

References

- [1] Gnu emacs.
- [2] org-mode.
- [3] J. Aarik, A. Aidla, V. Sammelselg, and T. Uustare. Effect of growth conditions on formation of TiO_2 -II thin films in atomic layer deposition process. *Journal of Crystal Growth*, 181(3):259–264, 1997.
- [4] B. L. Adams, S. I. Wright, and K. Kunze. Orientation imaging - the emergence of a new microscopy. *Metallurgical Transactions a-Physical Metallurgy and Materials Science*, 24(4):819–831, 1993.
- [5] R Ahuja, S Rekhi, SK Saxena, and B Johansson. High-pressure structural phase transitions in RuO_2 and its geophysical implications. *Journal Of Physics And Chemistry Of Solids*, 62(11):2035–2037, 2001.
- [6] A. Aruga, E. Tokizaki, I. Nakai, and Y. Sugitani. Structure of iron diniobium hexaoxide, FeNb_2O_6 - an example of metal-disordered trirutile structure. *Acta Crystallographica Section C-Crystal Structure Communications*, 41(May):663–665, 1985.
- [7] A. Asthagiri, C. Niederberger, A. J. Francis, L. M. Porter, P. A. Salvador, and D. S. Sholl. Thin Pt films on the polar $\text{SrTiO}_3(111)$ surface: an experimental and theoretical study. *Surface Science*, 537(1-3):134–152, 2003. doi:[10.1016/S0039-6028\(03\)00609-5](https://doi.org/10.1016/S0039-6028(03)00609-5).
- [8] K R Balasubramaniam. Thin film growth and phase competition of layered ferroelectrics and related perovskite phases. *PhD Thesis, Carnegie Mellon University*, page 254, 2006.
- [9] K. R. Balasubramaniam, S. Havelia, P. A. Salvador, H. Zheng, and J. F. Mitchell. Epitaxial stabilization and structural properties of REMnO_3 (RE = Dy, Gd, Sm) compounds in a layered, hexagonal ABO_3 structure. *Applied Physics Letters*, 91(23):232901–3, 2007.
- [10] K. R. Balasubramanian, A. A. Bagal, O. Castillo, A. J. Francis, and P. A. Salvador. Epitaxial phase selection in the rare earth manganite system. *Ceramic Transactions*, 162:59–67, 2005.

- [11] Nina V. Burbure, Paul A. Salvador, and Gregory S. Rohrer. Orientation and phase relationships between titania films and polycrystalline BaTiO₃ substrates as determined by electron backscatter diffraction mapping. *Journal of the American Ceramic Society*, 93(9):2530–2533, 2010. doi:[10.1111/j.1551-2916.2010.03878.x](https://doi.org/10.1111/j.1551-2916.2010.03878.x).
- [12] F. Calle-Vallejo, J. I. Martinez, J. M. Garcia-Lastra, M. Mogens, and J. Rossmeisl. Trends in stability of perovskite oxides. *Angewandte Chemie-International Edition*, 49(42):7699–7701, 2010. doi:[10.1002/anie.201002301](https://doi.org/10.1002/anie.201002301).
- [13] CAMd. Atomic simulation environment.
- [14] G. Catalan, R. M. Bowman, and J. M. Gregg. Transport properties of NdNiO₃ thin films made by pulsed-laser deposition. *Journal of Applied Physics*, 87(1):606–608, 2000.
- [15] S. A. Chambers. Epitaxial growth and properties of doped transition metal and complex oxide films. *Advanced Materials*, 22(2):219–248, 2010. doi:[10.1002/adma.200901867](https://doi.org/10.1002/adma.200901867).
- [16] Z. W. Chen, C. M. L. Wu, C. H. Shek, J. K. L. Lai, Z. Jiao, and M. H. Wu. Pulsed laser ablation for tin dioxide: Nucleation, growth, and microstructures. *Critical Reviews in Solid State and Materials Sciences*, 33(3-4):197–209, 2008. doi:[10.1080/10408430802415006](https://doi.org/10.1080/10408430802415006).
- [17] YongMan Choi, M. C. Lin, and Meilin Liu. Computational study on the catalytic mechanism of oxygen reduction on La_{0.5}Sr_{0.5}MnO₃ in solid oxide fuel cells. *Angewandte Chemie International Edition*, 46(38):7214–7219, 2007. doi:[10.1002/anie.200700411](https://doi.org/10.1002/anie.200700411).
- [18] Steeve Chrétien and Horia Metiu. Density functional study of the CO oxidation on a doped rutile TiO₂(110): Effect of ionic Au in catalysis. *Catalysis Letters*, 107(3):143–147, 2006. doi:[10.1021/ja053695i](https://doi.org/10.1021/ja053695i).
- [19] D. B. Chrisey and G. K. Hubler. *Pulsed Laser Deposition of Thin Films*. Wiley, 1994.
- [20] F. Conchon, A. Boule, C. Girardot, S. Pignard, R. Guinebretiere, E. Dooryhee, J. L. Hodeau, F. Weiss, J. Kreisel, and J. F. Berar. Epitaxial stabilization of SmNiO₃ films on (001) SrTiO₃ sub-

- strates. *Journal of Physics D-Applied Physics*, 40(16):4872–4876, 2007. doi:[10.1088/0022-3727/40/16/017](https://doi.org/10.1088/0022-3727/40/16/017).
- [21] José C. Conesa. The relevance of dispersion interactions for the stability of oxide phases. *The Journal of Physical Chemistry C*, 114(51):22718–22726, 2010. doi:[10.1021/jp109105g](https://doi.org/10.1021/jp109105g).
- [22] J. D. Corbett. *Solid State Chemistry: Techniques*, chapter Synthesis of Solid-State Materials, pages 1–38. 1987.
- [23] S. Curiotto, H. Chien, H. Meltzman, P. Wynblatt, G. S. Rohrer, W. D. Kaplan, and D. Chatain. Orientation relationships of copper crystals on c-plane sapphire. *Acta Materialia*, 59(13):5320–5331, 2011. doi:[10.1016/j.actamat.2011.05.008](https://doi.org/10.1016/j.actamat.2011.05.008).
- [24] M. E. A. Y. de Dompablo, Y. L. Lee, and D. Morgan. First principles investigation of oxygen vacancies in columbite MNb_2O_6 (M = Mn, Fe, Co, Ni, Cu). *Chemistry of Materials*, 22(3):906–913, 2010. doi:[10.1021/Cm901723j](https://doi.org/10.1021/Cm901723j).
- [25] K. De Keyser, C. Detavernier, and R. L. Van Meirhaeghe. Characterization of the texture of silicide films using electron backscattered diffraction. *Applied Physics Letters*, 90(12), 2007. doi:[10.1063/1.2716362](https://doi.org/10.1063/1.2716362).
- [26] S. J. Dillon, L. Helmick, H. M. Miller, L. Wilson, R. Gemman, R. V. Petrova, K. Barmak, G. S. Rohrer, and P. A. Salvador. The orientation distributions of lines, surfaces, and interfaces around three-phase boundaries in solid oxide fuel cell cathodes. *Journal of the American Ceramic Society*, 94(11):4045–4051, 2011. doi:[10.1111/j.1551-2916.2011.04673.x](https://doi.org/10.1111/j.1551-2916.2011.04673.x).
- [27] F. J. Disalvo. Solid-state chemistry - a rediscovered chemical frontier. *Science*, 247(4943):649–655, 1990.
- [28] M. G. B. Drew, R. J. Hobson, and V. T. Padayatchy. Synthesis, structure and magnetic-properties of monoclinic CuNb_2O_6 and the electronic-spectra of both polymorphs of CuNb_2O_6 . *Journal of Materials Chemistry*, 5(11):1779–1783, 1995.

- [29] Natalia Dubrovinskaia, Leonid Dubrovinsky, Rajeev Ahuja, Vitaly Prokopenko, V Dmitriev, H P Weber, J Osorio-Guillen, and Börje Johansson. Experimental and theoretical identification of a new high-pressure TiO_2 polymorph. *Physical Review Letters*, 87(27):275501, 2001. doi:[10.1103/PhysRevLett.87.275501](https://doi.org/10.1103/PhysRevLett.87.275501).
- [30] R. A. Evarestov, E. A. Kotomin, Yu A. Mastrikov, D. Gryaznov, E. Heifets, and J. Maier. Comparative density-functional LCAO and plane-wave calculations of LaMnO_3 surfaces. *Physical Review B*, 72(21):214411, 2005. doi:[10.1103/PhysRevB.72.214411](https://doi.org/10.1103/PhysRevB.72.214411).
- [31] H. Y. Fan and S. A. Reid. Phase transformations in pulsed laser deposited nanocrystalline tin oxide thin films. *Chemistry of Materials*, 15(2):564–567, 2003. doi:[10.1021/Cm0208509](https://doi.org/10.1021/Cm0208509).
- [32] A. J. Francis, A. Bagal, and P. A. Salvador. Thin film synthesis of metastable perovskites: YMnO_3 . *Ceramic Transactions*, 135:565–575, 2000.
- [33] W. Gao, C. M. Wang, H Q Wang, V E Henrich, and E. I. Altman. Growth and surface structure of vanadium oxide on anatase (001). *Surface Science*, 559(2-3):201–213, 2004. doi:[10.1016/j.susc.2004.04.028](https://doi.org/10.1016/j.susc.2004.04.028).
- [34] J. L. Giocondi and G. S. Rohrer. Spatially selective photochemical reduction of silver on the surface of ferroelectric barium titanate. *Chemistry of Materials*, 13(2):241–242, 2001.
- [35] J. L. Giocondi and G. S. Rohrer. Spatial separation of photochemical oxidation and reduction reactions on the surface of ferroelectric BaTiO_3 . *Journal of Physical Chemistry B*, 105(35):8275–8277, 2001.
- [36] J. L. Giocondi and G. S. Rohrer. The influence of the dipolar field effect on the photochemical reactivity of $\text{Sr}_2\text{Nb}_2\text{O}_7$ and BaTiO_3 microcrystals. *Topics in Catalysis*, 49(1-2):18–23, 2008. doi:[10.1007/s11244-008-9067-2](https://doi.org/10.1007/s11244-008-9067-2).
- [37] J. L. Giocondi, P. A. Salvador, and G. S. Rohrer. The origin of photochemical anisotropy in SrTiO_3 . *Topics in Catalysis*, 44(4):529–533, 2007. doi:[10.1007/s11244-006-0101-y](https://doi.org/10.1007/s11244-006-0101-y).

- [38] J. Gopalakrishnan. Chimie douce approaches to the synthesis of metastable oxide materials. *Chemistry of Materials*, 7(7):1265–1275, 1995.
- [39] O. Y. Gorbenko, S. V. Samoilenkov, I. E. Graboy, and A. R. Kaul. Epitaxial stabilization of oxides in thin films. *Chemistry of Materials*, 14(10):4026–4043, 2002. doi:[10.1021/Cm021111v](https://doi.org/10.1021/Cm021111v).
- [40] A. Gupta. Thin film synthesis of metastable and artificially structured oxides. *Current Opinion in Solid State & Materials Science*, 2(1):23–31, 1997.
- [41] J Haines, JM Léger, and G Bocquillon. Synthesis and design of superhard materials. *Annual Review of Materials Research*, 31(1):1–23, 2001. doi:[10.1146/annurev.matsci.31.1.1](https://doi.org/10.1146/annurev.matsci.31.1.1).
- [42] Geoffroy Hautier, Christopher C. Fischer, Anubhav Jain, Tim Mueller, and Gerbrand Ceder. Finding nature’s missing ternary oxide compounds using machine learning and density functional theory. *Chemistry of Materials*, 22(12):3762–3767, 2010. doi:[10.1021/cm100795d](https://doi.org/10.1021/cm100795d).
- [43] Geoffroy Hautier, Shyue Ping Ong, Anubhav Jain, Charles J. Moore, and Gerbrand Ceder. Accuracy of density functional theory in predicting formation energies of ternary oxides from binary oxides and its implication on phase stability. *Physical Review B*, 85(15):155208, 2012.
- [44] S. Havelia. *Nucleation and Growth of Kinetically Frustrated Metastable Materials as Thin Films*. PhD thesis, Carnegie Mellon University, 2009.
- [45] S. Havelia, S. Wang, K. R. Balasubramaniam, and P. A. Salvador. Thin film synthesis and structural characterization of a new kinetically preferred polymorph in the RE₂Ti₂O₇ (RE = La-Y) family. *Crystal Growth & Design*, 9(10):4546–4554, 2009. doi:[10.1021/Cg900556d](https://doi.org/10.1021/Cg900556d).
- [46] S. Havelia, S. Wang, A. M. Schultz, K. R. Balasubramaniam, G. S. Rohrer, and P. A. Salvador. Combinatorial substrate epitaxy: a new approach to growth of complex metastable compounds. (*in preparation, 2012*)., 2012.
- [47] Lam Helmick, S. J. Dillon, Kirk Gerdes, Randall Gemmen, Gregory Rohrer, Sridhar Seetharaman, and Paul A. Salvador. Crystallographic

- characteristics of grain boundaries in dense yttria-stabilized zirconia. *International Journal of Applied Ceramic Technology*, 8(5):1218–1228, 2011. doi:[10.1111/j.1744-7402.2010.02567.x](https://doi.org/10.1111/j.1744-7402.2010.02567.x).
- [48] G. S. Herman and Y. Gao. Growth of epitaxial anatase (001) and (101) films. *Thin Solid Films*, 397(1-2):157–161, 2001.
- [49] C. C. Hsieh, K. H. Wu, J. Y. Juang, T. M. Uen, J. Y. Lin, and Y. S. Gou. Monophasic TiO_2 films deposited on $\text{SrTiO}_3(100)$ by pulsed laser ablation. *Journal of Applied Physics*, 92(5):2518–2523, 2002. doi:[10.1063/1.1499522](https://doi.org/10.1063/1.1499522).
- [50] A. T. M. N. Islam, O. Pieper, B. Lake, and K. Siemensmeyer. Unconventional growth mechanism in optical traveling solvent floating zone growth of large $\beta\text{-CuNb}_2\text{O}_6$ single crystals. *Crystal Growth & Design*, 11(1):154–157, 2011. doi:[10.1021/Cg1010709](https://doi.org/10.1021/Cg1010709).
- [51] L. A. Khalam, S. Thomas, and M. T. Sebastian. Tailoring the microwave dielectric properties of MgNb_2O_6 and $\text{Mg}_4\text{Nb}_2\text{O}_9$ ceramics. *International Journal of Applied Ceramic Technology*, 4(4):359–366, 2007.
- [52] D. H. Kim, H. N. Lee, M. Varela, and H. M. Christen. Antiferroelectricity in multiferroic BiCrO_3 epitaxial films. *Applied Physics Letters*, 89(16), 2006. doi:[10.1063/1.2362585](https://doi.org/10.1063/1.2362585).
- [53] L. Y. Kong, J. Ma, Z. Zhu, C. N. Luan, and F. Ji. Structural, electrical and optical properties of SnO_2 films deposited on Y-stabilized $\text{ZrO}_2(100)$ substrates by MOCVD. *Journal of Crystal Growth*, 312(20):2931–2935, 2010. doi:[10.1016/j.jcrysgro.2010.07.019](https://doi.org/10.1016/j.jcrysgro.2010.07.019).
- [54] L. Y. Kong, J. Ma, Z. Zhu, C. N. Luan, X. H. Yu, and Q. Q. Yu. Synthesis of orthorhombic structure epitaxial tin oxide film. *Materials Letters*, 64(12):1350–1353, 2010. doi:[10.1016/j.matlet.2010.03.058](https://doi.org/10.1016/j.matlet.2010.03.058).
- [55] L. Y. Kong, J. Ma, C. N. Luan, and Z. Zhu. Structural and optical properties of single crystalline columbite tin oxide film. *Applied Physics Letters*, 98(26), 2011. doi:[10.1063/1.3603936](https://doi.org/10.1063/1.3603936).
- [56] V. V. Krishnamurthy, K. Nagamine, K. Nishiyama, M. Ishikawa, M. Yamaguchi, I. Watanabe, T. Ishikawa, and T. P. Das. Magnetic

- ordering and spin dynamics in the quasi- one-dimensional spin-1/2 chains of CuNb_2O_6 observed by muon spin rotation and relaxation. *Physical Review B*, 68(1), 2003. doi:[Artn 014401 Doi 10.1103/Physrevb.68.014401](https://doi.org/10.1103/PhysRevB.68.014401).
- [57] Akihiro Kushima, Sidney Yip, and Bilge Yildiz. Competing strain effects in reactivity of LaCoO_3 with oxygen. *Physical Review B*, 82(11):115435, 2010. doi:[10.1103/PhysRevB.82.115435](https://doi.org/10.1103/PhysRevB.82.115435).
- [58] F. J. Lamelas and S. A. Reid. Thin-film synthesis of the orthorhombic phase of SnO_2 . *Physical Review B*, 60(13):9347–9352, 1999.
- [59] H. Langbein, M. Bremer, and I. Krabbes. CuX_2O_6 and $\text{Ba}_3\text{CuX}_2\text{O}_9$ ($X = \text{Nb}, \text{Ta}$): influence of the preparation conditions on phase formation and phase composition. *Solid State Ionics*, 101:579–584, 1997.
- [60] Yueh-Lin Lee and Dane Morgan. Prediction of surface oxygen vacancy concentrations of $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$. *ECS Transactions*, 25(2):2769–2774, 2009. doi:[10.1149/1.3205838](https://doi.org/10.1149/1.3205838).
- [61] Yueh-Lin Lee, Jesper Kleis, Jan Rossmeisl, and Dane Morgan. Ab initio energetics of $\text{LaBO}_3(001)$ ($B = \text{Mn}, \text{Fe}, \text{Co}, \text{and Ni}$) for solid oxide fuel cell cathodes. *Physical Review B*, 80(22):224101–224101, 2009. doi:[10.1103/PhysRevB.80.224101](https://doi.org/10.1103/PhysRevB.80.224101).
- [62] Yueh-Lin Lee, Dane Morgan, Jesper Kleis, and Jan Rossmeisl. Ab initio defect energetics in LaBO_3 perovskite solid oxide fuel cell materials. *ECS Transactions*, 25(2):2761–2767, 2009. doi:[10.1149/1.3205837](https://doi.org/10.1149/1.3205837).
- [63] L. Li, G. L. Feng, D. J. Wang, H. Yang, Z. M. Gao, B. X. Li, D. P. Xu, Z. H. Ding, and X. Y. Liu. Optical floating zone method growth and photoluminescence property of MgNb_2O_6 crystal. *Journal of Alloys and Compounds*, 509(27):L263–L266, 2011. doi:[10.1016/j.jallcom.2011.04.063](https://doi.org/10.1016/j.jallcom.2011.04.063).
- [64] J. Z. Liu and A. Zunger. Thermodynamic theory of epitaxial alloys: first- principles mixed-basis cluster expansion of $(\text{In}, \text{Ga})\text{N}$ alloy film. *Journal of Physics-Condensed Matter*, 21(29), 2009. doi:[10.1088/0953-8984/21/29/295402](https://doi.org/10.1088/0953-8984/21/29/295402).

- [65] D. H. Lowndes, D. B. Geohegan, A. A. Puretzky, D. P. Norton, and C. M. Rouleau. Synthesis of novel thin-film materials by pulsed laser deposition. *Science*, 273(5277):898–903, 1996.
- [66] FJ Manjón and D. Errandonea. Pressure-induced structural phase transitions in materials and earth sciences. *Physica Status Solidi B*, 246(1):9–31, 2009.
- [67] J. I. Martinez, H. A. Hansen, J. Rossmeisl, and J. K. Nørskov. Formation energies of rutile metal dioxides using density functional theory. *Physical Review B*, 79(4):5, 2009. doi:[10.1103/PhysRevB.79.045120](https://doi.org/10.1103/PhysRevB.79.045120).
- [68] Yuri A. Mastrikov, Rotraut Merkle, Eugene Heifets, Eugene A. Kotomin, and Joachim Maier. Pathways for oxygen incorporation in mixed conducting perovskites: A DFT-based mechanistic analysis for (LaSr)MnO₃. *The Journal of Physical Chemistry C*, 114(7):3017–3027, 2010. doi:[10.1021/jp909401g](https://doi.org/10.1021/jp909401g).
- [69] Bernard Mercey, Paul A. Salvador, Wilfrid Prellier, Trong-Duc Doan, Jerome Wolfman, Maryvonne Hervieu, and Bernard Raveau. Thin film deposition: a novel synthetic route to new materials. *Journal of Materials Chemistry*, 9(1):233–242, 1999.
- [70] Joseph Muscat, Varghese Swamy, and Nicholas M. Harrison. First-principles calculations of the phase stability of TiO₂. *Physical Review B*, 65(22):224112, 2002.
- [71] S. C. Navale, A. B. Gaikwad, and V. Ravi. Synthesis of MgNb₂O₆ by coprecipitation. *Materials Research Bulletin*, 41(7):1353–1356, 2006. doi:[10.1016/J.Materresbull.2005.12.009](https://doi.org/10.1016/J.Materresbull.2005.12.009).
- [72] Michael Nolan, Victor Soto Verdugo, and Horia Metiu. Vacancy formation and CO adsorption on gold-doped ceria surfaces. *Surface Science*, 602(16):2734–2742, 2008. doi:[10.1016/j.susc.2008.06.028](https://doi.org/10.1016/j.susc.2008.06.028).
- [73] E. Ohshima, Y. Saya, M. Nantoh, and M. Kawai. Synthesis and magnetic property of the perovskite Bi_{1-x}Sr_xMnO₃ thin film. *Solid State Communications*, 116(2):73–76, 2000.

- [74] T. Omata, M. Kita, S. Otsuka-Yao-Matsuo, and M. Katada. Characterization of novel cation-ordered compounds with fluorite and α - PbO_2 related structures prepared by oxidation of Sn-Nb-O pyrochlore. *Journal Of Physics And Chemistry Of Solids*, 66(1):53–62, 2005. doi:[10.1016/j.jpcs.2004.08.031](https://doi.org/10.1016/j.jpcs.2004.08.031).
- [75] Frank E. Osterloh. Inorganic materials as catalysts for photochemical splitting of water. *Chemistry of Materials*, 20(1):35–54, 2007. doi:[10.1021/cm7024203](https://doi.org/10.1021/cm7024203).
- [76] D. C. Paine and J. C. Bravman. *Laser Ablation For Materials Synthesis*, volume 191. Materials Research Society, 1990.
- [77] Raj Ganesh S. Pala and Horia Metiu. Modification of the oxidative power of ZnO(1010) surface by substituting some surface Zn atoms with other metals. *The Journal of Physical Chemistry C*, 111(24):8617–8622, 2007. doi:[10.1021/jp071671n](https://doi.org/10.1021/jp071671n).
- [78] Raj Ganesh S. Pala, Wei Tang, Michael M. Sushchikh, Jung-Nam Park, Arnold J. Forman, Guang Wu, Alan Kleiman-Shwarsctein, Jingping Zhang, Eric W. McFarland, and Horia Metiu. CO oxidation by Ti- and Al-doped ZnO: Oxygen activation by adsorption on the dopant. *Journal of Catalysis*, 266(1):50–58, 2009. doi:[10.1016/j.jcat.2009.05.011](https://doi.org/10.1016/j.jcat.2009.05.011).
- [79] S. Piskunov, E. Heifets, T. Jacob, E. A. Kotomin, D. E. Ellis, and E. Spohr. Electronic structure and thermodynamic stability of LaMnO_3 and $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ (001) surfaces: Ab initio calculations. *Physical Review B*, 78(12):121406, 2008. doi:[10.1103/Physrevb.78.121406](https://doi.org/10.1103/Physrevb.78.121406).
- [80] K. R. Poeppelmeier. Preface to the special issue: Frontiers in inorganic solid-state chemistry. *Chemistry of Materials*, 10(10):2577–2578, 1998.
- [81] A. Posadas, J. B. Yau, C. H. Ahn, J. Han, S. Gariglio, K. Johnston, K. M. Rabe, and J. B. Neaton. Epitaxial growth of multiferroic YMnO_3 on GaN. *Applied Physics Letters*, 87(17), 2005. doi:[10.1063/1.2120903](https://doi.org/10.1063/1.2120903).
- [82] C. N. R. Rao. *Chemical Approaches to the Synthesis of Inorganic Materials*. Wiley, New York, 1994.

- [83] J. Rossmeis and W. G. Bessler. Trends in catalytic activity for SOFC anode materials. *Solid State Ionics*, 178(31-32):1694–1700, 2008. doi:[10.1016/j.ssi.2007.10.016](https://doi.org/10.1016/j.ssi.2007.10.016).
- [84] R. Roy. Synthesizing new materials to specification. *Solid State Ionics*, 32-3:3–22, 1989. doi:[10.1016/0167-2738\(89\)90198-7](https://doi.org/10.1016/0167-2738(89)90198-7).
- [85] P. A. Salvador, T. D. Doan, B. Mercey, and B. Raveau. Stabilization of YMnO_3 in a perovskite structure as a thin film. *Chemistry of Materials*, 10(10):2592–2595, 1998.
- [86] P. A. Salvador, T. O. Mason, M. E. Hagerman, and K. R. Poeppelmeier. *Chemistry of Advanced Materials: An Overview*, chapter Layered Transition Metal Oxides and Chalcogenides, pages 449–498. 1998.
- [87] D. G. Schlom, L. Q. Chen, X. Q. Pan, A. Schmehl, and M. A. Zurbuchen. A thin film approach to engineering functionality into oxides. *Journal of the American Ceramic Society*, 91(8):2429–2454, 2008. doi:[10.1111/j.1551-2916.2008.02556.x](https://doi.org/10.1111/j.1551-2916.2008.02556.x).
- [88] E. Schulte and D. Davison. Active documents with org-mode. *Computing in Science & Engineering*, 13(3):66–73, 2011. doi:[10.1109/mcse.2011.41](https://doi.org/10.1109/mcse.2011.41).
- [89] Vladimir Shapovalov and Horia Metiu. Catalysis by doped oxides: CO oxidation by $\text{Au}_x\text{Ce}_{1-x}\text{O}_2$. *Journal of Catalysis*, 245(1):205–214, 2007. doi:[10.1016/j.jcat.2006.10.009](https://doi.org/10.1016/j.jcat.2006.10.009).
- [90] V. F. Silva, V. Bouquet, S. Deputier, S. Boursicot, S. Ollivier, I. T. Weber, V. L. Silva, I. M. G. Santos, M. Guilloux-Viry, and A. Perrin. Substrate-controlled allotropic phases and growth orientation of TiO_2 epitaxial thin films. *Journal of Applied Crystallography*, 43:1502–1512, 2010. doi:[10.1107/S0021889810041221](https://doi.org/10.1107/S0021889810041221).
- [91] R. K. Singh, D. B. Lowndes, D. B. Chrisey, E. Fogarassy, and J. Narayan. *Advances in Laser Ablation of Materials*, volume 526. Materials Research Society, 1999.
- [92] Jong Hyun Song, Tomofumi Susaki, and Harold Y. Hwang. Enhanced thermodynamic stability of epitaxial oxide thin films. *Advanced Materials*, 20(13):2528–2532, 2008. doi:[10.1002/adma.200701919](https://doi.org/10.1002/adma.200701919).

- [93] C. Stampfl and A. J. Freeman. Structure and stability of transition metal nitride interfaces from first-principles: AlN/VN, AlN/TiN, and VN/TiN. *Applied Surface Science*, 258(15):5638–5645, 2012. doi:[10.1016/j.apsusc.2012.02.046](https://doi.org/10.1016/j.apsusc.2012.02.046).
- [94] Dmitri B. Strukov, Gregory S. Snider, Duncan R. Stewart, and R. Stanley Williams. The missing memristor found. *Nature*, 453(7191):80–83, 2008.
- [95] A. A. Vertegel, E. W. Bohannon, M. G. Shumsky, and J. A. Switzer. Epitaxial electrodeposition of orthorhombic alpha-PbO₂ on (100)-oriented single crystal Au. *Journal of the Electrochemical Society*, 148(4):C253–C256, 2001.
- [96] A. Vittadini, M. Casarin, M. Sambri, and A. Selloni. First-principles studies of vanadia-titania catalysts: Beyond the monolayer. *Journal of Physical Chemistry B*, 109(46):21766–21771, 2005. doi:[10.1021/Jp0536910](https://doi.org/10.1021/Jp0536910).
- [97] L. Wang, T. Maxisch, and G. Ceder. Oxidation energies of transition metal oxides within the GGA+U framework. *Physical Review B*, 73(19):6, 2006. doi:[10.1103/PhysRevB.73.195107](https://doi.org/10.1103/PhysRevB.73.195107).
- [98] Rainer Waser and Masakazu Aono. Nanoionics-based resistive switching memories. *Nat Mater*, 6(11):833–840, 2007.
- [99] H. G. Yang, C. H. Sun, S. Z. Qiao, J. Zou, G. Liu, S. C. Smith, H. M. Cheng, and G. Q. Lu. Anatase TiO₂ single crystals with a large percentage of reactive facets. *Nature*, 453(7195):638–U4, 2008. doi:[10.1038/nature06964](https://doi.org/10.1038/nature06964).
- [100] Y. Zhang, A. M. Schultz, H. Chien L. Li, P. Salvador, and G. Rohrer. Combinatorial substrate epitaxy: A high throughput method for determining phase and orientation relationships and its application to BiFeO₃/TiO₂ heterostructures. *Acta Mater*, page in review (http://neon.materials.cmu.edu/rohrer/papers/pre_2012_05.pdf), 2012.