

Database References

Below we list the references to the articles that were used to build the “Monoatomic.csv” and “Polyatomic.csv” files.

References

- [1] Ackland, G. J. and Wooding, S. J. and Bacon, D. J., "Defect, surface and displacement-threshold properties of α -zirconium simulated with a many-body potential," *Philosophical Magazine A*, vol. 71, no. 3, pp. 553–565, 1995.
- [2] Ackland, G. J. and Bacon, D. J. and Calder, A. F. and Harry, T., "Computer simulation of point defect properties in dilute Fe," *Philosophical Magazine A*, vol. 75, no. 3, pp. 713–732, 1997.
- [3] Alamo, A. and De Novion, C. H. and Lesueur, D. and Dirand, M., "Displacement threshold energy determination for Cu," *Radiation Effects*, vol. 70, no. 1-4, pp. 157–172, 1983.
- [4] Allison, C. Y. and Stoller, R. E. and Kenik, E. A., "Electron microscopy of electron damage in tantalum carbide," *Journal of Applied Physics*, vol. 63, no. 5, pp. 1740–1743, 1988.
- [5] Anon., "Standard practice for neutron radiation damage simulation by charged-particle irradiation," United States: ASTM, 1984.
- [6] Arnold, George W. and Compton, W. Dale, "Threshold Energy," *Phys. Rev. Lett.*, vol. 4, no. 2, pp. 66–68, 1960.
- [7] Arnold, George W., "Defect Structure," *Phys. Rev.*, vol. 140, no. 1A, pp. A176–A178, 1965.
- [8] Audouard, A. and Balogh, J. and Dural, J. and Jousset, J. C., "Displacement threshold energy of iron atoms in amorphous and crystalline Fe," *Radiation Effects*, vol. 62, no. 3-4, pp. 161–165, 1982.
- [9] Bacon, DJ and Calder, AF and Harder, JM and Wooding, SJ, "Computer simulation of low-energy displacement events in pure bcc and hcp metals," *Journal of Nuclear Materials*, vol. 205, pp. 52–58, 1993.

- [10] Bacon, D.J. and Deng, H.F. and Gao, F., "Computer simulation of threshold displacement events in alloys," *Journal of Nuclear Materials*, vol. 205, pp. 84–91, 1993.
- [11] Banbury, P. C. and Haddad, I. N., "Energy dependence of anisotropy of defect production in electron irradiated diamond-type crystals: II," *The Philosophical Magazine: A Journal of Theoretical Experimental and Applied Physics*, vol. 14, no. 130, pp. 841–846, 1966.
- [12] Banhart, F. and Li, J. X. and Krasheninnikov, A. V., "Carbon nanotubes under electron irradiation: Stability," *Phys. Rev. B*, vol. 71, no. 24, pp. 241408, 2005.
- [13] Banisalman, Mosab Jaser and Park, Sehyeok and Oda, Takuji, "Evaluation of the threshold displacement energy in tungsten by molecular dynamics calculations," *Journal of Nuclear Materials*, vol. 495, pp. 277–284, 2017.
- [14] Banisalman, Mosab Jaser and Oda, Takuji, "Atomistic simulation for strain effects on threshold displacement energies in refractory metals," *Computational Materials Science*, vol. 158, pp. 346–352, 2019.
- [15] Barry, A.L. and Lehmann, B. and Fritsch, D. and Braunig, D., "Energy dependence of electron damage and displacement threshold energy in 6H," *IEEE Trans. Nucl. Sci.*, vol. 38, no. 6, pp. 1111–1115, 1991.
- [16] Toth, Robert S. and Sato, Hiroshi, "Antiphase Domains," *Journal of Applied Physics*, vol. 35, no. 3, pp. 698–703, 1964.
- [17] Bauer, Walter and Sosin, A., "Evaluation and Interpretation," *Journal of Applied Physics*, vol. 37, no. 4, pp. 1780–1787, 1966.
- [18] Bauer, Walter and Goepfinger, W. F., "Point-Defect," *Phys. Rev.*, vol. 154, no. 3, pp. 588–596, 1967.
- [19] Bauer, W. and Anderman, A. I. and Sosin, A., "Atomic Displacement," *Phys. Rev.*, vol. 185, no. 3, pp. 870–875, 1969.
- [20] Beeler, Benjamin and Asta, Mark and Hosemann, Peter and Grønbech-Jensen, Niels, "Effect of strain and temperature on the threshold displacement energy in body-centered cubic iron," *Journal of Nuclear Materials*, vol. 474, pp. 113–119, 2016.
- [21] Beeler, Benjamin and Zhang, Yongfeng and Okuniewski, Maria and Deo, Chaitanya, "Calculation of the displacement energy of α and γ uranium," *Journal of Nuclear Materials*, vol. 508, pp. 181–194, 2018.
- [22] Dacus, Benjamin and Beeler, Benjamin and Schwen, Daniel, "Calculation of threshold displacement energies in UO₂," *Journal of Nuclear Materials*, vol. 520, pp. 152–164, 2019.

- [23] Biget, M. and Maury, F. and Vajda, P. and Lucasson, A. and Lucasson, P., "Production and mutual annihilation of frenkel pairs in low temperature irradiated zirconium," *Radiation Effects*, vol. 7, no. 3-4, pp. 223–229, 1971.
- [24] Biget, M. and Vajda, P. and Lucasson, A. and Lucasson, P., "A study of electron irradiation damage in single crystals of molybdenum," *Radiation Effects*, vol. 21, no. 4, pp. 229–234, 1974.
- [25] Biget, M. and Maury, F. and Vajda, P. and Lucasson, A. and Lucasson, P., "Near-threshold displacements in tantalum single crystals," *Phys. Rev. B*, vol. 19, no. 2, pp. 820–830, 1979.
- [26] Bishop, Clare L. and Murphy, Samuel T. and Rushton, Michael J.D. and Grimes, Robin W., "The influence of dipole polarisation on threshold displacement energies in UO_2 ," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 274, pp. 195–199, 2012.
- [27] Björkas, C. and Nordlund, K., "Comparative study of cascade damage in Fe," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 259, no. 2, pp. 853–860, 2007.
- [28] Bois, P and Beuneu, F, "Displacement threshold energy in pure Bi," *J. Phys. F: Met. Phys.*, vol. 17, no. 12, pp. 2365–2372, 1987.
- [29] Bond, G. M. and Robertson, I. M. and Zeides, F. M. and Birnbaum, H. K., "Sub," *Philosophical Magazine A*, vol. 55, no. 5, pp. 669–681, 1987.
- [30] Bourgoin, J. C. and Massarani, B., "Threshold energy for atomic displacement in diamond," *Phys. Rev. B*, vol. 14, no. 8, pp. 3690–3694, 1976.
- [31] Bryant, FJ and Cox, AFJ, "The effect of radiation damage at room temperature on the thermoluminescence characteristic of single crystals of zinc sulphide," *Physics Letters*, vol. 20, no. 2, pp. 108–109, 1966.
- [32] Bryant, F J and Cox, A F J and Webster, E, "Atomic displacements and the nature of band edge radiative emission in cadmium telluride," *J. Phys. C: Solid State Phys.*, vol. 1, no. 6, pp. 1737–1745, 1968.
- [33] Bryant, F.J. and Baker, A.T.J., "Damage sensitive cathodoluminescence of zinc telluride," *Physics Letters A*, vol. 35, no. 6, pp. 457–458, 1971.
- [34] Bryant, F J and Baker, A T J, "Threshold energy for tellurium displacement in zinc telluride," *J. Phys. C: Solid State Phys.*, vol. 5, no. 16, pp. 2283–2288, 1972.
- [35] Bryant, F J and Cox, A F J, "Atomic displacement energies for binary semiconductors," *J. Phys. C: Solid State Phys.*, vol. 1, no. 6, pp. 1734–1736, 1968.

- [36] Buck, E. C., "Effects of electron irradiation of rutile," *Radiation Effects and Defects in Solids*, vol. 133, no. 2, pp. 141–152, 1995.
- [37] Caro, A. and Victoria, M. and Averback, R. S., "Threshold displacement and interstitial-atom formation energies in Ni," *J. Mater. Res.*, vol. 5, no. 7, pp. 1409–1413, 1990.
- [38] Caulfield, Kevin J. and Cooper, Ronald and Boas, John E, "Point Defects," *Journal of the American Ceramic Society*, vol. 78, no. 4, pp. 1054–1060, 1995.
- [39] Chadderton, Lewis T. and Torrens, Ian Mcc, "Correlated Atomic Collisions in Irradiated Crystal Lattices," *Nature*, vol. 208, no. 5013, pp. 880–882, 1965.
- [40] Chartier, Alain and Meis, Constantin and Crocombette, Jean-Paul and Corrales, L. René and Weber, William J., "Atomistic modeling of displacement cascades in La," *Phys. Rev. B*, vol. 67, no. 17, pp. 174102, 2003.
- [41] Chen, Y and Trueblood, D L and Schow, O E and Tohver, H T, "Colour centres in electron irradiated mgo," *J. Phys. C: Solid State Phys.*, vol. 3, no. 12, pp. 2501–2508, 1970.
- [42] Chen, Nanjun and Gray, Sean and Hernandez-Rivera, Efrain and Huang, Danhong and LeVan, Paul D. and Gao, Fei, "Computational simulation of threshold displacement energies of GaAs," *J. Mater. Res.*, vol. 32, no. 8, pp. 1555–1562, 2017.
- [43] Chen, Elton Y. and Deo, Chaitanya and Dingreville, Rémi, "Atomistic simulations of temperature and direction dependent threshold displacement energies in α - and γ -uranium," *Computational Materials Science*, vol. 157, pp. 75–86, 2019.
- [44] Cheng, Gang and Wei, Nian and Wang, Lizong and Qi, Jianqi and Zeng, Qiang and Lu, Tiecheng and Wang, Zhiguo, "An *ab initio*," *Journal of Applied Physics*, vol. 126, no. 5, pp. 055701, 2019.
- [45] Clinard Jr, Frank W. and Hobbs, Linn W., "Radiation effects in non-metals," in *Modern Problems in Condensed Matter Sciences*, vol. 13, pp. 387–471, Elsevier, 1986.
- [46] Compton, W. Dale and Arnold, George W., "Radiation effects in fused silica and α -Al₂O₃," *Discussions of the Faraday Society*, vol. 31, pp. 130–139, 1961.
- [47] Cooper, R. and Smith, K.L. and Colella, M. and Vance, E.R. and Phillips, M., "Optical emission due to ionic displacements in alkaline earth titanates," *Journal of Nuclear Materials*, vol. 289, no. 1-2, pp. 199–203, 2001.

- [48] Corbett, J. W. and Denney, J. M. and Fiske, M. D. and Walker, R. M., "Electron Irradiation," *Phys. Rev.*, vol. 108, no. 4, pp. 954–964, 1957.
- [49] Corbett, J. W. and Walker, R. M., "Threshold Measurements," *Phys. Rev.*, vol. 117, no. 4, pp. 970–971, 1960.
- [50] Costantini, Jean-Marc and Beuneu, François, "Threshold displacement energy in yttria-stabilized zirconia," *Phys. Status Solidi (c)*, vol. 4, no. 3, pp. 1258–1263, 2007.
- [51] Costantini, Jean-Marc and Beuneu, François and Morrison-Smith, Sarah and Devanathan, Ram and Weber, William J., "Paramagnetic defects in electron-irradiated yttria-stabilized zirconia: Effect," *Journal of Applied Physics*, vol. 110, no. 12, pp. 123506, 2011.
- [52] Cowen, Benjamin J. and El-Genk, Mohamed S., "Probability-based threshold displacement energies for oxygen and silicon atoms in α -quartz silica," *Computational Materials Science*, vol. 117, pp. 164–171, 2016.
- [53] Crespi, Vincent H. and Chopra, Nasreen G. and Cohen, Marvin L. and Zettl, A. and Louie, Steven G., "Anisotropic electron-beam damage and the collapse of carbon nanotubes," *Phys. Rev. B*, vol. 54, no. 8, pp. 5927–5931, 1996.
- [54] Crocombette, Jean-Paul and Ghaleb, Dominique, "Molecular dynamics modeling of irradiation damage in pure and uranium-doped zircon," *Journal of Nuclear Materials*, vol. 295, no. 2-3, pp. 167–178, 2001.
- [55] Cui, F.Z. and Li, H.D. and Jin, L. and Li, Y.Y., "Simulations on radiation damage initiated by O," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 91, no. 1-4, pp. 374–377, 1994.
- [56] Dacus, Benjamin and Beeler, Benjamin and Schwen, Daniel, "Calculation of threshold displacement energies in UO₂," *Journal of Nuclear Materials*, vol. 520, pp. 152–164, 2019.
- [57] Daou, J. N. and Bonnet, J. E. and Vajda, P. and Biget, M. and Lucasson, A. and Lucasson, P., "The effect of low-temperature electron irradiation on lutetium and its hydrogen solid solutions," *Phys. Stat. Sol. (a)*, vol. 40, no. 1, pp. 101–108, 1977.
- [58] Das, Gopal, "Determination of the threshold-displacement energy in α -Al₂O₃ by high-voltage electron microscopy," *Journal of Materials Science Letters*, vol. 2, no. 8, pp. 453–456, 1983.
- [59] Delgado, Diego and Vila, Rafael, "Statistical Molecular," *Journal of Nuclear Materials*, vol. 419, no. 1-3, pp. 32–38, 2011.

- [60] Detweiler, Robert M. and Kulp, B. A., "Annealing of Radiation," *Phys. Rev.*, vol. 146, no. 2, pp. 513–516, 1966.
- [61] Devanathan, Ramaswami and De La Rubia, T Diaz and Weber, William J, "Displacement threshold energies in β -SiC," *Journal of Nuclear Materials*, vol. 253, no. 1-3, pp. 47–52, 1998.
- [62] Devanathan, R and Weber, W.J, "Displacement energy surface in 3C," *Journal of Nuclear Materials*, vol. 278, no. 2-3, pp. 258–265, 2000.
- [63] Devanathan, R. and Weber, W. J. and Gao, F., "Atomic scale simulation of defect production in irradiated 3C," *Journal of Applied Physics*, vol. 90, no. 5, pp. 2303–2309, 2001.
- [64] Devanathan, R. and Weber, W. J., "Insights into the radiation response of pyrochlores from calculations of threshold displacement events," *Journal of Applied Physics*, vol. 98, no. 8, pp. 086110, 2005.
- [65] Devanathan, Ram and Weber, William J., "Simulation of collision cascades and thermal spikes in ceramics," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 268, no. 19, pp. 2857–2862, 2010.
- [66] Dimitrov, C and Sitaud, B and Dimitrov, O, "Displacement threshold energies in Ni (Al) solid solutions and in Ni₃Al," *Journal of Nuclear Materials*, vol. 208, no. 1-2, pp. 53–60, 1994.
- [67] Egerton, R. F., "The threshold energy for electron irradiation damage in single-crystal graphite," *The Philosophical Magazine: A Journal of Theoretical Experimental and Applied Physics*, vol. 35, no. 5, pp. 1425–1428, 1977.
- [68] El-Azab, A and Ghoniem, NM, "Molecular dynamics study of the displacement threshold surfaces and the stability of Frenkel pairs in β -SiC," *Journal of Nuclear Materials*, vol. 191, pp. 1110–1113, 1992.
- [69] Erginsoy, C. and Vineyard, G. H. and Englert, A., "Dynamics of Radiation," *Phys. Rev.*, vol. 133, no. 2A, pp. A595–A606, 1964.
- [70] Erginsoy, C. and Vineyard, G. H. and Shimizu, A., "Dynamics of Radiation," *Phys. Rev.*, vol. 139, no. 1A, pp. A118–A125, 1965.
- [71] Faust, W. E. and O’Neal, T. N. and Chaplin, R. L., "Measurements of the Electron," *Phys. Rev.*, vol. 183, no. 3, pp. 609–610, 1969.
- [72] Fikar, J. and Schäublin, R., "Molecular dynamics simulation of radiation damage in bcc tungsten," *Journal of Nuclear Materials*, vol. 386-388, pp. 97–101, 2009.

- [73] Fu, Jiawei and Ding, Wenyi and Zheng, Mingjie and Mao, Xiaodong, "Molecular dynamics study on threshold displacement energies in Fe," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 419, pp. 1–7, 2018.
- [74] Gao, F. and Bacon, D. J., "Point-defect and threshold displacement energies in Ni," *Philosophical Magazine A*, vol. 67, no. 2, pp. 289–306, 1993.
- [75] Gao, F. and Bacon, D. J. and Ackland, G. J., "Point-defect and threshold displacement energies in Ni," *Philosophical Magazine A*, vol. 67, no. 2, pp. 275–288, 1993.
- [76] Gao, F. and Bacon, D. J., "Molecular dynamics study of displacement cascades in Ni," *Philosophical Magazine A*, vol. 71, no. 1, pp. 43–64, 1995.
- [77] Gao, F. and Bacon, D. J. and Newall, Bacon S., "Point-defect properties and threshold displacement energies in Cu," *Philosophical Magazine Letters*, vol. 77, no. 5, pp. 229–239, 1998.
- [78] Gao, Fei and Xiao, Haiyan and Zu, Xiaotao and Posselt, Matthias and Weber, William J., "Defect-Enhanced," *Phys. Rev. Lett.*, vol. 103, no. 2, pp. 027405, 2009.
- [79] Gao, F. and Xiao, H.Y. and Weber, W.J., "Ab initio molecular dynamics simulations of low energy recoil events in ceramics," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 269, no. 14, pp. 1693–1697, 2011.
- [80] Gely, Marie-Hélène, "IRRADIATIONS A BASSE TEMPERATURE DE L'IRIDIUM ET DU COMPOSE NB:(3) GE," Ph.D. thesis, 1982.
- [81] Gibson, J. B. and Goland, A. N. and Milgram, M. and Vineyard, G. H., "Dynamics of Radiation," *Phys. Rev.*, vol. 120, no. 4, pp. 1229–1253, 1960.
- [82] Gonzalez, E. and Abreu, Y. and Cruz, C.M. and Piñera, I. and Leyva, A., "Molecular-dynamics simulation of threshold displacement energies in BaTiO₃," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 358, pp. 142–145, 2015.
- [83] Gosset, D. and Morillo, J. and Allison, C. and De Novion, C. H., "Electron irradiation damage in stoichiometric and substoichiometric tantalum carbides TaC," *Radiation Effects and Defects in Solids*, vol. 118, no. 3, pp. 207–224, 1991.
- [84] Gray, R L and Rushton, M J D and Murphy, S T, "Molecular dynamics simulations of radiation damage in YBa," *Supercond. Sci. Technol.*, vol. 35, no. 3, pp. 035010, 2022.

- [85] Grimaldi, M. G. and Calcagno, L. and Musumeci, P. and Frangis, N. and Van Landuyt, J., "Amorphization and defect recombination in ion implanted silicon carbide," *Journal of Applied Physics*, vol. 81, no. 11, pp. 7181–7185, 1997.
- [86] Grimshaw, J A and Banbury, P C, "The displacement energy in GaAs," *Proc. Phys. Soc.*, vol. 84, no. 1, pp. 151–162, 1964.
- [87] Guglielmetti, Aurore and Chartier, Alain and Brutzel, Laurent Van and Crocombette, Jean-Paul and Yasuda, Kazuhiro and Meis, Constantin and Matsumura, Syo, "Atomistic simulation of point defects behavior in ceria," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 266, no. 24, pp. 5120–5125, 2008.
- [88] Guinan, Michael W. and Snead, C. Lewis and Goland, Allen N., "Defect production in thorium by low-temperature electron irradiation," *Radiation Effects*, vol. 20, no. 1-2, pp. 33–36, 1973.
- [89] Hart, R. R. and Dunlap, H. L. and Marsh, O. J., "Disorder produced in SiC," *Radiation Effects*, vol. 9, no. 3-4, pp. 261–266, 1971.
- [90] Hemment, P. L. F. and Stevens, P. R. C., "Study of the Anisotropy," *Journal of Applied Physics*, vol. 40, no. 12, pp. 4893–4901, 1969.
- [91] Hensel, Hartmut and Urbassek, Herbert M., "Preferential effects in low-energy Si bombardment of SiC," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 142, no. 3, pp. 287–294, 1998.
- [92] Herrmann, F and Pinard, P and Farge, Y, "About the displacement of the lithium ion in lithium fluoride by accelerated electrons," *J. Phys. C: Solid State Phys.*, vol. 7, no. 11, pp. L199–L201, 1974.
- [93] Hodgson, ER and Agullo-Lopez, F, "Displacement damage in LiNbO₃," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 32, no. 1-4, pp. 42–44, 1988.
- [94] Holmström, E. and Kuronen, A. and Nordlund, K., "Threshold defect production in silicon determined by density functional theory molecular dynamics simulations," *Phys. Rev. B*, vol. 78, no. 4, pp. 045202, 2008.
- [95] Holmström, Eero and Krasheninnikov, Arkady and Nordlund, Kai, "Quantum and Classical Molecular Dynamics Studies of the Threshold Displacement Energy in Si Bulk and Nanowires," *MRS Online Proceedings Library (OPL)*, vol. 1181, pp. 1181–DD05, 2009.
- [96] Holmström, E and Nordlund, K and Kuronen, A, "Threshold defect production in germanium determined by density functional theory molecular dynamics simulations," *Phys. Scr.*, vol. 81, no. 3, pp. 035601, 2010.

- [97] Hønstvet, I. A. and Smallman, R. E. and Marquis, P. M., "A determination of the atomic displacement energy in cubic silicon carbide," *Philosophical Magazine A*, vol. 41, no. 2, pp. 201–207, 1980.
- [98] Hossain, MK and Brown, LM, "Electron irradiation damage in magnesium," *Acta Metallurgica*, vol. 25, no. 3, pp. 257–264, 1977.
- [99] Howe, L. M., "Electron displacement damage in cobalt in a high voltage electron microscope," *Philosophical Magazine*, vol. 22, no. 179, pp. 0965–0981, 1970.
- [100] Hudson, B. and Sheldon, B. E., "High voltage electron transmission microscopy of pyrolytic silicon carbide coatings from nuclear fuel particles," *Journal of Microscopy*, vol. 97, no. 1-2, pp. 113–119, 1973.
- [101] Inui, H. and Mori, H. and Fujita, H., "Electron-irradiation-induced crystalline to amorphous transition in α -SiC," *Philosophical Magazine B*, vol. 61, no. 1, pp. 107–124, 1990.
- [102] Ionascut-Nedelcescu, A. and Carlone, C. and Houdayer, A. and Von Bardeleben, H.J. and Cantin, J.-L. and Raymond, S., "Radiation hardness of gallium nitride," *IEEE Trans. Nucl. Sci.*, vol. 49, no. 6, pp. 2733–2738, 2002.
- [103] Iseler, G. W. and Dawson, H. I. and Mehner, A. S. and Kauffman, J. W., "Production Rates," *Phys. Rev.*, vol. 146, no. 2, pp. 468–471, 1966.
- [104] Itoh, Noriaki and Tanimura, Katsumi, "Radiation effects in ionic solids," *Radiation Effects*, vol. 98, no. 1-4, pp. 269–287, 1986.
- [105] Iwata, Tadao and Nihira, Takeshi, "Atomic displacements by electron irradiation in pyrolytic graphite," *Journal of the Physical Society of Japan*, vol. 31, no. 6, pp. 1761–1783, 1971.
- [106] Jackson, Matthew L. and Fossati, Paul C. M. and Grimes, Robin W., "Simulations of threshold displacement in beryllium," *Journal of Applied Physics*, vol. 120, no. 4, pp. 045903, 2016.
- [107] Ji, Yaqi and Kowalski, Piotr M. and Neumeier, Stefan and Deissmann, Guido and Kulriya, Pawan K. and Gale, Julian D., "Atomistic modeling and experimental studies of radiation damage in monazite-type LaPO_4 ," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 393, pp. 54–58, 2017.
- [108] Jiang, W and Weber, W.J and Thevuthasan, S and McCready, D.E, "Displacement energy measurements for ion-irradiated 6H," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 148, no. 1-4, pp. 557–561, 1999.

- [109] Jiang, M. and Xiao, H. Y. and Peng, S. M. and Yang, G. X. and Liu, Z. J. and Zu, X. T., "A comparative study of low energy radiation response of AlAs," *Sci Rep*, vol. 8, no. 1, pp. 2012, 2018.
- [110] Jimenez, C. M. and Lowe, L. F. and Burke, E. A. and Sherman, C. H., "Radiation Damage," *Phys. Rev.*, vol. 153, no. 3, pp. 735–740, 1967.
- [111] Jung, Peter and Schilling, Werner, "Anisotropy of the Threshold," *Phys. Rev. B*, vol. 5, no. 6, pp. 2046–2056, 1972.
- [112] Jung, P. and Chaplin, R. L. and Fenzl, H. J. and Reichelt, K. and Wombacher, P., "Anisotropy of the Threshold," *Phys. Rev. B*, vol. 8, no. 2, pp. 553–561, 1973.
- [113] Jung, P. and Lucki, G., "Damage production by fast electrons in dilute alloys of vanadium, niobium and molybdenum," *Radiation Effects*, vol. 26, no. 1-2, pp. 99–103, 1975.
- [114] Jung, Peter, "On a relation between threshold energy for atomic displacement in metals, bulk modulus, and interatomic potential," *Radiation Effects*, vol. 35, no. 3, pp. 155–160, 1978.
- [115] Juslin, N. and Nordlund, K. and Wallenius, J. and Malerba, L., "Simulation of threshold displacement energies in FeCr," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 255, no. 1, pp. 75–77, 2007.
- [116] Kamada, K. and Kazumata, Y. and Suda, S., "Displacement Threshold," *Physica Status Solidi (b)*, vol. 7, no. 1, pp. 231–239, 1964.
- [117] Karim, A.S.A and Whitehead, M.E and Loretto, M.H and Smallman, R.E, "Electron radiation damage in H," *Acta Metallurgica*, vol. 26, no. 6, pp. 975–981, 1978.
- [118] Kenik, E. A. and Mitchell, T. E., "Orientation dependence of the threshold displacement energy in copper and vanadium," *Philosophical Magazine*, vol. 32, no. 4, pp. 815–831, 1975.
- [119] Kerbirou, X. and Barthe, M.-F. and Esnouf, S. and Desgardin, P. and Blondiaux, G. and Petite, G., "Silicon displacement threshold energy determined by electron paramagnetic resonance and positron annihilation spectroscopy in cubic and hexagonal polytypes of silicon carbide," *Journal of Nuclear Materials*, vol. 362, no. 2-3, pp. 202–207, 2007.
- [120] Kirsanov, V. V., Musin, N. N., and Shamarina, H. J., "Displacement threshold energy in high-temperature superconductors. II. Thresholds for O, Ba and Y in YBa₂Cu₃O₇," *Physics Letters A*, 171(3-4):223–233, 1992, Elsevier.

- [121] Kittiratanawasin, L. and Smith, Roger and Uberuaga, B.P. and Sickafus, K.E. and Cleave, A.R. and Grimes, R.W., "Atomistic simulations of radiation induced defect formation in the Er_2O_3 ," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 266, no. 12-13, pp. 2691–2697, 2008.
- [122] Kittiratanawasin, L. and Smith, Roger and Uberuaga, B.P. and Sickafus, Kurt, "Displacement threshold and Frenkel," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 268, no. 19, pp. 2901–2906, 2010.
- [123] Koike, J. and Parkin, D. M. and Mitchell, T. E., "Displacement threshold energy for type IIa," *Applied Physics Letters*, vol. 60, no. 12, pp. 1450–1452, 1992.
- [124] Kotakoski, J. and Jin, C. H. and Lehtinen, O. and Suenaga, K. and Krasheninnikov, A. V., "Electron knock-on damage in hexagonal boron nitride monolayers," *Phys. Rev. B*, vol. 82, no. 11, pp. 113404, 2010.
- [125] Krasheninnikov, A. V. and Banhart, F. and Li, J. X. and Foster, A. S. and Nieminen, R. M., "Stability of carbon nanotubes under electron irradiation: Role," *Phys. Rev. B*, vol. 72, no. 12, pp. 125428, 2005.
- [126] Kulp, B. A. and Kelley, R. H., "Displacement of the Sulfur," *Journal of Applied Physics*, vol. 31, no. 6, pp. 1057–1061, 1960.
- [127] Kulp, B. A. and Detweiler, R. M., "Threshold for Electron," *Phys. Rev.*, vol. 129, no. 6, pp. 2422–2424, 1963.
- [128] Kulp, B. A., "Effects of Electron," *Journal of Applied Physics*, vol. 37, no. 13, pp. 4936–4938, 1966.
- [129] Lee, Hak-Jun and Ryu, Ho-Jin, "Calculation of Threshold Displacement Energy of Xe-inserted UO_2 Using Atomistic Simulation," *Korean Atomic Energy Society 2019 Fall Meeting*, 2019, Korean Atomic Energy Society.
- [130] Lefèvre, Jérémie and Costantini, Jean-Marc and Esnouf, Stéphane and Petite, Guillaume, "Silicon threshold displacement energy determined by photoluminescence in electron-irradiated cubic silicon carbide," *Journal of Applied Physics*, vol. 105, no. 2, pp. 023520, 2009.
- [131] Lesueur, D. and Morillo, J. and Mutkaj, H. and Audouard, A. and Jousset, J. C., "Displacement threshold energies in binary compounds: Amorphous," *Radiation Effects*, vol. 77, no. 1-2, pp. 125–144, 1983.
- [132] Lin, De-Ye and Song, Haifeng and Hui, Xi Dong, "Molecular dynamics simulation of threshold displacement energy and primary damage state in Niobium," *arXiv preprint arXiv:1702.03598*, 2017.

- [133] Liu, B and Xiao, H Y and Zhang, Y and Aidhy, D S and Weber, W J, "Ab," *J. Phys.: Condens. Matter*, vol. 25, no. 48, pp. 485003, 2013.
- [134] Liu, Bin and Yuan, Fenglin and Jin, Ke and Zhang, Yanwen and Weber, William J, "Ab," *J. Phys.: Condens. Matter*, vol. 27, no. 43, pp. 435006, 2015.
- [135] Liu, Bin and Petersen, Benjamin and Zhang, Yanwen and Wang, Jingyang and Weber, William J., "Layered Structure," *J. Am. Ceram. Soc.*, vol. 99, no. 8, pp. 2693–2698, 2016.
- [136] Liu, Yong and Wang, Hao and Guo, Linxin and Yan, Zhanfeng and Zheng, Jian and Zhou, Wei and Xue, Jianming, "Deep learning inter-atomic potential for irradiation damage in 3C-SiC," *Computational Materials Science*, vol. 233, p. 112693, 2024.
- [137] Locker, D. R. and Meese, J. M., "Displacement Thresholds," *IEEE Trans. Nucl. Sci.*, vol. 19, no. 6, pp. 237–242, 1972.
- [138] Loferski, J. J. and Rappaport, P., "Radiation Damage," *Phys. Rev.*, vol. 111, no. 2, pp. 432–439, 1958.
- [139] Loferski, J. J. and Rappaport, P., "Displacement Thresholds," *Journal of Applied Physics*, vol. 30, no. 8, pp. 1296–1299, 1959.
- [140] Lomer, Jenifer N. and Pepper, M., "Anisotropy of defect production in electron irradiated iron," *The Philosophical Magazine: A Journal of Theoretical Experimental and Applied Physics*, vol. 16, no. 144, pp. 1119–1128, 1967.
- [141] Sherman, Charles H. and Lowe, L. F. and Burke, E. A., "Probability of Atomic," *Phys. Rev.*, vol. 145, no. 2, pp. 568–575, 1966.
- [142] Lucas, G. and Pizzagalli, L., "Ab," *Phys. Rev. B*, vol. 72, no. 16, pp. 161202, 2005.
- [143] Lucasson, P. G. and Walker, R. M., "Production and Recovery," *Phys. Rev.*, vol. 127, no. 2, pp. 485–500, 1962.
- [144] Lucasson, P. G. and Walker, R. M., "Variation of Radiation," *Phys. Rev.*, vol. 127, no. 4, pp. 1130–1136, 1962.
- [145] Makin, M. J., "Electron displacement damage in copper and aluminium in a high voltage electron microscope," *Philosophical Magazine*, vol. 18, no. 153, pp. 637–653, 1968.
- [146] Makin, M. J., "A simple theory of loop formation and enhanced diffusion in crystals examined by high voltage electron microscopy," *Philosophical Magazine*, vol. 20, no. 168, pp. 1133–1146, 1969.

- [147] Makin, MJ and Buckley, SN and Walters, GP, "The determination of the displacement energy in type 316 austenitic steel," *Journal of Nuclear Materials*, vol. 68, no. 2, pp. 161–167, 1977.
- [148] Makletsov, A. A., Petrov, A. E., and Gann, V. V., "Evaluation of the displacement energy of Gd atoms in GdBa₂Cu₃O_{7- δ} from experimental data," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, 94(3):203–206, 1994, Elsevier.
- [149] Malerba, L and Perlado, JM and Sanchez-Rubio, A and Pastor, I and Colombo, L and de la Rubia, T Diaz, "Molecular dynamics simulation of defect production in irradiated β -SiC," *Journal of Nuclear Materials*, vol. 283, pp. 794–798, 2000.
- [150] Malerba, L. and Perlado, J. M., "Basic mechanisms of atomic displacement production in cubic silicon carbide: A," *Phys. Rev. B*, vol. 65, no. 4, pp. 045202, 2002.
- [151] Marton, D. and Boyd, K. J. and Lytle, T. and Rabalais, J. W., "Near-threshold ion-induced defect production in graphite," *Phys. Rev. B*, vol. 48, no. 10, pp. 6757–6766, 1993.
- [152] Maury, F. and Lucasson, A. and Lucasson, P., "On the Frenkel," *Physics Letters A*, vol. 29, no. 4, pp. 174–175, 1969.
- [153] Maury, F. and Vajda, P. and Lucasson, A. and Lucasson, P., "Subthreshold events and atomic displacements in electron-irradiated cadmium," *Radiation Effects*, vol. 10, no. 4, pp. 239–245, 1971.
- [154] Maury, F. and Vajda, P. and Lucasson, A. and Lucasson, P., "Anisotropy of Radiation," *Phys. Rev. B*, vol. 8, no. 12, pp. 5496–5505, 1973.
- [155] Maury, F. and Vajda, P. and Biget, M. and Lucasson, A. and Lucasson, P., "Anisotropy of the displacement energy in single crystals of molybdenum," *Radiation Effects*, vol. 25, no. 3, pp. 175–185, 1975.
- [156] Maury, F. and Biget, M. and Vajda, P. and Lucasson, A. and Lucasson, P., "Anisotropy of defect creation in electron-irradiated iron crystals," *Phys. Rev. B*, vol. 14, no. 12, pp. 5303–5313, 1976.
- [157] Maury, F. and Biget, M. and Vajda, P. and Lucasson, A. and Lucasson, P., "Frenkel pair creation and stage I," *Radiation Effects*, vol. 38, no. 1-2, pp. 53–65, 1978.
- [158] Mazzarolo, Massimiliano and Colombo, Luciano and Lulli, Giorgio and Albertazzi, Eros, "Low-energy recoils in crystalline silicon: Quantum," *Phys. Rev. B*, vol. 63, no. 19, pp. 195207, 2001.

- [159] McIlwain, J. and Gardiner, R. and Sosin, A. and Myhra, S., "Low temperature electron-irradiation of β -tin," *Radiation Effects*, vol. 24, no. 1, pp. 19–27, 1975.
- [160] Meese, J.M., "Zn Displacement," *Applied Physics Letters*, vol. 19, no. 4, pp. 86–87, 1971.
- [161] Meese, J.M and Locker, D.R., "Oxygen displacement energy in ZnO," *Solid State Communications*, vol. 11, no. 11, pp. 1547–1550, 1972.
- [162] Meis, C, "Computational study of plutonium–neodymium fluorobrotholite $\text{Ca}_9\text{Nd}_{0.5}\text{Pu}_{0.5}(\text{SiO}_4)(\text{PO}_4)_5\text{F}_2$ thermodynamic properties and threshold displacement energies," *Journal of Nuclear Materials*, vol. 289, no. 1-2, pp. 167–176, 2001.
- [163] Meis, C. and Chartier, A., "Calculation of the threshold displacement energies in UO_2 ," *Journal of Nuclear Materials*, vol. 341, no. 1, pp. 25–30, 2005.
- [164] Meissner, D. and Schilling, W., "Elektronenbestrahlungsexperimente an Tantal," *Zeitschrift für Naturforschung A*, vol. 26, no. 3, pp. 502–511, 1971.
- [165] Merrill, Andrew and Cress, Cory D. and Rossi, Jamie E. and Cox, Nathanael D. and Landi, Brian J., "Threshold displacement energies in graphene and single-walled carbon nanotubes," *Phys. Rev. B*, vol. 92, no. 7, pp. 075404, 2015.
- [166] Miller, M. G. and Chaplin, R. L., "Defect production in vanadium by low energy electron irradiations," *Radiation Effects*, vol. 22, no. 2, pp. 107–108, 1974.
- [167] Miller, L. A. and Brice, D. K. and Prinja, A. K. and Picraux, S. T., "Displacement-threshold energies in Si," *Phys. Rev. B*, vol. 49, no. 24, pp. 16953–16964, 1994.
- [168] Mohan, Sruthi and Kaur, Gurpreet and David, C. and Panigrahi, B. K. and Amarendra, G., "Ab," *Journal of Applied Physics*, vol. 127, no. 23, pp. 235901, 2020.
- [169] Montet, G.L. and Myers, G.E., "Threshold energy for the displacement of surface atoms in graphite," *Carbon*, vol. 9, no. 2, pp. 179–183, 1971.
- [170] Moreira, Pedro A.F.P. and Devanathan, Ram and Yu, Jianguo and Weber, William J., "Molecular-dynamics simulation of threshold displacement energies in zircon," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 267, no. 20, pp. 3431–3436, 2009.
- [171] Morris, J. and Cowen, B.J. and Teyseyre, S. and Hecht, A.A., "Molecular dynamics investigation of threshold displacement energies in CaF_2 ," *Computational Materials Science*, vol. 172, pp. 109293, 2020.

- [172] Mota, F and Caturla, M.-J and Perlado, J.M and Dominguez, E and Kubota, A, "Atomistic simulations of threshold displacement energies in SiO₂," *Journal of Nuclear Materials*, vol. 329-333, pp. 1190–1193, 2004.
- [173] Myhra, S. and Gardiner, R. B., "Low-temperature electron-irradiation effects in Zn," *Radiation Effects*, vol. 18, no. 1-2, pp. 39–45, 1973.
- [174] Neely, H. H. and Bauer, Walter, "Electron-Irradiation," *Phys. Rev.*, vol. 149, no. 2, pp. 535–539, 1966.
- [175] Neely, H. H. and Keefer, D. W. and Sosin, A., "Electron Irradiation," *Physica Status Solidi (b)*, vol. 28, no. 2, pp. 675–682, 1968.
- [176] Neely, H. H., "Damage rate and recovery measurements on zirconium after electron irradiation at low temperatures," *Radiation Effects*, vol. 3, no. 2, pp. 189–201, 1970.
- [177] Nord, J. and Nordlund, K. and Keinonen, J. and Albe, K., "Molecular dynamics study of defect formation in GaN," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 202, pp. 93–99, 2003.
- [178] Nordlund, K. and Wallenius, J. and Malerba, L., "Molecular dynamics simulations of threshold displacement energies in Fe," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 246, no. 2, pp. 322–332, 2006.
- [179] Ogilvie, G. J., "Threshold of damage by xenon ions in gold and silver," *Australian Journal of Physics*, vol. 22, no. 2, pp. 169–176, 1969, CSIRO Publishing.
- [180] O’Neal, T. N. and Chaplin, R. L., "Electron-Irradiation," *Phys. Rev. B*, vol. 5, no. 10, pp. 3810–3816, 1972.
- [181] Olsson, P. and Becquart, C. S. and Domain, C., "Ab," *Materials Research Letters*, vol. 4, no. 4, pp. 219–225, 2016.
- [182] Park, Byeongwon and Weber, William J and Corrales, L. René, "Molecular dynamics study of the threshold displacement energy in MgO," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 166-167, pp. 357–363, 2000.
- [183] Park, Byeongwon and Weber, William J. and Corrales, L. René, "Molecular-dynamics simulation study of threshold displacements and defect formation in zircon," *Phys. Rev. B*, vol. 64, no. 17, pp. 174108, 2001.
- [184] Pasianot, R. and Alurralde, M. and Almazouzi, A. and Victoria, M., "Primary damage formation in molybdenum: A," *Philosophical Magazine A*, vol. 82, no. 9, pp. 1671–1689, 2002.

- [185] Pells, G. P., and Phillips, D. C., "Radiation damage of α -Al₂O₃ in the HVEM: I. Temperature dependence of the displacement threshold," *Journal of Nuclear Materials*, 80(2):207–214, 1979, Elsevier.
- [186] Pells, G. P., "The temperature dependence of the threshold displacement energy in MgO," *Radiation Effects*, vol. 64, no. 1-4, pp. 71–75, 1982.
- [187] Pells, G. P. and Stathopoulos, A. Y., "Radiation damage in the cation sublattice of alpha-Al," *Radiation Effects*, vol. 74, no. 1-4, pp. 181–191, 1983.
- [188] Pells, G.P., "Radiation effects and damage mechanisms in ceramic insulators and window materials," *Journal of Nuclear Materials*, vol. 155-157, pp. 67–76, 1988.
- [189] Pells, George Philip, "Radiation Damage," *Journal of the American Ceramic Society*, vol. 77, no. 2, pp. 368–377, 1994.
- [190] Perlado, J.M., "Behavior and computer simulation of SiC," *Journal of Nuclear Materials*, vol. 251, pp. 98–106, 1997.
- [191] Perlado, J. M., Malerba, L., Sanchez-Rubio, A., and de la Rubia, T. D., "Analysis of displacement cascades and threshold displacement energies in β -SiC," *Journal of Nuclear Materials*, 276(1-3):235–242, 2000, Elsevier.
- [192] Petersen, B.A. and Liu, B. and Weber, W.J. and Zhang, Y., "Ab initio molecular dynamics simulations of low energy recoil events in MgO," *Journal of Nuclear Materials*, vol. 486, pp. 122–128, 2017.
- [193] Phillipp, F. and Saile, B. and Schmid, H. and Urban, K., "Energy and orientation dependence of atom displacement in BCC," *Physics Letters A*, vol. 73, no. 2, pp. 123–126, 1979.
- [194] Phuong, H. S. M., Starostenkov, M. D., & Trung, N. T. H., "Threshold displacement energies in V-Cr-Ti ternary alloys," *Vietnam Conference on Nuclear Science and Technology VINANST-14 Agenda and Abstracts*, p. 246, 2021, Viet Nam.
- [195] Pons, D. and Mooney, P. M. and Bourgoin, J. C., "Energy dependence of deep level introduction in electron irradiated GaAs," *Journal of Applied Physics*, vol. 51, no. 4, pp. 2038–2042, 1980.
- [196] Pons, D. and Bourgoin, J., "Anisotropic-Defect," *Phys. Rev. Lett.*, vol. 47, no. 18, pp. 1293–1296, 1981.
- [197] Poulin, F. and Bourgoin, J.C., "Threshold energy for atomic displacement in electron irradiated germanium," *Rev. Phys. Appl. (Paris)*, vol. 15, no. 1, pp. 15–19, 1980.
- [198] Pruitt, A. B. and Chaplin, R. L., "Electron irradiation at 0.5 MeV," *Radiation Effects*, vol. 11, no. 2, pp. 119–121, 1971.

- [199] Rahman, M.M. and Yamamoto, T. and Matsumura, S. and Costantini, J.M. and Yasuda, K., "Ab Initio," *Journal of Nuclear Materials*, vol. 554, pp. 153076, 2021.
- [200] Richardson, D. D., "Computer simulation of threshold radiation damage in rutile, Tio," *Radiation Effects*, vol. 79, no. 1-4, pp. 75–85, 1983.
- [201] Rizk, R. and Vajda, P. and Lucasson, A. and Lucasson, P., "Displacement mechanisms in electron-irradiated molybdenum," *Phys. Stat. Sol. (a)*, vol. 18, no. 1, pp. 241–246, 1973.
- [202] Roberts, C. Gordon and Rickey, W. P. and Shearin, Paul E., "Comparison of Electron," *Journal of Applied Physics*, vol. 37, no. 12, pp. 4517–4518, 1966.
- [203] Robinson, M. and Marks, N. A. and Whittle, K. R. and Lumpkin, G. R., "Systematic calculation of threshold displacement energies: Case," *Phys. Rev. B*, vol. 85, no. 10, pp. 104105, 2012.
- [204] Rullier-Albenque, Florence and Quere, Yves, "AN," *PHYSICS LETTERS*, vol. 81, no. 4, 1981.
- [205] Saile, B., "The Temperature," *phys. stat. sol. (a)*, vol. 89, no. 2, pp. K143–K145, 1985.
- [206] Sahoo, Deepak Ranjan and Chaudhuri, Paritosh and Swaminathan, Narasimhan, "A molecular dynamics study of displacement cascades and radiation induced amorphization in Li₂TiO₃," *Computational Materials Science*, vol. 200, pp. 110783, 2021.
- [207] Bany Salman, Mohammad and Park, Minkyu and Baniselman, Mosab Jaser, "Atomistic Study," *IJMS*, vol. 24, no. 4, pp. 3289, 2023.
- [208] Sayed, M., Jefferson, J. H., Walker, A. B., & Cullis, A. G., "Computer simulation of atomic displacements in Si, GaAs, and AlAs," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, **102**(1-4), 232–235, 1995, Elsevier.
- [209] Schulz, H. J. and Kulp, B. A., "Electron Radiation," *Phys. Rev.*, vol. 159, no. 3, pp. 603–609, 1967.
- [210] Sharp, J. V. and Rumsby, D., "Electron irradiation damage in magnesium oxide," *Radiation Effects*, vol. 17, no. 1-2, pp. 65–68, 1973.
- [211] Shirley, C. G. and Chaplin, R. L., "Evaluation of the Threshold," *Phys. Rev. B*, vol. 5, no. 6, pp. 2027–2029, 1972.
- [212] Simeone, David and Costantini, Jean Marc and Luneville, Laurence and Desgranges, Lionel and Trocellier, Patrick and Garcia, Philippe, "Characterization of radiation damage in ceramics: Old," *J. Mater. Res.*, vol. 30, no. 9, pp. 1495–1515, 2015.

- [213] Simpson, H. M. and Chaplin, R. L., "Damage and Recovery," *Phys. Rev.*, vol. 185, no. 3, pp. 958–961, 1969.
- [214] Smith, Katherine L. and Cooper, Ronald and Colella, Michael and Vance, Eric R., "Measured Displacement," *MRS Proc.*, vol. 663, pp. 373, 2000.
- [215] Smith, Katherine L. and Colella, Michael and Cooper, Ronald and Vance, Eric R., "Measured displacement energies of oxygen ions in titanates and zirconates," *Journal of Nuclear Materials*, vol. 321, no. 1, pp. 19–28, 2003.
- [216] Smith, Katherine L. and Zaluzec, Nestor J., "The displacement energies of cations in perovskite (CaTiO_3)," *Journal of Nuclear Materials*, vol. 336, no. 2-3, pp. 261–266, 2005.
- [217] Sosin, A., "Energy Dependence," *Phys. Rev.*, vol. 126, no. 5, pp. 1698–1710, 1962.
- [218] Sosin, A. and Garr, K., "Directional Effects," *Physica Status Solidi (b)*, vol. 8, no. 2, pp. 481–485, 1965.
- [219] Soullard, J. and Alamo, Et A., "Etude du ralentissement des ions dans une cible diatomique: II," *Radiation Effects*, vol. 38, no. 3-4, pp. 133–139, 1978.
- [220] Soullard, J., "High voltage electron microscope observations of UO_2 ," *Journal of Nuclear Materials*, vol. 135, no. 2-3, pp. 190–196, 1985.
- [221] Steeds, J.W., "Orientation dependence of near-threshold damage production by electron irradiation of 4H," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 269, no. 14, pp. 1702–1706, 2011.
- [222] Steffen, H. J. and Marton, D. and Rabalais, J. W., "Displacement energy threshold for Ne," *Phys. Rev. Lett.*, vol. 68, no. 11, pp. 1726–1729, 1992.
- [223] Summers, G. P. and White, G. S. and Lee, K. H. and Crawford, J. H., "Radiation damage in Mg," *Phys. Rev. B*, vol. 21, no. 6, pp. 2578–2584, 1980.
- [224] Tan, Shijie and Zhang, Wei and Jiao, Feng and Zhou, Yongchuan and Yang, Lu and Shi, Wenwu and Wang, Zhiguo, "First-Principles," *Crystal Research and Technology*, vol. 56, no. 10, pp. 2100076, 2021.
- [225] Thomas, B.S. and Marks, N.A. and Corrales, L.R. and Devanathan, R., "Threshold displacement energies in rutile TiO_2 ," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 239, no. 3, pp. 191–201, 2005.

- [226] Thomas, B.S. and Marks, N.A. and Begg, B.D., "Defects and threshold displacement energies in SrTiO₃," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 254, no. 2, pp. 211–218, 2007.
- [227] Tikhonchev, M. Yu. and Svetukhin, V. V., "Threshold energies of atomic displacements in α -Fe," *Tech. Phys. Lett.*, vol. 43, no. 4, pp. 348–350, 2017.
- [228] Torrens, Ian McC. and Chadderton, Lewis T. and Morgan, D. Vernon, "Ionic Displacement," *Journal of Applied Physics*, vol. 37, no. 6, pp. 2395–2398, 1966.
- [229] Torrens, Ian McC. and Chadderton, Lewis T., "Dynamics of Radiation," *Phys. Rev.*, vol. 159, no. 3, pp. 671–682, 1967.
- [230] Tsuchihira, H. and Oda, T. and Tanaka, S., "Effects of threshold displacement energy on defect production by displacement cascades in α , β and γ -LiAlO₂," *Journal of Nuclear Materials*, vol. 442, no. 1-3, pp. S429–S432, 2013.
- [231] Tuttle, Blair R. and Karom, Nathaniel J. and O'Hara, Andrew and Schrimpf, Ronald D. and Pantelides, Sokrates T., "Atomic-displacement threshold energies and defect generation in irradiated β ," *Journal of Applied Physics*, vol. 133, no. 1, pp. 015703, 2023.
- [232] Uhlmann, S. and Frauenheim, Th. and Boyd, K. J. and Marton, D. and Rabalais, J. W., "Elementary processes during low-energy self-bombardment of Si," *Radiation Effects and Defects in Solids*, vol. 141, no. 1-4, pp. 185–198, 1997.
- [233] Urban, K. and Seeger, A., "Radiation-induced diffusion of point-defects during low-temperature electron irradiation," *Philosophical Magazine*, vol. 30, no. 6, pp. 1395–1418, 1974.
- [234] Urban, K. and Yoshida, N., "The threshold energy for atom displacement in irradiated copper studied by high-voltage electron microscopy," *Philosophical Magazine A*, vol. 44, no. 5, pp. 1193–1212, 1981.
- [235] Vajda, P. and Biget, M., "Low-temperature fission neutron damage in vanadium and molybdenum," *Phys. Stat. Sol. (a)*, vol. 23, no. 1, pp. 251–260, 1974.
- [236] Vajda, P. and Biget, M. and Lucasson, A. and Lucasson, P., "On the problem of displacement threshold determination in irradiated metals: subthreshold effects and recovery spectrum," *J. Phys. F: Met. Phys.*, vol. 7, no. 5, pp. L123–L126, 1977.
- [237] Vajda, P. and Maury, F. and Lucasson, P., "ON," *PHYSICS LETTERS*, vol. 68, no. 1, 1978.

- [238] Van Brutzel, L. and Delaye, J.-M. and Ghaleb, D. and Rarivomanantsoa, M., "Molecular dynamics studies of displacement cascades in the uranium dioxide matrix," *Philosophical Magazine*, vol. 83, no. 36, pp. 4083–4101, 2003.
- [239] Vehse, W. E. and Sibley, W. A. and Keller, F. J. and Chen, Y., "Radiation Damage," *Phys. Rev.*, vol. 167, no. 3, pp. 828–836, 1968.
- [240] Veiller, L., Crocombette, J.-P., & Ghaleb, D., "Molecular dynamics simulation of the α -recoil nucleus displacement cascade in zirconolite," *Journal of Nuclear Materials*, **306**, 1, 61–72, 2002, Elsevier.
- [241] Wang, Bao-Yi and Wang, Yue-Xia and Gu, Qiang and Wang, Tian-Min, "The threshold displacement and interstitial atom formation energy in TiAl," *Computational Materials Science*, vol. 8, no. 3, pp. 267–272, 1997.
- [242] Wang, X. J. and Xiao, H. Y. and Zu, X. T. and Zhang, Y. and Weber, W. J., "Ab initio molecular dynamics simulations of ion–solid interactions in Gd₂Zr₂O₇," *J. Mater. Chem. C*, vol. 1, no. 8, pp. 1665, 2013.
- [243] Wang, Bu and Yu, Yingtian and Pignatelli, Isabella and Sant, Gaurav and Bauchy, Mathieu, "Nature of radiation-induced defects in quartz," *The Journal of Chemical Physics*, vol. 143, no. 2, pp. 024505, 2015.
- [244] Wang, Dong and Gao, Ning and Setyawan, W. and Kurtz, R. J. and Wang, Zhi-Guang and Gao, Xing and He, Wen-Hao and Pang, Li-Long, "Effect of Strain," *Chinese Phys. Lett.*, vol. 33, no. 9, pp. 096102, 2016.
- [245] Wang, D. and Gao, N. and Wang, Z.G. and Gao, X. and He, W.H. and Cui, M.H. and Pang, L.L. and Zhu, Y.B., "Effect of strain field on displacement cascade in tungsten studied by molecular dynamics simulation," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 384, pp. 68–75, 2016.
- [246] Wang, Pan and Perini, Christopher J. and O'Hara, Andrew and Gong, Huiqi and Wang, Pengfei and Zhang, En Xia and Mccurdy, Michael W. and Fleetwood, Daniel M. and Schrimpf, Ronald D. and Pantelides, Sokrates T. and Vogel, Eric M., "Total Ionizing," *IEEE Trans. Nucl. Sci.*, vol. 66, no. 1, pp. 420–427, 2019.
- [247] Weber, W. J., Ewing, R. C., Catlow, C. R. A., De La Rubia, T. D., Hobbs, L. W., Kinoshita, C., Motta, A. T., Nastasi, M., Salje, E. K. H., Vance, E. R., et al., "Radiation effects in crystalline ceramics for the immobilization of high-level nuclear waste and plutonium," *Journal of Materials Research*, **13**, 6, 1434–1484, 1998, Cambridge University Press.
- [248] Williford, R.E and Devanathan, R and Weber, W.J., "Computer simulation of displacement energies for several ceramic materials," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 141, no. 1-4, pp. 94–98, 1998.

- [249] Windl, Wolfgang and Lenosky, Thomas J and Kress, Joel D and Voter, Arthur F, "First-principles investigation of radiation induced defects in Si," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 141, no. 1-4, pp. 61–65, 1998.
- [250] Wolfenden, A., "Electron radiation damage near the threshold energy in aluminum," *Radiation Effects*, vol. 14, no. 3-4, pp. 225–229, 1972.
- [251] Wollenberger, H. and Wurm, J., "Atomic Displacement," *Physica Status Solidi (b)*, vol. 9, no. 2, pp. 601–609, 1965.
- [252] Wong, J. and De La Rubia, T. Diaz and Guinan, M.W. and Tobin, M. and Perlado, J.M. and Perez, A.S. and Sanz, J., "The threshold energy for defect production in SiC," *Journal of Nuclear Materials*, vol. 212-215, pp. 143–147, 1994.
- [253] Wooding, S. J. and Bacon, D. J., "Computer simulation of low-energy displacement events in pure HCP," *Radiation Effects and Defects in Solids*, vol. null, no. 1, pp. 461–469, 1994.
- [254] Wu, W. and Fahy, S., "Molecular-dynamics study of single-atom radiation damage in diamond," *Phys. Rev. B*, vol. 49, no. 5, pp. 3030–3035, 1994.
- [255] Xi, Jianqi and Liu, Bin and Zhang, Yanwen and Weber, William J., "Ab," *Journal of Applied Physics*, vol. 123, no. 4, pp. 045904, 2018.
- [256] Xiao, H. Y. and Gao, Fei and Zu, X. T. and Weber, W. J., "Threshold displacement energy in GaN," *Journal of Applied Physics*, vol. 105, no. 12, pp. 123527, 2009.
- [257] Xiao, H Y and Gao, F and Weber, W J, "Threshold displacement energies and defect formation energies in Y," *J. Phys.: Condens. Matter*, vol. 22, no. 41, pp. 415801, 2010.
- [258] Xiao, H. Y. and Zhang, Y. and Weber, W. J., "Ab," *Phys. Rev. B*, vol. 86, no. 5, pp. 054109, 2012.
- [259] Yang, Wei and Chen, Piheng and Lai, Wensheng and Zhang, Zhengjun, "Molecular dynamics simulations of displacement cascade and threshold energy in ordered alloy Al₃U," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 449, pp. 22–28, 2019.
- [260] Yang, Qigui and Olsson, Pär, "Full energy range primary radiation damage model," *Phys. Rev. Materials*, vol. 5, no. 7, pp. 073602, 2021.
- [261] Yasunaga, K. and Yasuda, K. and Matsumura, S. and Sonoda, T., "Electron energy-dependent formation of dislocation loops in CeO₂," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 266, no. 12-13, pp. 2877–2881, 2008.

- [262] Yoshida, N. and Urban, K., "Direct evidence for a very low atom displacement threshold energy around the $\langle 110 \rangle$ directions in copper," *Physics Letters A*, vol. 63, no. 3, pp. 381–383, 1977.
- [263] Yoshida, N. and Urban, K., "An investigation of the temperature dependence of the threshold energy for atom displacement in electron-irradiated copper," *Physics Letters A*, vol. 75, no. 3, pp. 231–233, 1980.
- [264] Yoshiie, T. and Iwanaga, H. and Shibata, N. and Ichihara, M. and Takeuchi, S., "Orientation dependence of electron-irradiation damage in zinc oxide," *Philosophical Magazine A*, vol. 40, no. 2, pp. 297–301, 1979.
- [265] Youngblood, G. and Myhra, S. and DeFord, J. W., "Measurements of the Threshold," *Phys. Rev.*, vol. 188, no. 3, pp. 1101–1107, 1969.
- [266] Youngman, R. A. and Hobbs, L. W. and Mitchell, T. E., "RADIATION," *J. Phys. Colloques*, vol. 41, no. C6, pp. C6–227–C6–231, 1980.
- [267] Yuan, Y. G. and Jiang, M. and Zhao, F. A. and Chen, H. and Gao, H. and Xiao, H. Y. and Xiang, X. and Zu, X. T., "Ab initio molecular dynamics simulation of low energy radiation responses of α -Al₂O₃," *Sci Rep*, vol. 7, no. 1, pp. 3621, 2017.
- [268] Zag, W. and Urban, K., "Temperature dependence of the threshold energy for atom displacement in irradiated molybdenum," *Phys. Stat. Sol. (a)*, vol. 76, no. 1, pp. 285–295, 1983.
- [269] Zepeda-Ruiz, L. A. and Han, S. and Srolovitz, D. J. and Car, R. and Wirth, B. D., "Molecular dynamics study of the threshold displacement energy in vanadium," *Phys. Rev. B*, vol. 67, no. 13, pp. 134114, 2003.
- [270] Zhang, X. Y. and Sprengel, W. and Blaurock, K. and Rempel, A. A. and Reichle, K. J. and Reimann, K. and Inui, H. and Schaefer, H.-E., "Vacancies selectively induced and specifically detected on the two sublattices of the intermetallic compound MoSi," *Phys. Rev. B*, vol. 66, no. 14, pp. 144105, 2002.
- [271] Zhang, Chao and Mao, Fei and Zhang, Feng-Shou and Zhang, Yanwen, "Impact energy dependence of defect formation in single-walled carbon nanotubes," *Chemical Physics Letters*, vol. 541, pp. 92–95, 2012.
- [272] Zheng, Ming-Jie and Szlufarska, Izabela and Morgan, Dane, "Ab initio prediction of threshold displacement energies in ZrC," *Journal of Nuclear Materials*, vol. 471, pp. 214–219, 2016.
- [273] Zhu, Huilong and Lam, Nghi Q., "Displacement cascades in the ordered compound CuTi," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 95, no. 1, pp. 25–33, 1995.

- [274] Zinkle, S. J., & Kinoshita, C., "Defect production in ceramics," *Journal of Nuclear Materials*, **251**, 200–217, 1997, Elsevier.
- [275] Zobelli, A. and Gloter, A. and Ewels, C. P. and Seifert, G. and Colliex, C., "Electron knock-on cross section of carbon and boron nitride nanotubes," *Phys. Rev. B*, vol. 75, no. 24, pp. 245402, 2007.
- [276] Zolnikov, K.P. and Korchuganov, A.V. and Kryzhevich, D.S. and Chernov, V.M. and Psakhie, S.G., "Structural changes in elastically stressed crystallites under irradiation," *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, vol. 352, pp. 43–46, 2015.