

Referencias

- [1] B. Suh, G. Sinha, M Manjrekar, T. Lipo, 'Multilevel Power Conversion - An Overview Of Topologies And Modulation Strategies', 6th International Conference On Optimization of Electrical and Electronic Equipments (OPTIM'98). Vol. 2, pp. AD11-AD24, 1998.
- [2] A. Nabae, I. Takahashi, H. Akagi, 'A New Neutral-Point-Clamped PWM Inverter'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'80). Vol. 2, pp. 761-766, 1980.
- [3] T. A. Meynard, H. Foch, 'Multi-Level Conversion: High Voltage Choppers and Voltage-Source Inverters'. IEEE Power Electronics Specialists Conference (PESC'92), Vol. 1, pp. 397-403, 1992.
- [4] T. A. Meynard, H. Foch, 'Multilevel Converters and Derived Topologies for High Power Conversion'. IEEE Int. Conf. On Industr. Electr. and Instrum.(IECON'95), Vol. 1, pp. 21-26, 1995.
- [5] J. Courault, O. Lapierre, J. L. Pouliquen, 'Industrial Interest of Multilevel Converters'. Proceedings of the 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [6] G. Walker, G. Ledwich, 'Bandwidth Considerations for Multilevel Converters'. IEEE Trans. on Power Electronics, Vol. 14, no. 1, pp. 74-81, Jan. 1999.
- [7] J. Rodríguez, J. S. Lai, F. Z. Peng, 'Multilevel Inverters: A Survey of Topologies, Controls, and Applications'. IEEE Trans. on Industrial Electronics, Vol. 49, no. 4, pp. 724-738, Aug. 2002.
- [8] J. S. Lai, F. Z. Peng, 'Multilevel Converters--A New Breed of Power Converters'. IEEE Trans. On Industry Applications, Vol. 32, No. 3, May/Jun. 1996.
- [9] E. Persson, 'Transient effects in application of PWM inverters to induction motors'. IEEE Trans. On Industry Applications, Vol. 28, no. 5, pp. 1095-1101, Sept/Oct. 1992.
- [10] R. Teodorescu, F. Blaabjerg, J. K. Pedersen, E. Cengelci, S. U. Sulistijo, B. O. Woo, P. Enjeti, 'Multilevel Converters - A Survey'. Proceedings of the 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [11] E. Cengelci, S. U. Sulistijo, B. O. Boo, P. Enjeti, R. Teodorescu, F. Blaabjerg, 'A New Medium-Voltage PWM Inverter Topology for Adjustable-Speed Drives'. IEEE Trans. On Industry Applications, Vol. 35, no. 3, pp. 628-637, May/Jun. 1999.
- [12] N. S. Choi, J. G. Cho, G. H. Cho, 'A General Circuit Topology of Multilevel Inverter'. IEEE Power Electronics Specialists Conference (PESC'91), Vol. 1, pp. 96-103, 1991.

- [13] S. Bernet, 'Recent Developments for High Power Converters for Industry and Traction Applications'. IEEE Trans. On Power Electronics, Vol. 15, no. 6, pp. 1102-1117. Nov. 2000.
- [14] O. Alonso, P. Sanchís, A. Guerrero, L. Marroyo, 'Semiconductores de Potencia. Evolución y Tendencias'. Mundo Electrónico, no. 306. Febrero 2000.
- [15] Y. Shakweh, E. A. Lewis, 'Assessment of Medium Voltage PWM VSI Topologies for Multi-Megawatt Variable Speed Drive Applications'. IEEE Power Electronics Specialists Conference (PESC'99). Vol. 2., pp. 965-971, 1999.
- [16] C. Newton, M. Sumner, 'Multi-level convertors. A real solution to medium/high voltage drives?'. Power Engineering Journal, Vol. 12.1, pp. 21-26. Feb. 1998.
- [17] N. Celanovic, 'Space Vector Modulation and Control of Multilevel Converters'. Ph. D. Dissertation. CPES-Virginia Polytechnic Institute & State University, 2000.
- [18] X. Yuan, I. Barbi, 'Fundamentals of a New Diode Clamping Multilevel Inverter'. IEEE Trans. On Power Electronics, Vol. 15, no. 4, pp. 711-718, July 2000.
- [19] B. S. Suh, D. S. Hyun, 'A New N-Level High Voltage Inversion System'. IEEE Trans. On Industrial Electronics, Vol. 44, No. 1, Feb. 1997.
- [20] F. Z. Peng, J. S. Lai, J. McKeever, J. VanCoevering, 'A Multilevel Voltage-Source Inverter with Separate DC Sources for Static VAr Generation'. IEEE Trans. On Industry Applications, Vol. 32, No. 5, Sept/Oct. 1996.
- [21] M. Marchesoni, P. Tenca, 'Theoretical and Practical Limits in Multilevel MPC Inverters with Passive Front Ends'. Proceedings of the 10th European Conference On Power Electronics and Applications (EPE'01). CD-ROM. 2001.
- [22] J. Pou, 'Modulation and Control of Three-Phase PWM Multilevel Converters'. Tesis Doctoral. Universitat Politècnica de Catalunya. Nov. 2002.
- [23] R. Gannett, N. Celanovic, D. Borojevic, 'A Comparative Study of Diode Clamped and Flying Capacitor Five-Level Converter Technology for Ship, Electric Propulsion System'. Report CPES-Virginia Polytechnic Institute & State University, 2000.
- [24] M. Marchesoni, M. Mazzucchelli, S. Tenconi, 'A Nonconventional Power Converter for Plasma Stabilization'. IEEE Power Electronics Specialists Conference (PESC'88), Vol. 1, pp. 122-129, 1988.
- [25] R. Teodorescu, F. Blaabjerg, J. K. Pedersen, E. Cengelci, P. Enjeti, 'Multilevel Inverter by Cascading Industrial VSI'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 832-838, August 2002.
- [26] L. Tolbert, F. Peng, 'Multilevel Converters as a Utility Interface for Renewable Energy Systems'. IEEE Power Engineering Society Summer Meeting, Vol. 2, pp. 1271-1274, 2000.
- [27] M. D. Manjrekar, P. K. Steimer, T. A. Lipo, 'Hybrid Multilevel Power Conversion System: A Competitive Solution for High-Power Applications'. IEEE Trans. On Industry Appl., Vol. 36, no. 3, May/Jun 2000.

- [28] J. Rodriguez, L. Moran, J. Pontt, J.L. Hernandez, L. Silva, C. Silva, P. Lezana, 'High-Voltage Multilevel Converter with Regeneration Capability'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 839-846, August 2002.
- [29] N. P. Schbli, T. Nguyen, A. C. Rufer, 'A Three-Phase Multilevel Converter for High-Power Induction Motors'. IEEE Trans. On Power Electronics, Vol. 13, no. 5, pp. 978-986, Sept. 1998.
- [30] W. A. Hill, C. D. Harbourt, 'Performance of Medium Voltage Multilevel Inverters'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'99), Vol. 2, pp. 1186-1192, 1999.
- [31] E. Hiraki, M. Ishibashi, M. Nakaoka, T. Horiuchi, Y. Sugawara, 'Feasible Performance Evaluations of Active Resonant Snubber-Assisted Three-Phase Soft Switching Inverter'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 999-1004, 1999.
- [32] X. Yuan, I. Barbi, 'Zero-Voltage Switching for Three-Level Capacitor Clamping Inverter'. IEEE Trans. On Power Electronics, Vol. 14, no. 4, Jul. 1999.
- [33] X. Yuan, H. Stemmler, I. Barbi, 'Evaluation of Soft Switching Techniques for the Neutral-Point-Clamped (NPC) Inverter'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 659-664, 1999.
- [34] X. Yuan, I. Barbi, 'Soft-Switched Three-Level Capacitor Clamping Inverter with Clamping Voltage Stabilization'. IEEE Trans. on Industry Appl., Vol. 36, no. 4, pp. 1165-1173, Jul/Aug 2000.
- [35] J. Chang, J. Hu, F. Z. Peng, 'Modular, Pinched DC-Link and Soft Commutated Three-Level Inverter'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 1065-1070, 1999.
- [36] D. Peng, D. H. Lee, F. C. Lee, D. Borojevic, 'Modulation and Control Strategies of ZCT Three-Level Choppers for SMES Application'. IEEE Power Electronics Specialists Conference (PESC'00), Vol. 1, pp. 121-126, 2000.
- [37] H. Mao, 'Soft Switching Techniques for High Power PWM Converters'. Ph.D. Dissertation, VPEC-Virginia Polytechnic Institute & State University, Dec. 1996.
- [38] Y. Zhao, Y. Li, T. A. Lipo, 'Force Commutated Three Level Boost Type Rectifier'. IEEE Trans. On Industry Appl., Vol. 31, No. 1, pp. 155-161, Jan./Feb. 1995.
- [39] M. Milanović, F. Mihalič, 'A Switching Matrix Analysis of Three-Level Boost Rectifier'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'96), Vol. 2, pp. 1218-1224, 1996.
- [40] A. Ch. Rufer, 'An Aid in the Teaching of Multilevel Inverter'. IEEE Power Electronics Specialists Conference (PESC'95), Vol. 1, pp. 346-352, 1995.
- [41] B-R. Lin, 'Analysis and Implementation of a Three-Level PWM Rectifier/Inverter'. IEEE Trans. On Aerospace and Electronic Systems, Vol. 36, no. 3, pp. 948-956, July 2000.
- [42] F. Z. Peng, 'A Generalized Multilevel Inverter Topology with Self Voltage Balancing'. IEEE Trans. On Industry Appl., Vol. 37, no. 2, Mar/Apr 2001.
- [43] R. Pindado, J. Pou, 'Convertidores multinivel CC/CA. Topologías básicas (I)'. Mundo Electrónico, no. 332. Junio 2002.

- [44] H. Zhang, A. von Jouanne, S. Dai, A. K. Wallace, F. Wang, 'Multilevel Inverter Modulation Schemes to Eliminate Common-Mode Voltages'. IEEE Trans. On Industry Appl., Vol. 36, no. 6, pp. 1645-1653, Nov/Dec 2000.
- [45] M. M. Swamy, K. Yamada, T. Kume, 'Common Mode Current Attenuation Techniques for Use with PWM Drives'. IEEE Trans. On Power Electronics, Vol. 16, no. 2, pp. 248-255, March 2001.
- [46] F. Wang, 'Motor Shaft Voltages and Bearing Currents and Their Reduction in Multilevel Medium-Voltage PWM Voltage-Source-Inverter Drive Applications'. IEEE Trans. On Industry Appl., Vol. 36, no. 5, pp. 1336-1341, Sept/Oct. 2000.
- [47] S. Ogasawara, H. Ayano, H. Akagi, 'An Active Circuit for Cancellation of Common-Mode Voltage Generated by a PWM Inverter', IEEE Trans. On Power Electronics, Vol. 13, no. 5, pp. 835-841, Sept. 1998.
- [48] P. C. Loh, D. G. Holmes, Y. Fukuta, T. Lipo, 'Reduced Common-Mode Modulation Strategies for Cascaded Multilevel Inverters'. IEEE Trans. On Industry Appl., Vol. 39, no. 5, pp. 1386-1395, Sept/Oct. 2003.
- [49] J. Rodríguez, P. Correa, L. Morán, 'A Vector Control Technique for Medium Voltage Multilevel Inverters'. Applied Power Electronics Conference and Exposition (APEC'01). Vol. 1. pp. 173-178. 2001.
- [50] L. Li, D. Czarkowski, Y. Liu, P. Pillay, 'Multilevel Selective Harmonic Elimination PWM Technique in Series-Connected Voltage Inverters'. IEEE Trans. On Industry Appl. Vol. 36, no. 1, pp.160-170. Jan/Feb 2000.
- [51] H. Liu, G. H. Cho, S. S. Park, 'Optimal PWM Design for High Power Three-Level Inverter Through Comparative Studies', IEEE Trans. On Power Electronics, Vol. 10, no. 1, pp. 38-47, Jan. 1995.
- [52] S. Halasz, A. Abdalla, B. T. Huu, 'Optimal Control of Three-Level PWM Inverters'. IEEE Trans. On Industrial Electronics, Vol. 44, no. 1, Feb. 1997.
- [53] G. Carrara, D. Casini, S. Gardella, R. Salutari, 'Optimal PWM for the Control of Multilevel Voltage Source Inverter', 5th European Conf. On Power Electronics and Appl. (EPE'93), Vol. 4, pp. 255-259, 1993.
- [54] B. Velaerts, P. Mathys, Z. F. Zendaoui, 'Study of 2 and 3-Level Precalculated Modulations (PWM VSI)'. 4th European Conf. On Power Electronics and Appl. (EPE'91), Vol. 3, pp. 228-234, 1991.
- [55] B. D. Bedford, R. G. Hoft. *Principles of inverter circuits*. Ed. John Wiley & Sons, 1964.
- [56] N. Mohan, T. Undeland, W. Robbins. *Power Electronics: Converters, Applications and Design*. Ed. John Wiley & Sons, 2^a edición, 1995.
- [57] Y. Sato, T. Kataoka, 'State Feedback Control of Current-Type PWM AC-to-DC Converters'. IEEE Trans. On Industry Appl., Vol. 29, no. 6, pp. 1090-1097, Nov/Dec. 1993.
- [58] S. Fukuda, K. Suzuki, 'Harmonic Evaluation of Carrier-Based PWM Methods using Harmonic Distortion Determining Factor'. Power Conversion Conference (PCC'97), pp. 259-264, 1997.

- [59] S. Halasz, 'Analysis of Pulsewidth Modulation Techniques for Induction Motor Drives', IEEE Int. Symp. On Industrial Electronics (ISIE'93), pp. 200-204, 1993.
- [60] S. Halasz, B. T. Huu, A. Zakharov, 'Two-Phase Modulation Technique for Three-Level Inverter-Fed AC Drives'. IEEE Trans. On Industrial Electronics, Vol. 47, no. 6, Dec. 2000.
- [61] K. Matsui, Y. Kawata, F. Ueda, 'Application of Parallel Connected NPC-PWM Inverters with Multilevel Modulation for AC Motor Drive'. IEEE Trans. On Power Electronics, Vol. 15, no. 5, pp. 901-907, Sept. 2000.
- [62] T. Maruyama, M. Kumano, 'A New Asynchronous PWM Method for a Three-Level Inverter'. IEEE Power Electronics Specialists Conference (PESC'91), Vol. 1, pp. 366-371, 1991.
- [63] G. Carrara, S. Gardella, M. Marchesoni, R. Salutari, G. Scuitto, 'A New Multilevel PWM Method: A Theoretical Analysis', IEEE Trans. On Power Electronics, Vol. 7, no. 3, pp. 497-505, July 1992.
- [64] J.K. Steinke, 'Switching Frequency Optimal PWM Control of a Three-Level Inverter', IEEE Trans. On Power Electronics, Vol. 7, no. 3, pp. 487-496, July 1992.
- [65] T. Maruyama, M. Kumano, 'New PWM Control Method for a Three-Level Inverter'. Proceedings of IPEC'90, Vol. 2, pp. 870-877, 1990.
- [66] B. Mwinyiwiwa, Z. Wolanski, Y. Chen, B. T. Ooi, 'Multimodular Multilevel Converters with Input/Output Linearity'. IEEE Trans. on Industry Appl., Vol. 33, no. 5, Sept/Oct. 1997.
- [67] L. Tolbert, T. Habetler, 'Novel Multilevel Inverter Carrier-Based PWM Methods'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'98), Vol. 2, pp. 1424-1431, Oct. 1998.
- [68] A. Rufer, M. Veenstra, 'Asymmetric Multilevel Converter for High Resolution Voltage Phasor Generation'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [69] D. G. Holmes, 'The Significance of Zero Space Vector Placement for Carrier-Based PWM Schemes'. IEEE Trans. On Industry Appl., Vol. 32, no. 5, Sept/Oct. 1996.
- [70] J. Holtz, 'Pulsewidth Modulation for Electronic Power Conversion'. Proceedings of the IEEE, Vol. 82, no. 8, pp. 1194-1214. Aug. 1994.
- [71] G. Walker, 'Digitally-Implemented Naturally Sampled PWM Suitable for Multilevel Converter Control'. IEEE Trans. On Power Electronics, Vol. 18, no. 6, pp. 1322-1329, Nov. 2003.
- [72] S. Bowes, S. Grewal, D. Holliday, 'High Frequency PWM Technique for Two and Three Level Single-Phase Inverters'. IEE Electric Power Applications Proceedings, Vol. 147, no. 3, pp. 181-191, May 2000.
- [73] A. Del'Aquila, R. Formosa, E. Montaruli, P. Zanchetta, 'Novel Multilevel PWM Inverter Implementation'. IEEE Industrial Electronics Society Annual Meeting (IECON'97), Vol. 2, pp. 710-715, 1997.

- [74] L. M. Tolbert, F. Z. Peng, T. G. Habetler, 'Multilevel PWM Methods at Low Modulation Indices', IEEE Trans. On Power Electronics, Vol. 15, no. 4, pp. 719-725, July 2000.
- [75] H. W. Van der Broeck, H. Ch. Skundelny, G. V. Stanke, 'Analysis and Realization of a Pulsewidth Modulator Based on Voltage Space Vectors'. IEEE Trans. On Industry Appl., Vol. 24, no. 1, Jan/Feb. 1988.
- [76] Analog Devices. 'Space Vector Modulation'. www.analog.com. Enero 1999.
- [77] H. L. Liu, N. S. Choi, G. H. Cho, 'DSP Based Space Vector PWM for Three-Level Inverter with DC-Link Voltage Balancing'. IEEE Int. Conf. On Industrial Electronics and Instrum. (IECON'91), Vol. 1, pp. 197-203, 1991.
- [78] Y. H. Lee, R. Y. Kim, D. S. Hyun, 'A Novel SVPWM Strategy Considering DC-link Balancing for a Multi-level Voltage Source Inverter'. IEEE Applied Power Electronics Conference and Exposition (APEC'99), Vol. 1, pp. 509-514, 1999.
- [79] J.H. Suh, C. H. Choi, D. S. Hym, 'A New Simplified Space-Vector PWM Method for Three-Level Inverters'. IEEE Applied Power Electronics Conference and Exposition (APEC'99), Vol. 1, pp. 515-520, 1999.
- [80] B. Kaku, I. Miyashita, S. Sone, 'Switching Loss Minimised Space Vector PWM Method for IGBT Three-Level Inverter'. IEE Proceedings On Electric Power Appl. Vol. 1, no. 3, pp. 182-190. May 1997.
- [81] M. Koyama, T. Fujii, R. Uchida, T. Kawabata, 'Space Voltage Vector-Based New PWM Method for Large Capacity Three-Level GTO Inverter'. International Conference On Industrial Electronics, Control, Instrumentation and Automation. Power Electronics and Motion Control. Vol. 1, pp. 271-276, 1992.
- [82] R. Rojas, T. Ohnishi, T. Suzuki, 'An Improved Voltage Vector Control Method for Neutral-Point-Clamped Inverters'. IEEE Trans. On Power Electronics. Vol. 10, no. 6, pp. 666-672. Nov. 1995.
- [83] K. Oguchi, T. Karaki, N. Hoshi, 'Space Vectors of Output Voltages of Reactor-Coupled Three-Phase Multilevel Voltage-Source Inverters'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [84] J. H. Seo, C. H. Choi, D. S. Hyun, 'A New Simplified Space-Vector PWM Method for Three-Level Inverters'. IEEE Trans. On Power Electronics, Vol. 16, no. 4, pp. 545-550, July 2001.
- [85] Y. H. Lee, B. S. Suh, D. S. Hyun, 'A Novel PWM Scheme for a Three-Level Voltage Source Inverter with GTO Thyristors'. IEEE Trans. On Industry Appl., Vol. 32, no. 2, Mar/Apr. 1996.
- [86] S. Busquets, 'Metodología para el Análisis de Técnicas SVM en Convertidores Trifásicos Multinivel: Aplicación a la Síntesis de una Nueva Estrategia para Convertidores de tres Niveles', Proyecto Final de Carrera, Departamento de Ingeniería Electrónica, Universidad Politécnica de Catalunya. Junio, 1999.
- [87] M. A. Martín Prats, 'Nuevas Técnicas de Modulación Vectorial para Convertidores de Potencia Multinivel'. Tesis Doctoral. Universidad de Sevilla. Junio, 2003.

- [88] H. L. Liu, G. H. Cho, 'Three-Level Space Vector PWM in Low Index Modulation Region Avoiding Narrow Pulse Problem', IEEE Trans. On Power Electronics, Vol. 9, no. 5, pp. 481-486, Sept. 1994.
- [89] S. K. Mondal, B.K. Bose, V. Oleschuk, J. Pinto, 'Space Vector Pulse Width Modulation of Three-Level Inverter Extending Operation into Overmodulation Region'. IEEE Trans. On Power Electronics, Vol. 18, no. 2, pp. 604-611, March 2003.
- [90] K. Zhou, D. Wang, 'Relationship Between Space-Vector Modulation and Three-Phase Carrier-Based PWM: A Comprehensive Analysis'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 1, pp. 186-196, Feb. 2002.
- [91] F. Wang, 'Sine-Triangle versus Space-Vector Modulation for Three-Level PWM Voltage-Source Inverters'. IEEE Trans. On Industry Applications, Vol. 38, no. 2, pp. 500-506, Mar/Apr. 2002.
- [92] C. Martins, X. Roboam, T. Meynard, A. Carvalho, 'Multi-Level Direct Torque Control with Imposed Switching Frequency and Reduced Ripple'. IEEE Power Electronics Specialists Conference (PESC'00), Vol. 1, pp. 435-441, 2000.
- [93] X. Wu, L. Huang, 'Direct Torque Control of Three-Level Inverter Using Neural Networks as Switching Vector Selection'. IEEE Industry Applications Soc. Annual Meeting Conference (IAS'01), Vol. 2, pp. 939-944, 2001.
- [94] S. Singh, F. Li, C. Garrett, R. Thomas, 'A Study of Sigma-Delta Modulation Control Strategies for Multi-Level Voltage Source Inverters'. 7th Conference On Power Electronics and Variable Speed Drives, pp. 347-352, 1998.
- [95] H.L. Klaver, 'Control of Neutral Point of a Three-Level Inverter'. 4th European Conf. On Power Electronics and Appl. (EPE'91), Vol. 3, pp. 278-281, 1991.
- [96] J. H. Song, S. J. Cho, I. Choy, J. Y. Choi, 'New PWM Method for Single-Phase Three-Level PWM Rectifiers'. IEEE Int. Symp. On Industrial Electronics (ISIE'97). pp. 283-287, 1997.
- [97] D. W. Kang, Y. H. Lee, B. S .Suh, C. H. Choi, D. H. Hyun, 'A New Carrierwave-Based SVPWM for the Multilevel H-bridge Inverter'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [98] K. Corzine, 'A Hysteresis Current-Regulated Control for Multi-Level Drives'. IEEE Trans. On Energy Conversion, Vol. 15, pp. 169-175, June 2000.
- [99] G. Bode, G. Holmes, 'Implementation of three level hysteresis current control for a single phase voltage source inverter'. IEEE Power Electronics Specialists Conference (PESC'00), Vol. 1, pp. 33-38, 2000.
- [100] K. Corzine, X. Kou, J. Baker, 'Dynamic Average-Value Modeling of a Four-Level Drive System'. IEEE Trans. on Power Electronics, Vol. 18, no. 2, pp. 619-627, March 2003.
- [101] S. Ogasawara, H. Akagi, 'A Vector Control System Using a Neutral-Point-Clamped Voltage Source PWM Inverter'. IEEE Industry Applications Society Annual Meeting (IAS'91). Vol. 1. pp. 422-427, 1991.
- [102] B. H. Kwon, T. W. Kim, J. H. Youm, 'A Novel SVM-Based Hysteresis Current Controller'. IEEE Trans. On Power Electronics, Vol. 13, no. 2, pp. 297-307. March 1998.

- [103] Y. Shrivastava, 'Analysis of Random Switching PWM Method for Three-Level Power Inverters'. IEEE Power Electronics Specialists Conference (PESC'98). Vol. 1, pp. 1381-1387, 1998.
- [104] R. D. Middlebrook, S. Cuk, 'A General Unified Approach to Modelling Switching-Converter Power Stages'. IEEE Power Electronics Specialists Conference (PESC'76), Vol. 1, pp. 18-34, 1976.
- [105] S. Hiti, D. Borojevic, 'Control of Front-End Three-Phase Boost Rectifier'. IEEE Applied Power Electronics Conference and Exposition (APEC'94), Vol. 2, pp. 927-933, 1994.
- [106] S. Hiti, 'Modeling and Control of Three-Phase PWM Converters'. Ph.D. Dissertation, Virginia Polytechnic Institute & State University, 1995.
- [107] D. C. Lee, G. M. Lee, K. D. Lee, 'DC-Bus Voltage Control of Three-Phase AC/DC PWM Converters Using Feedback Linearization'. IEEE Trans. On Industry Appl., Vol. 36, no. 3, May/Jun 2000.
- [108] J. Espinoza, G. Joos, 'State Variable Decoupling and Power Flow Control in PWM Current-Source Rectifiers'. IEEE Trans. On Industrial Electronics, Vol. 45, no. 1, Feb. 1998.
- [109] J. Jung, S. Lim, K. Nam, 'A Feedback Linearizing Control Scheme for a PWM Converter-Inverter Having a Very Small DC-Link Capacitor'. IEEE Trans. On Industry Appl. Vol. 35, no. 5, pp.1124-1131. Sept/Oct 1999.
- [110] S. Hiti, V. Vlatkovic, D. Borojevic, F. C. Lee, 'A New Control Algorithm for Three-Phase PWM Buck Rectifier with Input Displacement Factor Compensation'. IEEE Trans. On Power Electronics, Vol. 9, no. 2, pp. 173-180, Mar. 1994.
- [111] S. Fukuda, 'LQ control of sinusoidal current PWM rectifiers'. IEE Proceedings on Electric Power Applications, Vol. 144, no. 2, pp. 95-100, March 1997.
- [112] S. B. Han, N .S. Choi, C. T . Rim, G. H. Cho, 'Modeling and Analysis of Static and Dynamic Characteristics for Buck-Type Three-Phase PWM Rectifier by Circuit D-Q Transformation'. IEEE Trans. On Power Electronics, Vol. 13, no. 2, pp. 323-336, March 1998.
- [113] V. Blasko, V. Kaura, 'A New Mathematical Model and Control of a Three-Phase AC-DC Voltage Source Converter'. IEEE Trans. On Power Electronics, Vol. 12, no. 1, pp. 116-123, Jan. 1997.
- [114] G. C. Cho, N. S. Choi, C. T. Rim, G. H. Cho, 'Modeling, Analysis and Control of Static Var Compensator Using Three-Level Inverter'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'92), Vol. 1, pp. 837-843, 1992.
- [115] G.C. Cho, G.H. Jung, N.S. Choi and G.H. Cho, 'Analysis and Controller Design of Static Var Compensator using Three-Level GTO Inverter'. IEEE Trans. On Power Electronics, Vol. 11, no. 1, pp. 57-65, Jan. 1996.
- [116] G. H. Jung, G. C. Cho, S. W. Hong, G. H. Cho, 'DSP Based Control of High Power Static VAr Compensator using Novel Vector Product Phase Locked Loop'. IEEE Power Electronics Specialists Conference (PESC'96), Vol. 1. pp. 238-243, 1996.

- [117] S. K. Lim, J. H. Kim, K. Nam, 'A DC-Link Voltage Balancing Algorithm for 3-Level Converter using the Zero Sequence Control'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 1083-1088, 1999.
- [118] O. Pollakowski, H. Pouliquen, W. Schumacher, 'State-Space Analysis of Diode-Clamped Multilevel Voltage Source Inverters for Static Var Compensation'. 6th European Conf. On Power Electronics and Appl. (EPE'97), pp. 1582-1587, 1997.
- [119] J. E. Slotine, W. Li. *Applied Nonlinear Control*. Ed. Prentice Hall, 1991.
- [120] R. Marino, P. Tomei. *Nonlinear Control Design. Geometric, Adaptative and Robust Control*. Ed. Prentice Hall, 1995.
- [121] N. Celanovic, D. H. Lee, D. Borojevic, F. C. Lee, 'Control Design of Three-Level Voltage Source Inverter for SMES Power Conditioning System'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 613-618, 1999.
- [122] L. Wei, F. Li, 'A Direct Power Feedback Method of a Dual PWM Three-Level Voltage Source Converter System'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 1089-1094, 1999.
- [123] M. Benghanem, A. Draou, A. Tahri, 'Reactive Power Control in Distribution System using an NPC Inverter Topology'. IEEE Industrial Electronics Society Annual Meeting (IECON'01), Vol. 2, pp. 927-930, 2001.
- [124] J. Bordonau, M. Cosan, D. Boroyevich, H. Mao, F.C. Lee, 'A State-Space Model for the Comprehensive Dynamic Analysis of Three-Level Voltage-Source Inverters'. IEEE Power Electronics Specialists Conference (PESC'97), Vol. 2, pp. 942-948, 1997.
- [125] S. Alepuz, J. Bordonau, J. Peracaula, 'Dynamic Analysis of Three-Level Voltage-Source Inverters Applied to Power Regulation'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 721-726, 1999.
- [126] J. F. Silva, N. Rodrigues, J. Costa, 'Space Vector Alpha-Beta Sliding Mode Current Controllers for Three-Phase Multilevel Inverters'. IEEE Power Electronics Specialists Conference (PESC'00), Vol. 1, pp. 133-138, 2000.
- [127] B-K. Lee, M. Ehsani, 'A Simplified Functional Simulation Model for Three-Phase Voltage-Source Inverter Using Switching Function Concept'. IEEE Trans. On Industrial Electronics, Vol. 48, no. 2, pp. 309-321, April 2001.
- [128] M. J. Ryan, R. D. Lorenz, R. W. De Doncker, 'Modeling of Multileg Sine-Wave Inverters: A Geometric Approach'. IEEE Trans. On Industrial Electronics, Vol. 46, no. 6, pp. 1183-1191. Dec. 1999.
- [129] T. A. Meynard, M. Fadel, N. Aouda, 'Modeling of Multilevel Converters'. IEEE Trans. On Industrial Electronics, Vol. 44, no. 3, pp. 356-364, June 1997.
- [130] J. W. Choi, S. K. Sul, 'Fast Current Controller in Three-Phase AC/DC Boost Converter Using d-q Axis Crosscoupling'. IEEE Trans. On Power Electronics, Vol. 13, no. 1, pp.179-185, Jan. 1998.
- [131] K. Matsuse, T. Kitahata, K. Sugita, 'A Vector Control System for Induction Motor Using a Five-Level Inverter with DC-Chopper'. IEEE Power Electronics Specialists Conference (PESC'98). Vol. 2, pp. 984-989, 1998.

- [132] K. Ogata. *State Space Analysis of Control Systems*. Ed. Prentice Hall, 1967.
- [133] D. C. Lee, G. M. Lee, D. H. Kim, 'Multivariable State Feedback Control for Three-Phase Power Conversion Systems'. 7th European Conference On Power Electronics and Applications (EPE'97), pp. 1348-1353, 1997.
- [134] P. Dorato, C. Abdallah, V. Cerone. *Linear-Quadratic Control: An Introduction*. Ed. Prentice Hall. 1995.
- [135] S. Fukuda, Y. Matsumoto, A. Sagawa, 'Optimal-Regulator-Based Control of NPC Boost Rectifiers for Unity Power Factor and Reduced Neutral-Point-Potential Variations'. IEEE Trans. On Industrial Electronics, Vol. 46, no. 3, pp. 527-534, June 1999.
- [136] S. Alepuz, J. Bordonau, J. Peracaula, 'A Novel Control Approach of Three-Level VSIs using a LQR-based Gain-Scheduling Technique'. IEEE Power Electronics Specialists Conference (PESC'00), Vol. 2, pp. 743-748, 2000.
- [137] S. Alepuz, J. Bordonau, J. Peracaula, 'Power Regulation and DC-Link Neutral Point Voltage Balance Control of Three-Level VSIs using a LQR-based Gain-Scheduling Technique'. European Power Electronics-Power Electronics and Motion Control Conference (EPE-PEMC'00). CD-ROM. 2000.
- [138] S. Alepuz, J. Salaet, A. Gilabert, J. Bordonau, J. Peracaula, 'Control of Three-Level VSI using a LQR-based Gain-Scheduling Technique for the Regulation of the DC-Link and the Output Voltages'. European Power Electronics-Power Electronics and Motion Control Conference (EPE-PEMC'02). CD-ROM. 2002.
- [139] S. Alepuz, J. Salaet, A. Gilabert, J. Bordonau, J. Peracaula, 'Control of Three-Level VSLs with a LQR-Based Gain-Scheduling Technique applied to DC-Link Neutral Voltage and Power Regulation'. IEEE Conf. On Industr. Electr. and Instrum. (IECON'02), Vol. 2, pp. 914-919, 2002.
- [140] S. Alepuz, J. Salaet, A. Gilabert, J. Bordonau, J. Peracaula, 'Optimal Regulator with Integral Action and Gain-Scheduling for the Comprehensive Control of Three-Level VSI'. IEEE Power Electronics Specialists Conference (PESC'03), Vol. 3, pp. 1420-1425, 2003.
- [141] S. Alepuz, A. Gilabert, E. Argüelles, J. Bordonau, J. Peracaula, 'A New Approach for the Connection of a Three-Level Inverter to the Power Grid for Applications in Solar Energy Conversion'. IEEE Conf. On Industr. Electr. and Instrum. (IECON'02), Vol. 4, pp. 3285-3290, 2002.
- [142] E. Rosu, M. Gaiceanu, 'An Optimal Control with Energetic Criteria for DC Drives'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [143] D. C. Lee, S. K. Sul, M. H. Park, 'High Performance Current Regulator for a Field-Oriented Controlled Induction Motor Drive'. IEEE Trans. On Industry Appl., Vol. 30, no. 5, pp. 1247-1257, Sept/Oct. 1994.
- [144] J. Espinoza, G. Joós, L. Morán, 'Decoupled Control of the Active and Reactive Power in Three-Phase PWM Rectifiers based on Non-Linear Control Strategies'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 1. pp. 131-136, 1999.

- [145] O. Tachon, M. Fadel, T. Meynard, 'Control of Series Multicell Converters by Linear State Feedback Decoupling'. 7th European Conf. On Power Electronics and Appl. (EPE'97), pp. 1588-1593, 1997.
- [146] C. Edwards, S. Spurgeon. *Sliding Mode Control. Theory and Applications*. Ed. Taylor & Francis. 1995.
- [147] M. Carpita, 'Sliding Mode Controlled Inverter with Switching Optimization Techniques'. EPE Journal, Vol. 4, no 3, Sept. 1994.
- [148] V. Cárdenas, N. Vázquez, C. Hernández, S. Horta, 'Analysis and Design of a Three-Phase Sliding Mode Controller for a Shunt Active Power Filter'. Power Electronics Specialists Conference (PESC'99), Vol. 1, pp. 219-223, 1999.
- [149] J. Muñoz, A. García, 'Control Lyapunov-Integral de máquinas de inducción independiente de los parámetros de carga'. Seminario Anual de Automática, Electrónica Industrial e Instrumentación (SAAEI'99), pp. 421-424, 1999.
- [150] E. Oyarbide, S. Bacha, M. Rodriguez, 'Generalization of the passivity-based control to the class of static power converters'. Seminario Anual de Automática, Electrónica Industrial e Instrumentación (SAAEI'99), pp. 461-464, 1999.
- [151] V. Cárdenas et al., 'Analysis and Design of a Three-Phase Active Shunt Power Filter based on the Non-Linear Passivity Approach'. IEEE Power Electronics Specialists Conference (PESC'99). Vol. 1, pp. 224-229, 1999.
- [152] D. H. Lee, F.C. Lee, 'An Analysis of Mid-Point Balance for the Neutral-Point Clamp Three-Level VSI'. IEEE Power Electronics Specialists Conference (PESC'98), Vol. 1, pp. 193-199, 1998.
- [153] N. Celanovic, D. Borojevic, 'A Comprehensive Study of Neutral-Point Voltage Balancing Problem in the Three-Level Neutral-Point-Clamped Voltage Source Inverters'. Applied Power Electronics Conference and Exposition (APEC'99), Vol. 1, pp. 535-541, 1999.
- [154] M. C. Klabunde, Y. Zhao, T. A. Lipo, 'Current Control of a 3-Level Rectifier/Inverter Drive System'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'94), Vol. 1, pp. 859-866, 1994.
- [155] J. Rodriguez, D. Rodriguez, C. Silva, E. Wiechmann, 'A Simple Neutral Point Control for Three-Level PWM Rectifiers'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [156] R. Y. Kim, Y. H. Lee, D. S. Hyun, 'SVPWM for Small Fluctuation of Neutral Point Current in High Index Modulation Region of the Three-Level Inverter'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [157] D. Zhou, D. Rouaud, 'Experimental Comparisons of Space Vector Neutral Point Balancing Strategies for Three-Level Topology'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 1071-1076, 1999.
- [158] C. Newton, M. Sumner, 'Neutral Point Control for Multi-Level Inverters: Theory, Design and Operational Limitations'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'97), Vol. 2, pp. 1336-1343, 1997.

- [159] M. Marchesoni, P. Tenca, 'Diode-Clamped Multilevel Converters: A Practicable Way to Balance DC-Link Voltages'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 752-765, Aug. 2002.
- [160] M. Marchesoni, M. Mazzucchelli, F. V. P. Robinson, P. Tenca, 'Analysis of DC-Link Capacitor Voltage Balance in AC-DC-AC Diode-Clamped Multilevel Converters'. 8th European Conference on Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [161] F. Z. Peng, J. S. Lai, J. McKeever, J. VanCoevering, 'A Multilevel Voltage-Source Converter System with Balanced DC Voltages'. IEEE Power Electronics Specialists Conference (PESC'95), Vol. 1, pp. 367-374, 1995.
- [162] T. Ishida, K. Matsuse, K. Sasagawa, L. Huang, 'Five-Level Double Converters for Induction Motor Drives'. IEEE Industry Applications Magazine, July/August 2001.
- [163] T. Ishida, K. Matsuse, K. Sugita, L. Huang, K. Sasagawa, 'DC Voltage Control Strategy for a Five-Level Converter'. IEEE Trans. On Power Electronics, Vol. 15, no. 3, pp. 508-515, May 2000.
- [164] X. Yuan, H. Stemmler, I. Barbi, 'Investigation on the Clamping Voltage Self-Balancing of the Three-Level Capacitor Clamping Inverter'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 2, pp. 1059-1064, 1999.
- [165] F. Z. Peng, J. W. McKeever, D. J. Adams, 'A Power Line Conditioner Using Cascade Multilevel Inverters for Distribution Systems'. IEEE Trans. On Industry Applications, Vol. 34, no. 6, Nov/Dec. 1998.
- [166] GvA Leistungselektronik GmbH, 'IGBT/IGCT Possibilities of Application and Boundaries of Use'. GvA Technical Document. www.gva-leistungselektronik.com.
- [167] J.H. Sung, K. Nam, 'A Simple Snubber Configuration for Three-Level GTO Inverters'. IEEE Trans. On Power Electronics, Vol. 14, no. 2, March 1999.
- [168] S. Eicher, S. Bernet, P. K. Steimer, A. Weber, 'The 10 kV IGCT-A New Device for Medium Voltage Drives'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'00), Vol. 5, pp. 2859-2865, 2000.
- [169] S. Bernet, R. Teichmann, A. Zuckerberger, P. K. Steimer, 'Comparison of High-Power IGBTs and Hard-Driven GTOs for High-Power Inverters'. IEEE Trans. On Industry Applications, Vol. 35, no. 2, pp. 487-495, Mar/Apr. 1999.
- [170] GvA Leistungselektronik GmbH, 'IGBT vs. IGCT, where does it lead?'. GvA Technical Document. www.gva-leistungselektronik.com.
- [171] H. Miyazaki, H. Fukumoto, S. Sugiyama, M. Tachikawa, N. Azusawa, 'Neutral-Point-Clamped Inverter with Parallel Driving of IGBT's for Industrial Applications'. IEEE Trans. On Industry Appl., Vol. 36, no. 1, pp. 146-151, Jan/Feb 2000.
- [172] A. Nagel, S. Bernet, T. Bruckner, P. K. Steimer, O. Apeldoorn, 'Design of IGCT Series Connection for 6 kV Medium Voltage Drives'. IEE PWM Medium Voltage Drives Seminar, no. 2000/63, pp. 2/1-2/5, 2000.
- [173] R. Teichmann, S. Bernet, M. Luscher, 'State-of-the-Art Low Voltage and High Voltage IGBTs in Soft Switching Operation'. Applied Power Electronics Conference and Exposition (APEC'03), Vol. 2, pp. 938-945, 2003.

- [174] R. Redl, L. Balogh, N. O. Sokal, 'A Novel Soft-Switching Full-Bridge DC/DC Converter Analysis, Design Consideration, and Experimental Results at 1.5 kW, 100 kHz'. IEEE Trans. On Power Electronics, Vol. 6, no. 3, pp. 408-418, July 1991.
- [175] F. Canales, P. Barbosa, F. C. Lee, 'A Zero Voltage and Zero Current Switching Three-Level DC/DC Converter'. Applied Power Electronics Conference and Exposition (APEC'00), Vol. 1, pp. 314-320, 2000.
- [176] X. Ruan, D. Xu, L. Zhou, Bin Li, Q. Chen, 'Zero-Voltage-Switching PWM Three-Level Converter with Two Clamping Diodes'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 790-799, Aug. 2002.
- [177] X. Yuan, I. Barbi, 'Zero-Voltage Switching for the Neutral-Point-Clamped (NPC) Inverter'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 800-808, Aug. 2002.
- [178] L. M. Tolbert, F. Z. Peng, T. G. Habetler, 'Multilevel Converters for Large Electric Drives'. IEEE Trans. On Industry Applications, Vol. 35, no. 1, pp. 36-44, Jan/Feb. 1999.
- [179] R. H. Osman, 'A Comparison of Popular Medium-Voltage Motor Drives'. Robicon Technical Document. www.robicon.com.
- [180] H. Akagi, 'Large Static Converters for Industry and Utility Applications'. Proceedings of the IEEE, Vol. 89, no. 6, pp. 976-983, June 2001.
- [181] J. Böcker, J. Janning, H. Jebenstreit, 'High Dynamic Control of a Three-Level Voltage-Source-Converter Drive for a Main Strip Mill'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 5, pp. 1081-1092, Oct. 2002.
- [182] K. Nakata, K. Nakamura, S. Ito and K. Jinbo, 'A Three-Level Traction Inverter with IGBTs for EMU'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'94), Vol. 1, pp. 667-672, 1994.
- [183] J. Rodriguez, J. Pontt, G. Alzamora, N. Becker, O. Einenkel, A. Weinstein, 'Novel 20-MW Downhill Conveyor System using Three-Level Converters'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 5, pp. 1093-1100, Oct. 2002.
- [184] J. W. Kolar, U. Drolfenzik, F. C. Zach, 'Current Handling Capacity of the Neutral Point of a Three-Phase/Switch/Level Boost-Type PWM (Vienna) Rectifier'. IEEE Power Electronics Specialists Conference (PESC'96), Vol. 2, pp. 1329-1336, 1996.
- [185] K. Corzine, J. Baker, J. Yuen, 'Reduced Parts-Count Multilevel Rectifiers'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 4, pp. 766-774, Aug. 2002.
- [186] T. Gopalarathnam, T. Manjrekar, P. Steimer, 'Investigations on a unified controller for a practical hybrid multilevel power converter'. IEEE Applied Power Electronics Conference and Exposition (APEC'02), Vol. 2, pp. 1024-1030, 2002.
- [187] B. Zhang, 'The Method based on a Generalized dqk Coordinate Transform for Current Detection of an Active Power Filter and Power System'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 1, pp. 242-249, 1999.
- [188] F. Pökkter, I. Barbi, 'Power Factor Correction of Linear and Non-Linear Loads Employing a Single Phase Active Power Filter based on a Full-Bridge Current Source Inverter Controlled through the Sensor of the AC Mains Current'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 1, pp. 387-392, 1999.

- [189] L. Tolbert, F. Peng, T. Habetler, 'A Multilevel Converter-Based Universal Power Conditioner'. IEEE Power Electronics Specialists Conference (PESC'99), Vol. 1, pp. 393-399, 1999.
- [190] A. van Zyl, J. Enslin, R. Spee, 'A New Unified Approach to Power Quality Management'. IEEE Trans. On Power Electronics, Vol. 11, no. 5, pp. 691-697, Sept. 1996.
- [191] V. Karasik, K. Dixon, C. Weber, B. Batchelder, G. Campbell, P. Ribeiro, 'SMES for Power Utility Applications: A Review of Technical and Cost Considerations'. IEEE Trans. On Applied Superconductivity, Vol. 9, no. 2, pp. 541-546, June 1999.
- [192] Z. C. Zhang, B. T. Ooi, 'Multimodular Current-Source SPWM Converters for Superconducting a Magnetic Energy Storage System'. IEEE Trans. On Power Electronics, Vol. 8, no. 3, pp. 250-256, July 1993.
- [193] I. D. Hassan, R. M. Bucci, K. T. Swe, '400 MW Power Conditioning System Development and Simulation'. IEEE Trans. On Power Electronics, Vol. 8, no. 3, pp. 237-249, July 1993.
- [194] H. Mao, D. Borojevic, F. C. Lee, 'Multi-Level 2-quadrant Boost Choppers for Superconducting Magnetic Energy Storage'. Applied Power Electronics Conference and Exposition (APEC'96), Vol. 1, pp. 876-882, 1996.
- [195] H. C. Doht, M. Hilscher, K. Prescher, F. J. Unterlass, 'Design and Behavior of a Superconducting Energy Management Systems (SEMS) for Industrial Power Quality Applications'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [196] A. Arsoy, Y. Liu, P. F. Ribeiro, F. Wang, 'Power Converter and SMES in Controlling Power System Dynamics'. IEEE Industry Appl. Soc. Annual Meeting Conference (IAS'00), Vol. 4, pp. 2051-2057, Oct. 2000.
- [197] A. Arsoy, Y. Liu, P. F. Ribeiro, F. Wang, 'StatCom-SMES'. IEEE Industry Applications Magazine, Vol. 9, no. 2, pp. 21-28, Mar/Apr. 2003.
- [198] I. J. Iglesias, A. Agudo, M. Lafoz, 'Analysis and Simulation of Three-Level Voltage Source Inverters and its Application to Flywheel Energy Storage Systems'. 8th European Conference On Power Electronics and Applications (EPE'99). CD-ROM. 1999.
- [199] D. Soto, T. Green, 'A Comparison of High-Power Converter Topologies for the Implementation of FACTS Controllers'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 5, pp. 1072-1080, Oct. 2002.
- [200] I. Barbi, R. Gules, R. Redl, N. O. Sokal, 'DC/DC Converter for High Input Voltage: Four Switches with Peak Voltage $V_{in}/2$, Capacitive Turn-Off and Zero-Voltage Turn-On'. IEEE Power Electronics Specialists Conference (PESC'98), Vol. 1, pp. 1-7, 1998.
- [201] H. Ertl, J. Kolar, F. Zach, 'A Novel Multicell DC-AC Converter for Applications in Renewable Energy Systems'. IEEE Trans. On Industrial Electronics, Vol. 49, no. 5, pp. 1048-1057, Oct. 2002.
- [202] L.H. Hansen, L. Helle, F. Blaabjerg, E. Ritchie, S. Munk-Nielsen, H. Bindner, P. Sørensen, B.Bak-Jensen, 'Conceptual Survey of Generators and Power Electronics for

Wind Turbines'. Risø National Laboratory, December 2001.
www.risoe.dk/rispubl/VEA/ris-r-1205.htm.

- [203] D. Schreiber, Patente Europea EP 1 244 203 A2. Septiembre, 2002.
- [204] Zephyros BV. Fabricante de Sistemas de Generación Eólica. www.zephyros.com.
- [205] B. Friedland. *Control System Design. An Introduction to the State-Space Methods*. Ed. McGraw-Hill, 1986.
- [206] J.M. Layton. *Multivariable Control Theory*. Ed. IEE Control Engineering LTD, 1976.
- [207] J. Holtz, 'Pulsewidth Modulation--A Survey'. IEEE Trans. On Industrial Electronics, Vol. 39, no. 5, pp. 410-420, Dec. 1992.
- [208] H. Kim, H. Lee, S. Sul, 'A New PWM Strategy for Common Mode Voltage Reduction in Neutral-Point-Clamped Inverter-Fed AC Motor Drives'. IEEE Trans. On Industry Appl., Vol. 37, pp. 1840-1845, Nov/Dec. 2001.
- [209] K. Ratnayake, Y. Murai, 'A Novel PWM Scheme to Eliminate Common-Mode Voltage in Three-Level Voltage Source Inverters'. IEEE Power Electronics Specialists Conference (PESC'98), Vol. 1, pp. 269-274, 1998.
- [210] D. A. Rendusara, E. Cengelci, P. N. Enjeti, V. R. Stefanovic, J. W. Gray, 'Analysis of Common Mode Voltage -"Neutral Shift"- in Medium Voltage PWM Adjustable Speed Drive (MV-ASD) Systems'. IEEE Trans. On Power Electronics, Vol. 15, no. 3, pp. 1124-1133, Nov. 2000.
- [211] W. L. Brogan. *Modern Control Theory*. Ed. Prentice Hall. 3^a ed. 1991.
- [212] K. Ogata. *Discrete-Time Control Systems*. Ed. Prentice Hall. 3^a ed., 1997.
- [213] S. Skogestad, I. Postlethwaite. *Multivariable Feedback Control. Analysis and Design*. Ed. John Wiley & Sons. 6^a ed., 1996.
- [214] F. Rodríguez, M. J. López. *Control Adaptativo y Robusto*. Ed. Universidad de Sevilla, 1996.
- [215] T. A. Johansen, I. Petersen, O. Slupphaug, 'On Explicit Suboptimal LQR with State and Input Constraints'. IEEE Conference on Decision and Control, Vol. 1, pp. 662-667, 2000.
- [216] A. Bemporad, M. Morari, V. Dua, E. N. Pistikopoulos, 'The Explicit Linear Quadratic Regulator for Constrained Systems'. Automatica, no. 38 (2002), pp. 3-20, 2002.
- [217] C. Gökçec, P. T. Kabamba, S. M. Meerkov, 'An LQR/LQG Theory for Systems with Saturating Actuators'. IEEE Conference on Decision and Control, Vol. 4, pp. 3236-3241, 2000.
- [218] K.J. Åström, B. Wittenmark. *Adaptive Control*. Ed. Addison-Wesley. 2^a ed. 1995.
- [219] B. Friedland. *Advanced Control System Design*. Ed. Prentice Hall, 1996.
- [220] www.dspace.com.
- [221] C. Murciano, 'Diseño y Montaje de un Convertidor CC/CA de Tres Niveles'. Proyecto Final de Carrera, Escuela Universitaria Politécnica de Mataró, Universidad Politécnica de Catalunya. Julio, 2000.
- [222] F. Creus, 'Rediseño y Montaje de un Convertidor CC/CA de Tres Niveles'. Proyecto Final de Carrera, Escuela Universitaria Politécnica de Mataró, Universidad Politécnica de Catalunya. Julio, 2001.

- [223] S. R. Sanders, 'Nonlinear Control of Switching Power Converters'. Ph.D. Dissertation, Massachussets Institute of Technology (MIT), 1989.
- [224] S. Bonilla, R. Alejos, O. Montero, 'Método Gráfico para Garantizar la Correcta Modulación Espacial Vectorial'. Seminario Anual de Automática, Electrónica Industrial e Instrumentación (SAAEI'98), pp. 327-330, 1998.