

# Lourdes Pelaz

## List of Publications by Citations

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102  
papers

1,571  
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19  
h-index

36  
g-index

126  
ext. papers

1,769  
ext. citations

2.6  
avg, IF

4.04  
L-index

#	Paper	IF	Citations
102	Ion-beam-induced amorphization and recrystallization in silicon. <i>Journal of Applied Physics</i> , <b>2004</b> , 96, 5947-5976	2.5	278
101	B cluster formation and dissolution in Si: A scenario based on atomistic modeling. <i>Applied Physics Letters</i> , <b>1999</b> , 74, 3657-3659	3.4	124
100	Stability of defects in crystalline silicon and their role in amorphization. <i>Physical Review B</i> , <b>2001</b> , 64,	3.3	90
99	Atomistic modeling of amorphization and recrystallization in silicon. <i>Applied Physics Letters</i> , <b>2003</b> , 82, 2038-2040	3.4	61
98	Microscopic description of the irradiation-induced amorphization in silicon. <i>Physical Review Letters</i> , <b>2003</b> , 91, 135504	7.4	58
97	Modeling of the ion mass effect on transient enhanced diffusion: Deviation from the $\frac{1}{2}$ model. <i>Applied Physics Letters</i> , <b>1998</b> , 73, 1421-1423	3.4	54
96	Atomistic Modeling of Point and Extended Defects in Crystalline Materials. <i>Materials Research Society Symposia Proceedings</i> , <b>1998</b> , 532, 43		51
95	Activation and deactivation of implanted B in Si. <i>Applied Physics Letters</i> , <b>1999</b> , 75, 662-664	3.4	47
94	Molecular dynamics study of the configurational and energetic properties of the silicon self-interstitial. <i>Physical Review B</i> , <b>2005</b> , 71,	3.3	46
93	Boron diffusion in amorphous silicon and the role of fluorine. <i>Applied Physics Letters</i> , <b>2004</b> , 84, 4283-4285	3.4	45
92	Modeling of the effects of dose, dose rate, and implant temperature on transient enhanced diffusion. <i>Applied Physics Letters</i> , <b>1999</b> , 74, 2017-2019	3.4	40
91	Modeling of damage generation mechanisms in silicon at energies below the displacement threshold. <i>Physical Review B</i> , <b>2006</b> , 74,	3.3	32
90	Atomistic analysis of the evolution of boron activation during annealing in crystalline and preamorphized silicon. <i>Journal of Applied Physics</i> , <b>2005</b> , 97, 103520	2.5	29
89	Atomistic modeling of deactivation and reactivation mechanisms in high-concentration boron profiles. <i>Applied Physics Letters</i> , <b>2003</b> , 83, 4166-4168	3.4	28
88	Front-end process modeling in silicon. <i>European Physical Journal B</i> , <b>2009</b> , 72, 323-359	1.2	27
87	Atomistic analysis of defect evolution and transient enhanced diffusion in silicon. <i>Journal of Applied Physics</i> , <b>2003</b> , 94, 1013-1018	2.5	24
86	Improved atomistic damage generation model for binary collision simulations. <i>Journal of Applied Physics</i> , <b>2009</b> , 105, 083530	2.5	21

85	Characterization of octadecaborane implantation into Si using molecular dynamics. <i>Physical Review B</i> , <b>2006</b> , 74,	3.3	21
84	The laser annealing induced phase transition in silicon: a molecular dynamics study. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2004</b> , 216, 57-61	1.2	19
83	Kinetics of large B clusters in crystalline and preamorphized silicon. <i>Journal of Applied Physics</i> , <b>2011</b> , 110, 073524	2.5	18
82	Recrystallization of atomically balanced amorphous pockets in Si: A source of point defects. <i>Physical Review B</i> , <b>2007</b> , 76,	3.3	18
81	Enhanced low temperature electrical activation of B in Si. <i>Applied Physics Letters</i> , <b>2003</b> , 82, 215-217	3.4	18
80	The curious case of thin-body Ge crystallization. <i>Applied Physics Letters</i> , <b>2011</b> , 99, 131910	3.4	17
79	Physical insight into boron activation and redistribution during annealing after low-temperature solid phase epitaxial regrowth. <i>Applied Physics Letters</i> , <b>2006</b> , 88, 191917	3.4	17
78	Binding energy of vacancy clusters generated by high-energy ion implantation and annealing of silicon. <i>Applied Physics Letters</i> , <b>2001</b> , 79, 1273-1275	3.4	17
77	Atomistic modeling of dopant implantation and annealing in Si: damage evolution, dopant diffusion and activation. <i>Computational Materials Science</i> , <b>2005</b> , 33, 92-105	3.2	16
76	Dose, Energy, and Ion Species Dependence of the Effective Plus Factor for Transient Enhanced Diffusion. <i>Journal of the Electrochemical Society</i> , <b>2000</b> , 147, 3494	3.9	16
75	Molecular dynamics simulations of damage production by thermal spikes in Ge. <i>Journal of Applied Physics</i> , <b>2012</b> , 111, 033519	2.5	15
74	Role of silicon interstitials in boron cluster dissolution. <i>Applied Physics Letters</i> , <b>2005</b> , 86, 031908	3.4	15
73	Molecular dynamics characterization of as-implanted damage in silicon. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2005</b> , 124-125, 372-375	3.1	14
72	Kinetic Monte Carlo simulations of boron activation in implanted Si under laser thermal annealing. <i>Applied Physics Express</i> , <b>2014</b> , 7, 021301	2.4	13
71	Elucidating the atomistic mechanisms driving self-diffusion of amorphous Si during annealing. <i>Physical Review B</i> , <b>2011</b> , 83,	3.3	13
70	Kinetic Monte Carlo simulations for transient thermal fields: Computational methodology and application to the submicrosecond laser processes in implanted silicon. <i>Physical Review E</i> , <b>2012</b> , 86, 036703	2.4	13
69	Modeling of defects, dopant diffusion and clustering in silicon. <i>Journal of Computational Electronics</i> , <b>2014</b> , 13, 40-58	1.8	12
68	Atomistic analysis of the annealing behavior of amorphous regions in silicon. <i>Journal of Applied Physics</i> , <b>2007</b> , 101, 093518	2.5	12

67	. <i>IEEE Transactions on Electron Devices</i> , <b>1994</b> , 41, 587-591	2.9	12
66	Structural transformations from point to extended defects in silicon: A molecular dynamics study. <i>Physical Review B</i> , <b>2008</b> , 78,	3.3	11
65	Molecular dynamics simulation of the regrowth of nanometric multigate Si devices. <i>Journal of Applied Physics</i> , <b>2012</b> , 111, 034302	2.5	9
64	Boron pocket and channel deactivation in nMOS transistors with SPER junctions. <i>IEEE Transactions on Electron Devices</i> , <b>2006</b> , 53, 71-77	2.9	9
63	Boron activation and redistribution during thermal treatments after solid phase epitaxial regrowth. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2005</b> , 124-125, 205-209	3.1	9
62	Self-trapping in B-doped amorphous Si: Intrinsic origin of low acceptor efficiency. <i>Physical Review B</i> , <b>2010</b> , 81,	3.3	8
61	Atomistic simulations in Si processing: Bridging the gap between atoms and experiments. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2005</b> , 124-125, 72-80	3.1	8
60	Atomistic modeling of defect evolution in Si for amorphizing and subamorphizing implants. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2004</b> , 114-115, 82-87	3.1	7
59	Continuum treatment of spatial correlation in damage annealing. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>1999</b> , 153, 172-176	1.2	7
58	Molecular dynamics simulation of the early stages of self-interstitial clustering in silicon. <i>Materials Science in Semiconductor Processing</i> , <b>2016</b> , 42, 235-238	4.3	6
57	Atomistic process modeling based on Kinetic Monte Carlo and Molecular Dynamics for optimization of advanced devices <b>2009</b> ,		6
56	Molecular dynamics study of amorphous pocket formation in Si at low energies and its application to improve binary collision models. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2007</b> , 255, 110-113	1.2	6
55	Evolution of boron-interstitial clusters in preamorphized silicon without the contribution of end-of-range defects. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2008</b> , 154-155, 247-251	3.1	6
54	Monte Carlo modeling of amorphization resulting from ion implantation in Si. <i>Computational Materials Science</i> , <b>2003</b> , 27, 1-5	3.2	6
53	Atomistic Modeling of Complex Silicon Processing Scenarios. <i>Materials Research Society Symposia Proceedings</i> , <b>2000</b> , 610, 1111		6
52	W and X Photoluminescence Centers in Crystalline Si: Chasing Candidates at Atomic Level Through Multiscale Simulations. <i>Journal of Electronic Materials</i> , <b>2018</b> , 47, 5045-5049	1.9	5
51	Ultrafast Generation of Unconventional {001} Loops in Si. <i>Physical Review Letters</i> , <b>2017</b> , 119, 205503	7.4	5
50	Low energy ion implantation simulation using a modified binary collision approximation code. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>1995</b> , 102, 228-231	1.2	5

49	Avalanche breakdown of high-voltage p-n junctions of SiC. <i>Microelectronics Journal</i> , <b>1996</b> , 27, 43-51	1.8	5
48	Codiffusion of Phosphorus and Carbon in Preamorphized Ultrashallow Junctions. <i>Electrochemical and Solid-State Letters</i> , <b>2012</b> , 15, H202		4
47	Atomistic modeling of impurity ion implantation in ultra-thin-body Si devices <b>2008</b> ,		4
46	Molecular dynamics study of damage generation mechanisms in silicon at the low energy regime <b>2007</b> ,		4
45	A novel technique for the structural and energetic characterization of lattice defects in the molecular dynamics framework. <i>Computational Materials Science</i> , <b>2005</b> , 33, 112-117	3.2	4
44	The role of silicon interstitials in the deactivation and reactivation of high concentration boron profiles. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2004</b> , 114-115, 193-197	3.1	4
43	The role of the bond defect on silicon amorphization: a molecular dynamics study. <i>Computational Materials Science</i> , <b>2003</b> , 27, 6-9	3.2	4
42	Detailed computer simulation of ion implantation processes into crystals. <i>Materials Science and Technology</i> , <b>1995</b> , 11, 1191-1193	1.5	4
41	Insights on the atomistic origin of X and W photoluminescence lines in c-Si from ab initio simulations. <i>Journal Physics D: Applied Physics</i> , <b>2016</b> , 49, 075109	3	4
40	A detailed approach for the classification and statistical analysis of irradiation induced defects. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2015</b> , 352, 156-159	1.2	3
39	Improved physical models for advanced silicon device processing. <i>Materials Science in Semiconductor Processing</i> , <b>2017</b> , 62, 62-79	4.3	3
38	Simulation of p-n junctions: Present and future challenges for technologies beyond 32 nm. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2010</b> , 28, C1A1-C1A6	1.3	3
37	Evolution of fluorine and boron profiles during annealing in crystalline Si. <i>Journal of Vacuum Science &amp; Technology B</i> , <b>2008</b> , 26, 377		3
36	Boron diffusion and activation in SOI and bulk Si: The role of the buried interface. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2007</b> , 257, 152-156	1.2	3
35	Atomistic modeling of ion beam induced amorphization in silicon. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2004</b> , 216, 41-45	1.2	3
34	Amorphous layer depth dependence on implant parameters during Si self-implantation. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2005</b> , 124-125, 379-382	3.1	3
33	Atomistic modeling of the effects of dose and implant temperature on dopant diffusion and amorphization in Si. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2001</b> , 180, 12-16	1.2	3
32	On the anomalous generation of {0 0 1} loops during laser annealing of ion-implanted silicon. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2019</b> , 458, 179-183	1.2	3

31	Generation of amorphous Si structurally compatible with experimental samples through the quenching process: A systematic molecular dynamics simulation study. <i>Journal of Non-Crystalline Solids</i> , <b>2019</b> , 503-504, 20-27	3.9	3
30	Multiscale modeling of radiation damage and annealing in Si. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2007</b> , 255, 95-100	1.2	2
29	Modeling of Dopant and Defect Interactions in Si Process Simulators. <i>Defect and Diffusion Forum</i> , <b>2003</b> , 221-223, 31-40	0.7	2
28	Atomistic modeling of ion beam induced amorphization in silicon. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2005</b> , 241, 501-505	1.2	2
27	{001} loops in silicon unraveled. <i>Acta Materialia</i> , <b>2019</b> , 166, 192-201	8.4	2
26	Atomistic modeling of ion implantation technologies in silicon. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2015</b> , 352, 148-151	1.2	1
25	Identification of Extended Defect Atomic Configurations in Silicon Through Transmission Electron Microscopy Image Simulation. <i>Journal of Electronic Materials</i> , <b>2018</b> , 47, 4955-4958	1.9	1
24	Modeling of advanced ion implantation technologies in semiconductors <b>2011</b> ,		1
23	Simulation study of ion implanted defects associated to luminescence centers in silicon <b>2011</b> ,		1
22	Molecular implants and cold implants: Two new strategies for junction formation of future Si devices <b>2011</b> ,		1
21	Carrier mobility degradation in highly B-doped junctions <b>2009</b> ,		1
20	Physics Mechanisms Involved in the Formation and Recrystallization of Amorphous Regions in Si through Ion Irradiation. <i>Solid State Phenomena</i> , <b>2008</b> , 139, 71-76	0.4	1
19	Si interstitial contribution of F+ implants in crystalline Si. <i>Journal of Applied Physics</i> , <b>2008</b> , 103, 093538	2.5	1
18	Molecular dynamics study of B18H22 cluster implantation into silicon. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2007</b> , 255, 242-246	1.2	1
17	Atomistic modeling of FnVm complexes in pre-amorphized Si. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , <b>2008</b> , 154-155, 207-210	3.1	1
16	Atomistic Analysis of the Role of Silicon Interstitials in Boron Cluster Dissolution. <i>Materials Research Society Symposia Proceedings</i> , <b>2004</b> , 810, 334		1
15	Atomistic modeling of B activation and deactivation for ultra-shallow junction formation <b>2003</b> ,		1
14	Use of transient enhanced diffusion to tailor boron out-diffusion. <i>IEEE Transactions on Electron Devices</i> , <b>2000</b> , 47, 1401-1405	2.9	1

- 13 Saturation of generation-recombination current for very small recombination times. *Journal of Applied Physics*, **1994**, 76, 7384-7389 2.5 1
- 12 On the Forward Conduction Mechanisms in SiC P-N Junctions. *Materials Research Society Symposia Proceedings*, **1994**, 339, 151 1
- 11 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
- 10 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
- 9 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
- 8 F+ implants in crystalline Si: the Si interstitial contribution. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1
- 7 Atomistic Simulation Techniques in Front-End Processing. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1
- 6 First Principles Study of Boron in Amorphous Silicon. *Materials Research Society Symposia Proceedings*, **2008**, 1070, 1
- 5 Atomistic Modeling of Ion Beam Induced Defects in Si: From Point Defects to Continuous Amorphous Layers.. *Materials Research Society Symposia Proceedings*, **2004**, 810, 422
- 4 Atomistic analysis of the ion beam induced defect evolution. *Nuclear Instruments & Methods in Physics Research B*, **2004**, 216, 100-104 1.2
- 3 Atomistic Modeling of Amorphization in Silicon. *Materials Research Society Symposia Proceedings*, **2001**, 669, 1
- 2 The Role of Incomplete Interstitial-Vacancy Recombination on Silicon Amorphization **2001**, 26-29
- 1 Atomistic modeling of laser-related phenomena **2021**, 79-136