Lourdes Pelaz

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

102	1,571	19	36
papers	citations	h-index	g-index
126	1,769	2.6	4.04
ext. papers	ext. citations	avg, IF	L-index

#	Paper	IF	Citations
102	Extending defect models for Si processing: The role of energy barriers for defect transformation, entropy and coalescence mechanism. *Nuclear Instruments & Methods in Physics Research B*, **2022**, 512, 54-59	1.2	1
101	Atomistic simulations of acceptor removal in p-type Si irradiated with neutrons. *Nuclear Instruments & Methods in Physics Research B*, **2022**, 512, 42-48	1.2	0
100	Atomistic modeling of laser-related phenomena **2021**, 79-136		
99	{001} loops in silicon unraveled. *Acta Materialia*, **2019**, 166, 192-201	8.4	2
98	On the anomalous generation of {0 0 1} loops during laser annealing of ion-implanted silicon. *Nuclear Instruments & Methods in Physics Research B*, **2019**, 458, 179-183	1.2	3
97	Generation of amorphous Si structurally compatible with experimental samples through the quenching process: A systematic molecular dynamics simulation study. *Journal of Non-Crystalline Solids*, **2019**, 503-504, 20-27	3.9	3
96	Identification of Extended Defect Atomic Configurations in Silicon Through Transmission Electron Microscopy Image Simulation. *Journal of Electronic Materials*, **2018**, 47, 4955-4958	1.9	1
95	W and X Photoluminescence Centers in Crystalline Si: Chasing Candidates at Atomic Level Through Multiscale Simulations. *Journal of Electronic Materials*, **2018**, 47, 5045-5049	1.9	5
94	Ultrafast Generation of Unconventional {001} Loops in Si. *Physical Review Letters*, **2017**, 119, 205503	7.4	5
93	Improved physical models for advanced silicon device processing. *Materials Science in Semiconductor Processing*, **2017**, 62, 62-79	4.3	3
92	Molecular dynamics simulation of the early stages of self-interstitial clustering in silicon. *Materials Science in Semiconductor Processing*, **2016**, 42, 235-238	4.3	6
91	Insights on the atomistic origin of X and W photoluminescence lines inc-Si fromab initiosimulations. *Journal Physics D: Applied Physics*, **2016**, 49, 075109	3	4
90	Atomistic modeling of ion implantation technologies in silicon. *Nuclear Instruments & Methods in Physics Research B*, **2015**, 352, 148-151	1.2	1
89	A detailed approach for the classification and statistical analysis of irradiation induced defects. *Nuclear Instruments & Methods in Physics Research B*, **2015**, 352, 156-159	1.2	3
88	Modeling of defects, dopant diffusion and clustering in silicon. *Journal of Computational Electronics*, **2014**, 13, 40-58	1.8	12
87	Kinetic Monte Carlo simulations of boron activation in implanted Si under laser thermal annealing. *Applied Physics Express*, **2014**, 7, 021301	2.4	13
86	Molecular dynamics simulations of damage production by thermal spikes in Ge. *Journal of Applied Physics*, **2012**, 111, 033519	2.5	15

(2008-2012)

85	Codiffusion of Phosphorus and Carbon in Preamorphized Ultrashallow Junctions. *Electrochemical and Solid-State Letters*, **2012**, 15, H202		4
84	Molecular dynamics simulation of the regrowth of nanometric multigate Si devices. *Journal of Applied Physics*, **2012**, 111, 034302	2.5	9
83	Kinetic Monte Carlo simulations for transient thermal fields: Computational methodology and application to the submicrosecond laser processes in implanted silicon. *Physical Review E*, **2012**, 86, 036705	2.4	13
82	Modeling of advanced ion implantation technologies in semiconductors **2011**,		1
81	Elucidating the atomistic mechanisms driving self-diffusion of amorphous Si during annealing. *Physical Review B*, **2011**, 83,	3.3	13
80	Simulation study of ion implanted defects associated to luminescence centers in silicon **2011**,		1
79	Kinetics of large B clusters in crystalline and preamorphized silicon. *Journal of Applied Physics*, **2011**, 110, 073524	2.5	18
78	The curious case of thin-body Ge crystallization. *Applied Physics Letters*, **2011**, 99, 131910	3.4	17
77	Molecular implants and cold implants: Two new strategies for junction formation of future Si devices **2011**,		1
76	Self-trapping in B-doped amorphous Si: Intrinsic origin of low acceptor efficiency. *Physical Review B*, **2010**, 81,	3.3	8
75	Simulation of p-n junctions: Present and future challenges for technologies beyond 32 nm. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2010**, 28, C1A1-C1A6	1.3	3
74	Improved atomistic damage generation model for binary collision simulations. *Journal of Applied Physics*, **2009**, 105, 083530	2.5	21
73	Atomistic analysis of B clustering and mobility degradation in highly B-doped junctions. *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, **2009**, 23, 266-284	1	
72	Front-end process modeling in silicon. *European Physical Journal B*, **2009**, 72, 323-359	1.2	27
71	Carrier mobility degradation in highly B-doped junctions **2009**,		1
70	Atomistic process modeling based on Kinetic Monte Carlo and Molecular Dynamics for optimization of advanced devices **2009**,		6
69	Structural transformations from point to extended defects in silicon: A molecular dynamics study. *Physical Review B*, **2008**, 78,	3.3	11
68	F+ implants in crystalline Si: the Si interstitial contribution. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1		

67	Atomistic Simulation Techniques in Front-End Processing. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1		
66	Physics Mechanisms Involved in the Formation and Recrystallization of Amorphous Regions in Si through Ion Irradiation. *Solid State Phenomena*, **2008**, 139, 71-76	0.4	1
65	First Principles Study of Boron in Amorphous Silicon. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1		
64	Evolution of fluorine and boron profiles during annealing in crystalline Si. *Journal of Vacuum Science & Technology B*, **2008**, 26, 377		3
63	Atomistic modeling of impurity ion implantation in ultra-thin-body Si devices **2008**,		4
62	Si interstitial contribution of F+ implants in crystalline Si. *Journal of Applied Physics*, **2008**, 103, 093538	2.5	1
61	Atomistic modeling of FnVm complexes in pre-amorphized Si. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2008**, 154-155, 207-210	3.1	1
60	Evolution of boron-interstitial clusters in preamorphized silicon without the contribution of end-of-range defects. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2008**, 154-155, 247-251	3.1	6
59	Recrystallization of atomically balanced amorphous pockets in Si: A source of point defects. *Physical Review B*, **2007**, 76,	3.3	18
58	Multiscale modeling of radiation damage and annealing in Si. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 255, 95-100	1.2	2
57	Molecular dynamics study of B18H22 cluster implantation into silicon. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 255, 242-246	1.2	1
56	Boron diffusion and activation in SOI and bulk Si: The role of the buried interface. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 257, 152-156	1.2	3
55	Molecular dynamics study of amorphous pocket formation in Si at low energies and its application to improve binary collision models. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 255, 110-113	1.2	6
54	Atomistic analysis of the annealing behavior of amorphous regions in silicon. *Journal of Applied Physics*, **2007**, 101, 093518	2.5	12
53	Molecular dynamics study of damage generation mechanisms in silicon at the low energy regime **2007**,		4
52	Boron pocket and channel deactivation in nMOS transistors with SPER junctions. *IEEE Transactions on Electron Devices*, **2006**, 53, 71-77	2.9	9
51	Modeling of damage generation mechanisms in silicon at energies below the displacement threshold. *Physical Review B*, **2006**, 74,	3.3	32
50	Characterization of octadecaborane implantation into Si using molecular dynamics. *Physical Review B*, **2006**, 74,	3.3	21

49	Physical insight into boron activation and redistribution during annealing after low-temperature solid phase epitaxial regrowth. *Applied Physics Letters*, **2006**, 88, 191917	3.4	17
48	Atomistic analysis of the evolution of boron activation during annealing in crystalline and preamorphized silicon. *Journal of Applied Physics*, **2005**, 97, 103520	2.5	29
47	A novel technique for the structural and energetic characterization of lattice defects in the molecular dynamics framework. *Computational Materials Science*, **2005**, 33, 112-117	3.2	4
46	Atomistic modeling of dopant implantation and annealing in Si: damage evolution, dopant diffusion and activation. *Computational Materials Science*, **2005**, 33, 92-105	3.2	16
45	Molecular dynamics characterization of as-implanted damage in silicon. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2005**, 124-125, 372-375	3.1	14
44	Atomistic modeling of ion beam induced amorphization in silicon. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 241, 501-505	1.2	2
43	Amorphous layer depth dependence on implant parameters during Si self-implantation. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2005**, 124-125, 379-382	3.1	3
42	Boron activation and redistribution during thermal treatments after solid phase epitaxial regrowth. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2005**, 124-125, 205-209	3.1	9
41	Atomistic simulations in Si processing: Bridging the gap between atoms and experiments. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2005**, 124-125, 72-80	3.1	8
40	Role of silicon interstitials in boron cluster dissolution. *Applied Physics Letters*, **2005**, 86, 031908	3.4	15
39	Molecular dynamics study of the configurational and energetic properties of the silicon self-interstitial. *Physical Review B*, **2005**, 71,	3.3	46
38	Boron diffusion in amorphous silicon and the role of fluorine. *Applied Physics Letters*, **2004**, 84, 4283-4285	3.4	45
37	Atomistic Analysis of the Role of Silicon Interstitials in Boron Cluster Dissolution. *Materials Research Society Symposia Proceedings*, **2004**, 810, 334		1
36	Atomistic Modeling of Ion Beam Induced Defects in Si: From Point Defects to Continuous Amorphous Layers.. *Materials Research Society Symposia Proceedings*, **2004**, 810, 422		
35	Atomistic modeling of ion beam induced amorphization in silicon. *Nuclear Instruments & Methods in Physics Research B*, **2004**, 216, 41-45	1.2	3
34	The laser annealing induced phase transition in silicon: a molecular dynamics study. *Nuclear Instruments & Methods in Physics Research B*, **2004**, 216, 57-61	1.2	19
33	Atomistic analysis of the ion beam induced defect evolution. *Nuclear Instruments & Methods in Physics Research B*, **2004**, 216, 100-104	1.2	
32	Atomistic modeling of defect evolution in Si for amorphizing and subamorphizing implants. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2004**, 114-115, 82-87	3.1	7

31	The role of silicon interstitials in the deactivation and reactivation of high concentration boron profiles. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2004**, 114-115, 193-197	3.1	4
30	Ion-beam-induced amorphization and recrystallization in silicon. *Journal of Applied Physics*, **2004**, 96, 5947-5976	2.5	278
29	Microscopic description of the irradiation-induced amorphization in silicon. *Physical Review Letters*, **2003**, 91, 135504	7.4	58
28	Atomistic modeling of amorphization and recrystallization in silicon. *Applied Physics Letters*, **2003**, 82, 2038-2040	3.4	61
27	Atomistic analysis of defect evolution and transient enhanced diffusion in silicon. *Journal of Applied Physics*, **2003**, 94, 1013-1018	2.5	24
26	Monte Carlo modeling of amorphization resulting from ion implantation in Si. *Computational Materials Science*, **2003**, 27, 1-5	3.2	6
25	The role of the bond defect on silicon amorphization: a molecular dynamics study. *Computational Materials Science*, **2003**, 27, 6-9	3.2	4
24	Atomistic modeling of B activation and deactivation for ultra-shallow junction formation **2003**,		1
23	Modeling of Dopant and Defect Interactions in Si Process Simulators. *Defect and Diffusion Forum*, **2003**, 221-223, 31-40	0.7	2
22	Atomistic modeling of deactivation and reactivation mechanisms in high-concentration boron profiles. *Applied Physics Letters*, **2003**, 83, 4166-4168	3.4	28
21	Enhanced low temperature electrical activation of B in Si. *Applied Physics Letters*, **2003**, 82, 215-217	3.4	18
20	Atomistic modeling of the effects of dose and implant temperature on dopant diffusion and amorphization in Si. *Nuclear Instruments & Methods in Physics Research B*, **2001**, 180, 12-16	1.2	3
19	Binding energy of vacancy clusters generated by high-energy ion implantation and annealing of silicon. *Applied Physics Letters*, **2001**, 79, 1273-1275	3.4	17
18	Stability of defects in crystalline silicon and their role in amorphization. *Physical Review B*, **2001**, 64,	3.3	90
17	Atomistic Modeling of Amorphization in Silicon. *Materials Research Society Symposia Proceedings*, **2001**, 669, 1		
16	The Role of Incomplete Interstitial-Vacancy Recombination on Silicon Amorphization **2001**, 26-29		
15	Atomistic Modeling of Complex Silicon Processing Scenarios. *Materials Research Society Symposia Proceedings*, **2000**, 610, 1111		6
14	Use of transient enhanced diffusion to tailor boron out-diffusion. *IEEE Transactions on Electron Devices*, **2000**, 47, 1401-1405	2.9	1

13	Dose, Energy, and Ion Species Dependence of the Effective Plus Factor for Transient Enhanced Diffusion. *Journal of the Electrochemical Society*, **2000**, 147, 3494	3.9	16
12	Activation and deactivation of implanted B in Si. *Applied Physics Letters*, **1999**, 75, 662-664	3.4	47
11	B cluster formation and dissolution in Si: A scenario based on atomistic modeling. *Applied Physics Letters*, **1999**, 74, 3657-3659	3.4	124
10	Modeling of the effects of dose, dose rate, and implant temperature on transient enhanced diffusion. *Applied Physics Letters*, **1999**, 74, 2017-2019	3.4	40
9	Continuum treatment of spatial correlation in damage annealing. *Nuclear Instruments & Methods in Physics Research B*, **1999**, 153, 172-176	1.2	7
8	Modeling of the ion mass effect on transient enhanced diffusion: Deviation from the □+1□model. *Applied Physics Letters*, **1998**, 73, 1421-1423	3.4	54
7	Atomistic Modeling of Point and Extended Defects in Crystalline Materials. *Materials Research Society Symposia Proceedings*, **1998**, 532, 43		51
6	Avalanche breakdown of high-voltage p-n junctions of SiC. *Microelectronics Journal*, **1996**, 27, 43-51	1.8	5
5	Low energy ion implantation simulation using a modified binary collision approximation code. *Nuclear Instruments & Methods in Physics Research B*, **1995**, 102, 228-231	1.2	5
4	Detailed computer simulation of ion implantation processes into crystals. *Materials Science and Technology*, **1995**, 11, 1191-1193	1.5	4
3	Saturation of generation-recombination current for very small recombination times. *Journal of Applied Physics*, **1994**, 76, 7384-7389	2.5	1
2	. *IEEE Transactions on Electron Devices*, **1994**, 41, 587-591	2.9	12
1	On the Forward Conduction Mechanisms in SiC P-N Junctions. *Materials Research Society Symposia Proceedings*, **1994**, 339, 151		1