Pedro LÃ³pez MartÃ-n

List of Publications by Year
in descending order

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80 papers	447 citations	687363 13 h-index	839539 18 g-index
81 all docs	81 docs citations	81 times ranked	398 citing authors

#	Article	IF	Citations
1	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.	1.4	1
2	Atomistic simulations of acceptor removal in p-type Si irradiated with neutrons. Nuclear Instruments & Methods in Physics Research B, 2022, 512, 42-48.	1.4	3
3	Atomistic modeling of laser-related phenomena. , 2021, , 79-136.		0
4	{001} loops in silicon unraveled. Acta Materialia, 2019, 166, 192-201.	7.9	4
5	On the anomalous generation of {0â€‰0â€‰1} loops during laser annealing of ion-implanted silicon. Nuclear Instruments & Methods in Physics Research B, 2019, 458, 179-183.	1.4	4
6	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.	3.1	4
7	Identification of Extended Defect Atomic Configurations in Silicon Through Transmission Electron Microscopy Image Simulation. Journal of Electronic Materials, 2018, 47, 4955-4958.	2.2	1
8	W and X Photoluminescence Centers in Crystalline Si: Chasing Candidates at Atomic Level Through Multiscale Simulations. Journal of Electronic Materials, 2018, 47, 5045-5049.	2.2	7
9	Modeling SiGe Through Classical Molecular Dynamics Simulations: Chasing an Appropriate Empirical Potential. , 2018, , .		0
10	I<inf>ON</inf> Degradation in Si Devices in Harsh Radiation Environments: Modeling of Damage-Dopant Interactions. , 2018, , .		2
11	Ultrafast Generation of Unconventional<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo stretchy="false">{</mml:mo><mml:mn>001</mml:mn><mml:mo stretchy="false">}</mml:mo></mml:mrow></mml:math>Loops in Si. Physical Review Letters, 2017, 119, 205502.	7.8	6
12	Characterization of amorphous Si generated through classical molecular dynamics simulations. , 2017, , .		0
13	Evaluation of energy barriers for topological transitions of Si self-interstitial clusters by classical molecular dynamics and the kinetic activation-relaxation technique. , 2017, , .		0
14	Improved physical models for advanced silicon device processing. Materials Science in Semiconductor Processing, 2017, 62, 62-79.	4.0	5
15	Insights on the atomistic origin of X and W photoluminescence lines inc-Si fromab initiosimulations. Journal Physics D: Applied Physics, 2016, 49, 075109.	2.8	10
16	Atomistic study of the anisotropic interaction between extended and point defects in crystalline silicon and its influence on Si self-interstitial diffusion. , 2016, , .		0
17	Molecular dynamics simulation of the early stages of self-interstitial clustering in silicon. Materials Science in Semiconductor Processing, 2016, 42, 235-238.	4.0	7
18	Atomistic modeling of ion implantation technologies in silicon. Nuclear Instruments & Methods in Physics Research B, 2015, 352, 148-151.	1.4	1

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19	A detailed approach for the classification and statistical analysis of irradiation induced defects. Nuclear Instruments & Methods in Physics Research B, 2015, 352, 156-159.	1.4	3
20	Modeling of defects, dopant diffusion and clustering in silicon. Journal of Computational Electronics, 2014, 13, 40-58.	2.5	18
21	Kinetic Monte Carlo simulations of boron activation in implanted Si under laser thermal annealing. Applied Physics Express, 2014, 7, 021301.	2.4	14
22	Dopant dynamics and defects evolution in implanted silicon under laser irradiations: A coupled continuum and kinetic Monte Carlo approach. , 2013, , .		0
23	Molecular dynamics simulation of the regrowth of nanometric multigate Si devices. Journal of Applied Physics, 2012, 111, 034302.	2.5	9
24	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.	2.1	18
25	Kinetic Monte Carlo simulation of dopant-defect systems under submicrosecond laser thermal processes. , 2012, , .		0
26	Molecular dynamics simulations of damage production by thermal spikes in Ge. Journal of Applied Physics, 2012, 111, 033519.	2.5	21
27	Temperature effect on damage generation mechanisms during ion implantation in Si. A classical molecular dynamics study. AIP Conference Proceedings, 2012, , .	0.4	0
28	Modeling of advanced ion implantation technologies in semiconductors. , 2011, , .		1
29	Simulation study of ion implanted defects associated to luminescence centers in silicon. , 2011, , .		1
30	Molecular implants and cold implants: Two new strategies for junction formation of future Si devices. , 2011, , .		2
31	Atomistic process simulation for future generation nanodevices. , 2011, , .		0
32	Modeling of defect generation and dissolution in ion implanted semiconductors. , 2011, , .		1
33	Atomistic analysis of B clustering and mobility degradation in highly Bâ€doped junctions. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2010, 23, 266-284.	1.9	1
34	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.	1.2	3
35	Improved atomistic damage generation model for binary collision simulations. Journal of Applied Physics, 2009, 105, 083530.	2.5	22
36	Atomistic Modeling of Junction Formation: Tools for Physics Understanding and Process Optimization. ECS Transactions, 2009, 25, 411-418.	0.5	0

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37	Front-end process modeling in silicon. European Physical Journal B, 2009, 72, 323-359.	1.5	32
38	Atomistic simulations of the effect of implant parameters on Si damage. , 2009, , .		0
39	Carrier mobility degradation in highly B-doped junctions. , 2009, , .		1
40	Atomistic process modeling based on Kinetic Monte Carlo and Molecular Dynamics for optimization of advanced devices. , 2009, , .		7
41	Influence of Si surface on damage generation and recombination. , 2009, , .		0
42	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.	3.5	1
43	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.	3.5	7
44	Structural transformations from point to extended defects in silicon: A molecular dynamics study. Physical Review B, 2008, 78, .	3.2	13
45	F+ implants in crystalline Si: the Si interstitial contribution. Materials Research Society Symposia Proceedings, 2008, 1070, 1.	0.1	0
46	Atomistic Simulation Techniques in Front-End Processing. Materials Research Society Symposia Proceedings, 2008, 1070, 1.	0.1	0
47	Physics Mechanisms Involved in the Formation and Recrystallization of Amorphous Regions in Si through Ion Irradiation. Solid State Phenomena, 2008, 139, 71-76.	0.3	1
48	Evolution of fluorine and boron profiles during annealing in crystalline Si. Journal of Vacuum Science & Technology B, 2008, 26, 377.	1.3	3
49	Atomistic modeling of impurity ion implantation in ultra-thin-body Si devices. , 2008, , .		8
50	Si interstitial contribution of F+ implants in crystalline Si. Journal of Applied Physics, 2008, 103, .	2.5	1
51	Atomistic analysis of the annealing behavior of amorphous regions in silicon. Journal of Applied Physics, 2007, 101, 093518.	2.5	14
52	Molecular dynamics study of damage generation mechanisms in silicon at the low energy regime. , 2007, , .		5
53	Boron Electrical Activation in SOI Compared to Bulk Si Substrates. , 2007, , .		0
54	Atomistic Simulation of Damage Accumulation during Shallow B and As Implant into Si. , 2007, , .		1

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55	Physics based models for process optimization. , 2007, , .		0
56	Molecular Dynamics Simulation of Octadecaborane Implantation into Silicon. , 2007, , .		0
57	Recrystallization of atomically balanced amorphous pockets in Si: A source of point defects. Physical Review B, 2007, 76, .	3.2	18
58	Multiscale modeling of radiation damage and annealing in Si. Nuclear Instruments & Methods in Physics Research B, 2007, 255, 95-100.	1.4	2
59	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.	1.4	6
60	Molecular Dynamics Modeling of Octadecaborane Implantation into Si. , 2007, , 17-20.		0
61	An in situ transmission electron microscope study of the anomalous annealing of spatially isolated disordered zones in silicon. Journal of Physics: Conference Series, 2006, 26, 284-287.	0.4	2
62	Physical insight into ultra-shallow junction formation through atomistic modeling. Nuclear Instruments & Methods in Physics Research B, 2006, 253, 41-45.	1.4	9
63	Atomistic modeling of dopant implantation, diffusion, and activation. Journal of Vacuum Science & Technology B, 2006, 24, 2432.	1.3	6
64	Physical insight into boron activation and redistribution during annealing after low-temperature solid phase epitaxial regrowth. Applied Physics Letters, 2006, 88, 191917.	3.3	22
65	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.	3.5	15
66	Atomistic modeling of ion beam induced amorphization in silicon. Nuclear Instruments & Methods in Physics Research B, 2005, 241, 501-505.	1.4	2
67	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.	3.5	4
68	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.	3.5	8
69	Role of silicon interstitials in boron cluster dissolution. Applied Physics Letters, 2005, 86, 031908.	3.3	16
70	Atomistic analysis of the evolution of boron activation during annealing in crystalline and preamorphized silicon. Journal of Applied Physics, 2005, 97, 103520.	2.5	34
71	A novel technique for the structural and energetic characterization of lattice defects in the molecular dynamics framework. Computational Materials Science, 2005, 33, 112-117.	3.0	5
72	Atomistic modeling of dopant implantation and annealing in Si: damage evolution, dopant diffusion and activation. Computational Materials Science, 2005, 33, 92-105.	3.0	21

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73	Atomistic Analysis of the Role of Silicon Interstitials in Boron Cluster Dissolution. Materials Research Society Symposia Proceedings, 2004, 810, 334.	0.1	2
74	Atomistic Modeling of Ion Beam Induced Defects in Si: From Point Defects to Continuous Amorphous Layers.. Materials Research Society Symposia Proceedings, 2004, 810, 422.	0.1	0
75	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.	3.5	7
76	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.	3.5	4
77	Morphology of as-implanted damage in silicon: a molecular dynamics study. , 0, , .		0
78	Atomistic analysis of annealing behavior of amorphous regions. , 0, , .		1
79	Boron redistribution in pre-amorphized Si during thermal annealing. , 0, , .		0
80	Simulation analysis of boron pocket deactivation in NMOS transistors with SPER junctions. , 0, , .		0