010-C01010.	1.2	0
83	Vertically integrated monolithic pixel sensors for charged particle tracking and biomedical imaging. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 652, 630-633.	1.6	0
84	2D and 3D CMOS MAPS with high performance pixel-level signal processing. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 628, 212-215.	1.6	0
85	Analog design criteria for high-granularity detector readout in the 65 nm CMOS technology. , 2011, , .		0
86	CMOS MAPS in a homogeneous 3D process for charged particle tracking. , 2012, , .		0
87	The first fully functional 3D CMOS chip with Deep N-well active pixel sensors for the ILC vertex detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 732, 543-546.	1.6	0
88	Review of radiation damage studies on DNW CMOS MAPS. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 730, 155-158.	1.6	0
89	Active pixel sensors with enhanced pixel-level analog and digital functionalities in a 2-tier 3D CMOS technology. , 2013, , .		0
90	CMOS MAPS in a Homogeneous 3D Process for Charged Particle Tracking. IEEE Transactions on Nuclear Science, 2014, 61, 700-707.	2.0	0

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91	Low-noise fast charge sensitive amplifier with dynamic signal compression. , 2015, , .		0
92	Advantages of a vertical integration process in the design of DNW MAPS. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2015, 784, 255-259.	1.6	0
93	First test results of the CHIPIX65 asynchronous front-end connected to a 3D sensor. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, 319-320.	1.6	0