Bibliography

[1] J. F. Lyness, D. R. Owen, and O. C. Zienkiewicz. The finite element analysis of engineering systems governed by a non-linear quasi-harmonic equation. *Computers & Structures*, 5(1):65–79, 1975.

[2] B. A. Szabo. Some recent developments in finite element analysis. *Computers & Mathematics with Applications*, 5(2):99–115, 1979.

[3] K. Feser and J. Schmid. Temperature effect on the streamer breakdown in air. In *Sixth International Symposium on High Voltage Engineering (ISH-89),New Orleans,USA,Paper 46.04*, volume 3, 1989.

[4] A. G. Kladas, M. P. Papadopoulos, and J. A. Tegopoulos. Leakage flux and force calculation on power transformer windings under short-circuit:2-d and 3-d models based on the theory of images and the finite element method compared to measurements. *IEEE Trans. on Magnetics*, 30(5):3487–3490, september 1994.

[5] L. W. Pierce. Hottest spot temperatures in ventilated dry type transformers. *IEEE Transactions on Power Delivery*, 9(1):257–264, 1994.

[6] L. W. Pierce. Predicting hottest spot temperatures in ventilated dry type transformer windings. *IEEE Transactions on Power Delivery*, 9(2):1160–1172, 1994.

[7] J. Braun, M. Sambridge, et al. A numerical method for solving partial differential equations on highly irregular evolving grids. *Nature*, 376(6542):655–660, 1995.

[8] L. W. Pierce. Transformer design and application considerations for non sinusoidal load currents. *IEEE IAS*, pages 35–47, 1995.

[9] J. Crank and P. Nicolson. A practical method for numerical evaluation of solutions of partial differential equations of the heat-conduction type. *Advances in Computational Mathematics*, 6(1):207–226, 1996.

[10] R. Petkov. Optimum design of a high-power, high-frequency transformer. *IEEE Transactions on Power Electronics*, 11(1):33–42, January 1996.

[11] R. C. Degeneff and M. R. Gutierrez. Methods for generating models of non-linear systems and components and for evaluating parameters in relation to such non-linear models, November 1997. US Patent 5,692,158.

[12] M. Enokizono and N. Soda. Core loss analysis of transformer by improved fem. *Journal of magnetism and magnetic materials*, 196:910–912, 1999.

[13] N. L. Allen, N. S. Lam, and D. A. Greaves. Tests on the breakdown of air at elevated temperatures in non-uniform electric fields. *IEE Proceedings - Science, Measurement and Technology*, 147(6):291–295, November 2000.

[14] P. S. Bodger, M. C. Liew, and P. T. Johnstone. A comparison of conventional and reverse transformer design. 2000.

[15] E. F. Fuchs. Measurement of eddy-current loss coefficient pec-r, derating of single-phase transformers, and comparison with k-factor

approach. *IEEE Transactions on Power Delivery*, 15(1):149–154, January 2000.

[16] M. Kezunovic and Y. Guo. Modeling and simulation of the power transformer faults and related protective relay behavior. *IEEE Transactions on Power Delivery*, 15(1):44–50, January 2000.

[17] J. Mackerle. Parallel finite element and boundary element analysis: theory and applications – a bibliography (1997–1999). *Finite Elements in Analysis and Design*, 35(3):283 – 296, 2000.

[18] S. H. Khan, J. M. El-Shawish, L. Finkelstein, and K. T. V. Grattan. Finite element modeling of saturation and eddy current effects in commercial variable transformers. *IEEE Transactions on Magnetics*, 37(4):2783–2786, July 2001.

[19] H. E. Wang and K. L. Butler. Finite element analysis of internal winding faults in distribution transformers. *IEEE Transactions on Power Delivery*, 16(3):422–427, July 2001.

[20] M. Rausch, M. Kaltenbacher, H. Landes, R. Lerch, J. Anger, J. Gerth, and P. Boss. Combination of finite and boundary element methods in investigation and prediction of load-controlled noise of power transformers. *Journal of Sound and Vibration*, 250(2):323–338, 2002.

[21] M. Steurer and K. Fröhlich. The impact of inrush currents on the mechanical stress of high voltage power transformer coils. *IEEE Transactions on Power Delivery*, 17(1):155–160, January 2002.

[22] M. S. Taci and A. Domijan. The effects of linear and nonlinear operation modes in transformers. In *2004 11th International Conference on Harmonics and Quality of Power (IEEE Cat. No.04EX951)*, pages 244–249, September 2004.

[23] J. Hong, L. Heyun, and X. Zihong. Three dimensional finite element analysis of electric fields at winding ends of dry type transformer. In , *Proceedings of the 8th International conference on Electrical machines an Systems*, volume 3, pages 21536–2139. ICEMS 2005, september 2005.

[24] A. Lefevre, L. Miegeville, J. Fouladgar, and G. Olivier. 3- d computation of transformers overheating under nonlinear loads. *IEEE Transactions on Magnetics*, 41(5):1564–1567, May 2005.

[25] D. Susa. *Dynamic Thermal Modelling of Power Transformers*. PhD thesis, Helsinki University of Technology, Department of Electrical and Communications Engineering Power Systems and High Voltage Engineering, August 2005. ISBN 951-22-7741-7.

[26] A. S. Reddy and M. Vijaykumar. Hottest spot and life evaluation of power transformer design using finite element method. *Journal of Theoretical and Applied Information Technology*, pages 238–243, 2005-2008.

[27] A. Ngaopitakkul and A. Kunakorn. Internal fault classification in transformer windings using combination of discrete wavelet transforms and back-propagation neural networks. 4(3):365–371, 06 2006.

[28] M. K. Pradhan. Assessment of the status of insulation during thermal stress accelerated experiments on transformer prototypes. *IEEE Transactions on Dielectrics and Electrical Insulation*, 13(1):227–237, February 2006.

[29] S. C. Bell and P. S. Bodger. Power transformer design using magnetic circuit theory and finite element analysis – a comparison

of techniques. In *booktitle*, pages 607–612, Perth Western Australia, december 2007. AUPEC 2007.

[30] F. J. Harewood and P. E. McHugh. Comparison of the implicit and explicit finite element methods using crystal plasticity. *Computational Materials Science*, 39(2):481 – 494, 2007.

[31] G. B. Kumbhar and S. V. Kulkarni. Analysis of short-circuit performance of split-winding transformer using coupled field-circuit approach. *Trans. Power Del*, 22(2):936–943, February 2007.

[32] S. Nishimiya, T. Ishigohka, A. Ninomiya, and K. Arai. Quench characteristic of superconducting transformer by inrush current. *IEEE Transactions on Applied Superconductivity*, 17(2):1931–1934, June 2007.

[33] C. Hernandez, M. A. Arjona, and S. H. Dong. Object-oriented knowledge-based system for distribution transformer design. *IEEE Transactions on Magnetics*, 44(10):2332–2337, 2008.

[34] S. L. Ho, Y. Li, R. Y. Tang, K .W. E .Cheng, and S. Y. Yang. Calculation of eddy current field in the ascending flange for the bushings and tank wall of a large power transformer. *IIEEE Transactions on Magnetics*, 44(6):1522–1525, June 2008.

[35] M. A. Tsili, A. G. Kladas, and P. S. Georgilakis. Computer aided analysis and design of power transformers. *Science Direct, Computers in Industry*, 58:338–350, 2008.

[36] M. A. Venegas Vega, R. P. Escarela, and T. Niewierowicz. 3 d finite element estimation of stray losses in three-phase transformers. *Journal of Applied Computer Science*, 16(1):89–100, 2008.

[37] M. R. Barzegaran, M. Mirzaie, and S. Akmal. Frequency response analysis in power transformer for detection of winding short-circuit

using quasi-static finite element and circuit-based method. *World Applied Sciences Journal 7*, 7(8):1006–1015, 2009. ISSN 1818-4952.

[38] D. L. Harris. The design and performance of circular disc, helical and layer windings for power transformer applications. pages 1–12, November 2009.

[39] M. Lee, H. A. Abdullah, J. C. Jofriet, and D. Patel. Thermal modeling of disc type winding for ventilated dry type transformers. *Electrical Power System Research*, 80:121–129, 2009. Elsevier.

[40] Y. Li, L. Luo, C. Rehtanz, K. Nakamura, J. Xu, and F. Liu. Study on characteristic parameters of a new converter transformer for HVDC systems. *IEEE Transactions on Power Delivery*, 24(4):2125–2131, October 2009.

[41] P. O'Hara, C.A. Duarte, and T. Eason. Generalized finite element analysis of three-dimensional heat transfer problems exhibiting sharp thermal gradients. *Computer Methods in Applied Mechanics and Engineering*, 198(21–26):1857 – 1871, 2009.

[42] A. D. Theocharis, J. M. Argitis, and T. Zacharias. Three-phase transformer model including magnetic hysteresis and eddy currents effects. *IEEE Transactions on Power Delivery*, 24(3):1284–1294, july 2009.

[43] N. Chiesa and H. K. Hoidalen. Analytical algorithm for the calculation of magnetization and loss curves of delta-connected transformers. *IEEE Transactions on Power Delivery*, 25(3):1620–1628, July 2010.

[44] M. Eslamian, B. Vahidi, and S.H. Hosseinian. Combined analytical and *FEM* methods for parameters calculation of detailed model for dry-type transformer. *Simulation Modelling Practice and Theory*, 18(3):390–403, 2010.

[45] M. Lee, H. A. Abdullah, J. C. Jofriet, and D. Patel. Temperature distribution in foil winding for ventilated dry type power transformers. *Electrical Power System Research*, 80:1065–1073, 2010. Elsevier.

[46] D. Meeker. Finite element method magnetics. *FEMM*, 4:32, 2010.

[47] T. Steinmetz, B. Cranganu-Cretu, and J. Smajic. Investigations of no-load and load losses in amorphous core dry-type transformers. In *Electrical Machines (ICEM), 2010 XIX International Conference on*, pages 1–6. IEEE, 2010.

[48] D. Azizian, M. Vakilian, J. Faiz, and M. Bigdeli. Calculating leakage inductances of pancake windings in dry-type traction transformers. In *The 8th Electrical Engineering/ Electronics, Computer, Telecommunications and Information Technology (ECTI) Association of Thailand - Conference 2011*, pages 808–811, May 2011.

[49] R. Dofan. Study on thermal model for calculating transformer hot spot temperature. Master's thesis, Faculty of Electrical & Electronic Engineering, University Tun Hussein Onn Malaysia (UTHM), May 2011.

[50] V. E. González, P. Gómez, and F. P. Espino-Cortés. Design of the insulating supports in medium voltage dry-type transformers. In *2011 Electrical Insulation Conference (EIC).*, pages 45–48, June 2011.

[51] S. A. Koya and M. A. Khan. K-rated transformers and active power filter for harmonic conditioning in industrial and commercial applications. In *GCC Conference and Exhibition (GCC), 2011 IEEE*, pages 645–648. IEEE, 2011.

[52] K.S.Pandya. *Particle Swarm Optimization in Deregulated Electrical Power Systems*. PhD thesis, The M.S.University of Baroda, Electrical Engineering Department, 2011.

[53] M. Lee, H. A. Abdullah, J. C. Jofriet, D. Patel, and M. Fahrioglu. Air temperature effect on thermal models for ventilated dry-type transformers. *Electric Power Systems Research*, 81(3):783 – 789, 2011.

[54] P. Meesuk, T. Kulworawanichpong, and P. Pao-la-or. Magnetic field analysis for a distribution transformer with unbalanced load conditions by using 3-d finite element method. *World Academy of Science, Engineering and Technology, International Journal of Electrical, Computer, Energetic, Electronic and Communication Engineering*, 5(12):1650–1655, 2011.

[55] I. Metwally. Failures, monitoring and new trends of power transformers. *IEEE Potentials*, 30(3):36–43, 2011.

[56] I. Vajda, A. Hyde, A. Gyore, G. Nador, T. Trollier, B. Sailer, and R. Bohm. Slimformer—self-limiting transformer pre-prototype and pilot plant design, construction, and tests. *IEEE Transactions on Applied Superconductivity*, pages 1298–1302, June 2011.

[57] H. M. Ahn, Y. H. Oh, J. K. Kim, J. S. Song, and S. C. Hahn. Experimental verification and finite element analysis of short circuit electromagnetic force for dry type transformer. *IEEE Transactions on Magnetics*, 48(2):819–822, February 2012.

[58] D. I. Taylor, J. D. Law, B. K. Johnson, and N. Fischer. Single-phase transformer inrush current reduction using prefluxing. *IEEE Transactions on Power Delivery*, 27(1):245–252, January 2012.

[59] M. A. Tsili, E. I. Amoiralis, A. G. Kladas, and A. T. Sourlaris. Power transformer thermal analysis by using an advanced coupled 3d heat transfer and fluid flow fem model. *International Journal of Thermal Sciences*, 53:188–201, 2012.

[60] D. Constantin, P. M. Nicolae, and C. M. Nitu. 3d finite element analysis of a three phase power transformer. In *Eurocon 2013*, pages 1548–1552, July 2013.

[61] V. D. Dhote, P. G. Asutkar, and S. Dutt. Modeling and simulation of three-phase power transformer. *International Journal of Enginnering Research and Application*, 3(4):2498–2502, 2013.

[62] S. Jazebi, F. de Leon, and B. Vahidi. Duality-synthesized circuit for eddy current effects in transformer windings. *IEEE Transactions on Power Delivery*, 28(2):1063–1072, April 2013.

[63] G. Y. Jeong, S. P. Jang, H. Y. Lee, J. C. Lee, S. Choi, and S. H. Lee. Magnetic-thermal-fluidic analysis for cooling performance of magnetic nanofluids comparing with transformer oil and air by using fully coupled finite element method. *IEEE Transactions on Magnetics*, 49(5):1865–1868, May 2013.

[64] Y. Li, L. Li, Y. Jing, and B. Zhang. 3 D finite element analysis of the stray loss in power transformer structure parts. *Energy and Power Engineering*, 5(4B):1089– 1092, 2013.

[65] J. Smolka. Cfd based 3-D optimization of the mutual coil configuration for the effective cooling of an electrical. *Applied Thermal Engineering*, 50:124–133, 2013. Elsevier.

[66] M. T. Villén, J. Letosa, A. Nogués, and R. Murillo. Procedure to accelerate calculations of additional losses in transformer foil windings. *Electric Power Systems Research*, 95:85–89, 2013.

[67] IEEE Guide for loading dry-type distribution and power transformers. *IEEE Std C57.96-2013 (Revision of IEEE Std C57.96-1999)*, pages 1–46, Jan 2014.

[68] D. L. Alvarez, J. A. Rosero, and E. E. Mombello. Analysis of impedance matrix in transformer windings through the finite element method (fem). In *Transmission Distribution Conference and Exposition - Latin America (PES T D-LA), 2014 IEEE PES*, pages 1–7, September 2014.

[69] M. A. Arjona, C. Hernandez, R. Escarela-Perez, and E. Melgoza. Thermal analysis of a dry-type distribution power transformer using fea. In *Electrical Machines (ICEM), 2014 International Conference on*, pages 2270–2274, September 2014.

[70] D. Azizian. Temperature prediction in cast-resin transformer due to non-linear loads. *Journal of Electrical Systems*, 10(3), 2014.

[71] M. A. Bahmani. *Design and Optimization of HF Transformers for High Power DC-DC Applications*. PhD thesis, 04 2014.

[72] S. Magdaleno-Adame, P. Penabad-Duran, J. C. Olivares-Galvan, S. Maximov, R. Escarela-Perez, and E. Campero-Littlewood. Reduction of stray losses in tertiary voltage bushings in power transformer tanks. In *Power, Electronics and Computing (ROPEC), 2014 IEEE International Autumn Meeting on*, pages 1–5, November 2014.

[73] A. Najafi and I. Iskender. A novel concept for derating of transformer under unbalance voltage in the presence of non linear load by 3-d finite element method. *Electrical Engineering*, 97(1):45–56, 2014.

[74] A. Nogueira. Finite element analysis of a welding transformer. *International Journal of Research and Reviews in Applied Sciences*, 18(3):1, 2014.

[75] Z. W. Zhang, W. H. Tang, Q. H. Wu, and J. D. Yan. Detection of minor axial winding movement within power transformers using finite element modeling. In *2014 IEEE PES General Meeting— Conference & Exposition*, pages 1–5. IEEE, 2014.

[76] K. Aditya, B. Peschiera, M. Youssef, and S. S. Williamson. Modelling and calculation of key design parameters for an inductive power transfer system using finite element analysis- a comprehensive discussion. In *Transportation Electrification Conference and Expo (ITEC), 2015 IEEE*, pages 1–6, June 2015.

[77] D. L. Alvarez, J. A. Rosero, and E. E. Mombello. Core influence on the frequency response analysis of power transformers through the finite element method. *Ingeniería e Investigación*, 35:110 – 117, 12 2015.

[78] M. A. Bahmani and T. Thiringer. Accurate evaluation of leakage inductance in high-frequency transformers using an improved frequency-dependent expression. *IEEE Transactions on Power Electronics*, 30(10):5738–5745, 2015.

[79] S. Candolfi, P. Viarouge, D. Aguglia, and J. Cros. Finite-element-based optimal design approach for high-voltage pulse transformers. *IEEE Transactions on Plasma Science*, 43(6):2075–2080, 2015.

[80] Z. Cheng, Y. Lei, K. Song, and C. Zhu. Design and loss analysis of loosely coupled transformer for an underwater high-power inductive power transfer system. *IEEE Transactions on Magnetics*, 51(7):1–10, 2015.

[81] D. Filipović-Grčić, B. Filipović-Grčić, and I. Uglešić. High-frequency model of the power transformer based on frequency-response measurements. *IEEE Transactions on Power Delivery*, 30(1):34–42, 2015.

[82] N. Hashemnia, A. Abu-Siada, and S. Islam. Improved power transformer winding fault detection using FRA diagnostics–part 1: axial displacement simulation. *IEEE Transactions on Dielectrics and Electrical Insulation*, 22(1):556–563, 2015.

[83] S. Janghorban, Q. Wang, D. G. Holmes, and X. Yu. A knowledge-based magnetic component design system with finite element analysis integration. In *2015 IEEE Applied Power Electronics Conference and Exposition (APEC)*, pages 1038–1044, March 2015.

[84] S. Kaur and D. Kaur. Article: 3D finite element analysis for core losses in transformer. *IJCA Proceedings on International Conference on Advancements in Engineering and Technology*, ICAET 2015(7):27–30, August 2015.

[85] H. Li, W. Water, B. Zhu, and J. LuM. Integrated high-frequency coaxial transformer design platform using artificial neural network optimization and fem simulation. *IEEE Transactions on Magnetics*, 51(3):1–4, 2015.

[86] K. T. Martin, B. Andres, and F. E. Bisogno. Analysis of piezoelectric transformer by finite element method and experimental verification. In *2015 IEEE 13th Brazilian Power Electronics Conference and 1st Southern Power Electronics Conference (COBEP/SPEC)*, pages 1–5, November 2015.

[87] S. Maximov, J. C. Olivares Galvan, S. Magdaleno Adame, R. Escarela Perez, and E. Campero Littlewood. New analytical formulas for

electromagnetic field and eddy current losses in bushing regions of transformers. *IEEE Transactions on Magnetics*, 51(4):1–10, April 2015.

[88] S. P. K. Mokkapaty, J. Weiss, A. Schramm, S. Magdaleno-Adame, J. C. Olivares-Galvan, and H. Schwarz. 3 D finite element analysis of magnetic shunts and aluminum shields clamping frames of distribution transformers. In *2015 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC)*, pages 1–6, November 2015.

[89] S. Mousavi. *Electromagnetic Modelling of Power Transformers for Study and Mitigation of Effects of GICs*. PhD thesis, KTH, Electromagnetic Engineering, 2015. QC 20150210.

[90] M. A. Navarro and A. J. Monteiro. Submersible dry-type transformer. *IEEE Transactions on Power Delivery*, 30(5):2189–2194, October 2015.

[91] A. Nogueira, L. Maldonado, D. de Melo, K. Devegili, and A. Bartsch. Determination of equivalent electric circuit parameters of single-phase power transformers with different number of winding turns. *International Journal of Research and Reviews in Applied Sciences*, 22(3):110, 2015.

[92] L. M. R. Oliveira and A. J. M. Cardoso. Leakage inductances calculation for power transformers interturn fault studies. *IEEE Transactions on Power Delivery*, 30(3):1213–1220, 2015.

[93] N. Yusoff, K. Karim, S. Ab Ghani, T. Sutikno, and A. Jidin. Multiphase transformer modelling using finite element method. *International Journal of Power Electronics and Drive Systems*, 6(1):56–64, 2015.

[94] A. Ahmad, I.Javed, W. Nazar, and M. Mukhtar. Short circuit stress analysis using fem in power transformer on h-v winding displaced vertically amp; horizontally. *Alexandria Engineering Journal*, 2016.

[95] M. Allahbakhshi and M. Akbari. Heat analysis of the power transformer bushings using the finite element method. *Applied Thermal Engineering*, 100:714 – 720, 2016.

[96] D. Azizian, M. Bigdeli, and J. Faiz. Design optimization of cast-resin transformer using nature-inspired algorithms. *Arabian Journal for Science and Engineering*, 41(9):3491–3500, 2016.

[97] R. Dogan, S. Jazebi, and F. de León. Investigation of transformer-based solutions for the reduction of inrush and phase-hop currents. *IEEE Transactions on Power Electronics*, 31(5):3506–3516, May 2016.

[98] M. Finocchio, J. Lopes, J. de França, J. Piai, and J. Mangili. Neural networks applied to the design of dry-type transformers: an example to analyze the winding temperature and elevate the thermal quality. *International Transactions on Electrical Energy Systems*, pages 1–10, 2016.

[99] E. Mechkov, R. Tzeneva, V. Mateev, and I. Yatchev. Electromagnetic field modelling using fem of the active part of oil-immersed transformers. In *Materials Science Forum*, volume 856, pages 184–189. Trans Tech Publications, 2016.

[100] P. Thummala, H. Schneider, Z. Zhang, and M. Andersen. Investigation of transformer winding architectures for high-voltage (2.5 kv) capacitor charging and discharging applications. *IEEE Transactions on Power Electronics*, 31(8):5786–5796, 2016.

[101] N. Yusoff, K. Karim, S. Ab Ghani, T. Sutikno, and A. Jidin. Analysis of multiphase transformer supplying a static and dynamic load. *ARPN Journal of Enginnering and Applied Sciences*, 11(14):8987–8991, july 2016.

[102] L. Zhu, H. S. Yoon, H. J. Cho, D. J. Um, and C. S. Koh. Finite-element analysis of magnetostriction force in power transformer based on the measurement of anisotropic magnetostriction of highly grain-oriented electrical steel sheet. *IEEE Transactions on Magnetics*, 52(3):1–4, March 2016.

[103] A. Ramos and J.Burgos. Influence of tertiary stabilizing windings on zero-sequence performance of three-phase three-legged {YNynd} transformers. part i: Equivalent circuit models. *Electric Power Systems Research*, 144:32 – 40, 2017.

[104] T. Terakura, K. Takano, T. Yasuoka, S. Mori, O. Hosokawa, T. Iwabuchi, T. Chigiri, and S. Yamada. Transient electric field analysis in consideration of the electric field dependence of resistivity in the converter transformer. *Electrical Engineering in Japan*, 198(1):3–11, 2017.

[105] S. S. Bhavikatti. *Finite Element Analysis*. New Age International Publisher, 2 edition, 2010.

[106] K.H. Huebner, D.L.Dewhirst, T.G. Byrom, and D.E. Smith. *The Finite Element Method for Engineers*. A Wiley-Interscience publication. Wiley, 2001.

[107] F. P. Incropera and D. P. DeWitt. *Fundamentals of Heat and Mass Transfer*. John Wiley and Sons, 4 edition, 1998.

[108] *Indian Standard, Specification for Dry Type Power Transformers,IS-11171*, 1985. reaffirmed 2001.

[109] P. I. Kattan. *MATLAB guide to finite elements: an interactive approach*. Springer Science & Business Media, 2010.

[110] S. V. Kulkarni and S. A. Khaparde. *Transformer engineering: design and practice*, volume 25. Crc Press, 2004.

[111] Y. W. Kwon and H. Bang. *The Finite Element Method using Matlab*. CRC Press, 2 edition, 2000.

[112] E. Madenci and I. Guven. *The Finite Element Method and Applications in Engineering Using ANSYS®*. Springer-Verlag New York, Inc., Secaucus, NJ, USA, 2007.

[113] S. Moaveni. *Finite Element Analysis Theory and Application with Ansys*. Pearson Education, 3 edition, 2011.

[114] J. A. Momoh. *Electric power system applications of optimization*. CRC press, 2001.

[115] M. S. Naidu and V. Kamaraju. *High Voltage Engineering*. Tata McGraw Hill, 3 edition, 2004.

[116] S. S. Rao. *Engineering optimization: theory and practice*. John Wiley & Sons, 2009.

[117] S. S. Rao. *The Finite Element Method in Engineering*. Elsevier, Delhi, 5 edition, 2011.

[118] A. K. Sawhney. *A course in Electrical Machine Design*. Dhanpat Rai and Sons, Delhi, 1994.

[119] M. G. Say. *The performance and Design of Alternating Current Machines*. CBA.S Publishers, Delhi, 3 edition, 1983.

[120] Co. Wm and T. McLyman. *Transformer and Inductor Design Hand book*. Marcel Dekker, Inc.,, New York, USA, 3 edition, 2004.

[121] O. C. Zienkiewicz, R. L. Taylor, and J. Z. Zhu. *The Finite Element Method: its Basis and Fundamentals*. Butterworth-Heinemann, Oxford, seventh edition, 2013.