

LIST OF PUBLICATIONS

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1 Books

1. Dabrowski M., GIERAS J.: *Induction Machines with Solid Rotors* (in Polish), PWN, Warszawa - Poznan, 1977, 96 pages.
2. GIERAS J.: *Linear Induction Motors* (in Polish), WNT, Warszawa, 1990, 272 pages.
3. GIERAS J.F.: *Linear Induction Drives*, Clarendon Press, Oxford (U.K.), 1994, 298 pages.
4. GIERAS J.F. and Wing M.: *Permanent Magnet Motors Technology: Design and Applications*, Marcel Dekker Inc., New York (U.S.A), 1st edition, 444 pages, 1996; 2nd edition revised and expanded, 590 pages, 2002;
5. GIERAS J.F. *Permanent Magnet Motors Technology: Design and Applications*, 3rd edition revised, updated and expanded, Taylor and Francis (CRC Pres) Boca Raton – New York - London, 612 pages, 2010.
6. GIERAS J.F., Gieras I.A.: *Electrical Energy Utilization*, A. Marszalek Publishing House, Torun, Poland, 245 pages, 1998.
7. GIERAS J.F., Piech. Z.J.: *Linear Synchronous Motors: Transportation and Automation Systems*, CRC Press, Boca Raton (U.S.A.), 327 pages, 1999.
8. GIERAS J.F., Piech Z.J., Tomczuk B.: *Linear Synchronous Motors: Transportation and Automation Systems*, 3rd edition revised, updated and expanded, CRC Press, Taylor & Francis Group, Boca Raton – New York - London, 580 pages, 2012.
9. GIERAS J.F., Wang R.J., Kamper M.J.: *Axial Flux Permanent Magnet Brushless Machines*, Kluwer Academic Publishers, Boston – Dordrecht – London, 340 pages, 2004; 2nd edition updated and revised, Springer, 362 pages, 2008.
10. GIERAS J.F., Wang, C., Lai J.: *Noise of Polyphase Electrical Motors*, CRC Press, Taylor & Francis Group, Boca Raton – London – New York, 2005.
11. GIERAS, J.F.: *Advancements in Electric Machines*, Springer, Dordrecht–London–New York, 2008, 278 pages.

2 Chapters in books

1. *Handbook of Electric Motors*, edited by W.H. Muddendorf and R.H. Engelmann (University of Cincinnati; J.F. Gieras is the author of Sections 2.5.7 and 4.6.3, Marcel Dekker Inc, New York (USA), 1995, 832 pages; 2nd edition revised and expanded edited by G. Kliman (General Electric) and H. Tolyiat (TM Texas University), 2010.
2. *Electric Power Generation, Transmission, and Distribution*, edited by L.L. Grigsby, J.F. Gieras is the author of Chapter 34 “Linear Electric Motors”, pp. 34-1 – 34-28, CRC Press, Taylor & Francis Group, Boca Raton – New York – London, 2012.

3 Textbooks

1. GIERAS J.: *Special Purpose Electric Machines* (in Polish), Wyd. Ucz. ATR, Bydgoszcz, 1983.
2. GIERAS, J.F. and Wing M.: *Permanent Magnet Brushless Motors*, Advanced Technologies ELM, Cape Town, Republic of South Africa, 1997, 184 pages.

4 Students' Course Manuals

1. Dabrowski M., GIERAS J., Malecki A., Margowski J.: *Laboratory of Fractional-Horsepower Electrical Machines* (in Polish), Wyd. Ucz. Polit. Pozn., Course Manual No. 469, Poznan, 1973.
2. GIERAS J.F.: *Electrical Energy Utilisation*, University of Cape Town, Republic of South Africa, 1996, 171 pages, second edition 1997, 181 pages.
3. GIERAS J.F.: *Energy Conversion*, University of Cape Town, Republic of South Africa, 1997, 167 pages.

5 Papers in Refereed Journals

5.1 IEEE and IEE Journals

1. GIERAS J.F.: *Analytical method of calculating the electromagnetic field and power losses in ferromagnetic half-space, taking into account saturation and hysteresis*, Proceedings IEE, UK, vol.124, 1977, No. 11, pp. 1098 – 1104.
2. GIERAS J.: *Simplified theory of double-sided linear induction motor with squirrel-cage elastic secondary*, IEE Proceedings, Part B: Electric Power Applications, UK, 130, 1983, No. 6, pp. 424 – 430.
3. GIERAS J.F., Eastham A.R., Dawson G.E.: *Performance calculation for single-sided linear induction motors with a solid steel reaction plate under constant current excitation*, IEE Proceedings, Part B: Electric Power Applications, UK, 132, 1985, No. 4, pp. 185 – 194.
4. Dawson G.E., Eastham A.R., GIERAS J.F., Ong R., Ananthasivam K.: *Design of linear induction drives by field analysis and finite element techniques*, IEEE Trans. on Industry Applications, USA, IA-22, 1986, No. 5, pp. 865 – 873.
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6. GIERAS J.F., Hippner M.: *Calculation of magnetic field and forces in electromagnetic devices for separation of steel sheets*, IEE Proceedings, Pt. B: Electric Power Applications, UK, 134, 1987, No. 2, pp. 110 – 114.
7. GIERAS J.F., Dawson G.E., Eastham A.R.: *A new longitudinal end effect factor for linear induction motors*, IEEE Trans. on Energy Conversion, USA, EC - 2, 1987, No. 1, pp. 152 – 159.
8. Adamiak K., Ananthasivam K., Dawson G.E., Eastham A.R., GIERAS J.F.: *The causes and consequences of phase unbalance in single-sided linear induction motor*, IEEE Trans. on Magnetics, USA, MAG - 24, No. 6, 1988, pp. 3223 – 3233.
9. GIERAS J.F.: *Analysis of multilayer rotor induction motor with higher space harmonics taken into account*, Proceedings IEE, Part B: Electric Power Applications, UK, 138, 1991, No. 2, pp. 59 – 67.

10. Wing M., and GIERAS J.F.: *Calculation of the steady state performance for small commutator permanent magnet dc motors: classical and finite element approach*, IEEE Trans. on Magnetics, USA, 28, 1992, No. 5, pp. 2067 – 1071.
11. GIERAS, J.F., Santini, E., and Wing, M.: *Calculation of synchronous reactances of small permanent magnet a.c. motors: comparison of analytical approach and finite element method with measurements*, IEEE Trans. on Magnetics, USA, 34, 1998, No. 5, pp. 3712 – 3720.
12. Davidson, I.E. and GIERAS, J.F.: *Analysis of a shaded-pole linear induction motor using symmetrical components, field analysis and finite element method*, IEEE Trans. on Energy Conversion, 15, 2000, No. 1, pp. 24 – 32.
13. GIERAS, J.F.: *Analytical approach to cogging torque calculation of PM brushless motors*, IEEE Trans. on Industry Applications, USA, 34, No 5, 2004, pp. 1310–1316.
14. Wang,R.J. ,Kamper, M.J., Van der Westhuizen, K., GIERAS, J.F.: *Optimal design of a coreless stator axial flux permanent magnet generator*, IEEE Trans. on Magnetics, USA, 41, No 1, 2005, pp. 55–64.
15. GIERAS J.F, Saari, J.: *Performance calculation for a high-speed solid rotor induction motor*, IEEE Trans. on Industrial Electronics, USA, 59, No 6, 2012, pp. 2689–2700.
16. GIERAS J.F., Mews J., Splawski P.: *Analytical calculation of electrodynamic levitation forces in a special-purpose linear induction motor*, IEEE Trans. on Industry Applications, USA, 48, No 1,2012, pp. 106-116.

5.2 International Refereed Journals

1. GIERAS J.: *Electromagnetic field, impedance and power loss in the screened ferromagnetic halfspace*, Acta Technica CSAV, Prague, Czechoslovakia, 1976, No. 5, pp. 514 – 534.
2. GIERAS J.: *General equations of electromagnetic field in composite multilayer structures for one-sided wave penetration*, Acta Technica CSAV, Prague, Czechoslovakia, 1977, No. 4, pp. 361 – 386.
3. GIERAS J.: *Electrodynamic levitation forces - theory and small-scale test results*, Acta Technica CSAV, Prague, Czechoslovakia, 1981, No. 4, pp. 389 – 414.
4. GIERAS J.: *Electrodynamic forces in electromagnetic levitation systems*, Acta Technica CSAV, Prague (Czechoslovakia), 1982, No. 5, pp. 532 – 545.
5. GIERAS J.: *Three-dimensional multi-layer theory of induction machines and devices*, Acta Technica CSAV, Prague Czechoslovakia, 1983, No. 5, pp. 525 – 548.
6. GIERAS J.: *Influence of structure and material of secondary suspended electrodynamicly on steady performance characteristics of linear induction motor with transverse flux*, etzArchiv, Germany, 6, 1984, No. 7, pp. 255 – 260.
7. GIERAS J.F., Eastham A.R., Dawson G.: *The influence of secondary solid ferromagnetic plate thickness on the performance of single-sided linear induction motors*, Electric Machines and Power Systems, USA, 10, 1985, No. 1, pp. 67 – 77.
8. GIERAS J.F.: *Analysis of a single-sided linear induction motor using an equivalent circuit with longitudinal end effect taken into account*, etzArchiv, Germany, 7, No. 12, 1985, pp. 405 – 408.
9. GIERAS J.F., Eastham A.R., Dawson G.E.: *The influence of conductive cap thickness on the performance of single-sided linear induction motors*, Electric Machines and Power Systems, USA, 11, No. 2, 1986, pp. 125 – 136.
10. GIERAS J.F., Eastham A.R., Dawson G.E., John G.: *Calculation of thrust for a single-sided linear induction motor, taking into account phase unbalance and higher time harmonics*, Archiv fur Elektrotechnik, Germany, 73, 1990, pp. 299 – 308.

11. GIERAS J.F.: *Performance calculation for small d.c. motors with segmental permanent magnets*, Trans. of SAIEE, Republic of South Africa, 82, No. 1, 1991, pp. 14 – 21.
12. GIERAS J.F.: *Calculation of stray losses in a single-sided linear induction motor*, Archiv fur Elektrotechnik, Germany), 75, 1992, pp. 103 – 107.
13. GIERAS J.F.: *Stray losses in a single-sided linear induction motor*, Compel - The Int. Journal for Computation and Mathematics in Electrical and Electronic Engineering, James and James Science Publishers, London, UK, 11, No. 1, 1992, pp. 189 – 192.
14. GIERAS J.F.: *Calculations of resistances and reactances of a single-sided linear induction motor*, European Transactions on Electrical Power Engineering, 2 No. 6, 1992, pp. 383 – 388.
15. Roeber J.H., and GIERAS J.F.: *A simple method of nonsinusoidal power measurements and its practical implementation*, 4th Int. Journal of Theoretical Electrotechnology, Szczecin, Poland, 1992, pp. 185 – 192.
16. GIERAS J.F., and Buhlmann H.H.: *Computer-controlled induction motor drive for teaching purposes*, Int. Journal of Electrical Engineering Education, Manchester University Press, UK, 30 No. 1, 1993, pp. 77 – 87.
17. GIERAS J.F.: *Sizing equations for single-sided linear induction motors*, Electric Machines and Power Systems, USA, 21, 1993, pp. 25 – 37.
18. Roeber J.E., and GIERAS J.F.: *Efficiency and temperature rise of a voltage-source inverter-fed cage induction motor*, Acta Technica CSAV, Republic of Czech), 38, 1993, pp. 602 – 616.
19. Wing, M., and GIERAS, J.F.: *Transient simulation of permanent magnet d.c. commutator motors using the finite element approach*, COMPEL - The Int. Journal for Computation and Mathematics in Electrical and Electronic Engineering, James & James Sciences Publishers, London, 12, 1994, No. 1, pp. 121 – 124.
20. Wing, M. and GIERAS, J.F.: *Accuracy of finite elements in computing the synchronous reactances of surface and buried permanent magnet brushless motors*, COMPEL, MCB University Press Ltd., UK, 14, No. 4, 1995, pp. 71 – 74.
21. GIERAS, J.F. and Wing M.: *Computation of repulsive forces of Stateplaced.c. electromagnets*, Electromotion, 3, No. 1, 1996, pp. 3 – 6.
22. Wang, R., GIERAS, J.F. and Ronda, J.: *Analysis of forces in a hybrid linear stepping motor*, Electromotion, 4, 1997, No. 1 – 2, pp. 15 – 20.
23. Davidson, I.E., GIERAS, J.F., Ojo, O., and Jimoh, A.A.: *Performance analysis of a single-phase linear induction motor using the field theory method*, Electromotion, 6, No. 4, 1999, pp. 123 – 128.
24. GIERAS, J.F. and Choi, J.H.: *Design of a high-speed high-power density switched reluctance motor*, Journal of Power Electronics, The Korean Inst. of Power Electronics (KIPE), 1, No. 1, 2000, pp. 19 - 25.
25. Seto, D., Sun, F. GIERAS, J.F. and Hootsmans, N.A.M.: *Single electronic drive controlling two synchronous motors via modified vector control*, Journal of Power Electronics, The Korean Inst. of Power Electronics (KIPE), 5, No. 1, 2003, pp. 19–25.
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27. GIERAS, J.F. and Jonsson, U.: *Design of a high speed permanent magnet brushless generators for microturbines*, Electromotion, 2005, No. 2/3, pp. 55–60.
28. GIERAS, J.F.: *Selected technical aspects of Tu-154M Smolensk air crash on April 10, 2010*, Mathematical and Computational Forestry & Natural-Resource Sciences (MCFNS), 5, No. 1, 2013, pp. 38–70

5.3 Refereed Journals cited by Current Papers in E&E Engineering, UK

1. GIERAS J.: *Two-phase servo motors* (in Polish: Dwufazowe silniki wykonawcze), *Wiadomosci Elektrotechniczne*, Warsaw, Poland, 1973, No. 7, pp. 243 – 247.
2. GIERAS J.: *The selfbraking of two-phase servo motors with solid ferromagnetic rotor* (in Polish: Samohamownosc dwufazowych silnikow indukcyjnych o masywnym wirniku ferromagnetycznym), *Rozprawy Elektrotechniczne*, Polish Academy of Sciences, Warsaw, Poland, 20, No. 2, 1974, pp. 397 – 408.
3. GIERAS J.: *Equivalent parameters of a finite dimension ferromagnetic bar being placed in traveling magnetic field* (in Polish: Parametry zastepcze preta ferromagnetycznego o skonczonych wymiarach w liniow przemieszczajacym sie polu magnetycznym), *Rozprawy Elektrotechniczne*, Polish Academy of Sciences, Warsaw, Poland, 20, 1974, No. 4, pp. 503 – 521.
4. GIERAS J.: *Induction motors with solid ferromagnetic rotor* (in Polish: Silniki indukcyjne o masywnym wirniku ferromagnetycznym), *Wiadomosci Elektrotechniczne*, Warsaw, Poland, 1974, No. 4, pp. 78 – 80.
5. GIERAS J.: *Calculation of two-phase induction servo motors with double-layer solid rotor* (in Polish: Obliczenia elektromagnetyczne indukcyjnych silnikow wykonawczych o masywnym wirniku dwuwarstwowym), *Archiwum Elektrotechniki*, Polish Academy of Sciences, Warsaw, Poland, 23, No. 3, 1974, pp. 569 – 588; and *Elektryczne maszyny i aparaty*, Soviet Union, 1975, No. 7, pp. 8 – 17.
6. GIERAS J.: *Calculation of main dimensions of two-phase servo motors* (in Polish: Obliczanie wymiarow glownych dwufazowych silnikow wykonawczych), *Zeszyty Naukowe Polit. Pozn. "Elektryka"*, Poznan, Poland, 1974, No. 14, pp. 61 – 77.
7. GIERAS J.: *Performance calculation for two-phase servo motor with solid ferromagnetic rotor and circular rotating magnetic field* (in Polish), *Zeszyty Naukowe Polit. Pozn. "Elektryka"*, Poznan, Poland, , 1974, No. 14, pp.43 – 60.
8. GIERAS J.: *Problems faced in designing two-phase servo motors with solid ferromagnetic rotor* (in Polish: Zagadnienia wystepujace przy projektowaniu dwufazowych silnikow wykonawczych o masywnym wirniku ferromagnetycznym), *Prace Naukowe Instytutu Ukkladow Elektromaszynowych Polit. Wrocl.*, Wroclaw, Poland, 1974, No. 17, pp. 25 – 55.
9. GIERAS J., Jozefowicz W.: *Electrodynamic forces in induction machine between stator and secondary with nonlinear and distributed parameters*(in Polish), *Prace Naukowe Polit. Szczecinskiej*, Szczecin, Poland, 1975, No. 37, pp. 37 – 45.
10. Dabrowski M., GIERAS J., Hebenstreit J.: *Rotor of special construction for a small induction motor* (in Polish: Silnik indukcyjny malej mocy o wirniku konstrukcji specjalnej), *Przeglad Elektrotechniczny*, Warsaw, Poland, 1975, No. 12, pp. 495 – 497.
11. GIERAS J., Jozefowicz W.: *Coefficients of linearization for calculation of impedance and power losses in screened ferromagnetic plates* (in Polish: Wspolczynniki linearyzujace do obliczen impedancji i strat mocy w ekranowanych plytach ferromagnetycznych), *Rozprawy Elektrotechniczne*, Polish Academy of Sciences, Warsaw, Poland, 22, No. 2, 1976, pp. 269 – 286.
12. GIERAS J.: *Analysis of electromagnetic field in ferromagnetic bodies taking into account variable magnetic permeability and hysteresis losses* (in Polish: Analiza pola elektromagnetycznego w srodowisku ferromagnetycznym z uwzglednieniem zmiennej przenikalnosci magnetycznej i strat mocy na przemagnesowywanie), *Archiwum Elektrotechniki*, Polish Academy of Sciences, Warsaw, Poland, 25, No. 4, 1976, pp. 1035 – 1053.
13. GIERAS J., Frydrychowicz G.: *Computer aided design of single-phase shaded-pole induction motors* (in Polish: Projektowanie silnikow indukcyjnych jednofazowych o fazie pomocniczej zwartej wspomagane maszyna cyfrowa), *Przeglad Elektrotechniczny*, Warsaw, Poland, 1977, No. 7, pp. 299 – 302.
14. GIERAS J.: *Theory of induction machines with double-layer secondary*, *Rozprawy Elektrotechniczne*, Polish Academy of Sciences, Warsaw, Poland, 23, No. 3, 1977, pp. 577 – 631.

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18. GIERAS J., Krzyminski J., Smoczyk J.: *Influence of ripple input voltage on sparkless commutation zone of d.c. motors* (in Polish: Wplyw tetnien napiecia zasilajacego na obszar komutacji beziskrowej silnikow pradu stalego), *Przegląd Elektrotechniczny*, Warsaw, Poland, 1978, No. 12, pp. 525 – 528.
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20. GIERAS J.: *Special Purpose Electrical Machines - Conference organized on the occasion of the 60th anniversary of the Association of Polish Electrical Engineers* (in Polish: Maszyny Elektryczne Specjalne - konferencja zorganizowana z okazji 60-lecia Stowarzyszenia Elektrykow Polskich), *Przegląd Elektrotechniczny* (Electrical Review), Warsaw, Poland, 1979, No. 5, pp. 195 – 196.
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5.4 Other Journals

1. GIERAS J.F.: *Drives technology in perspective, Part 1: basic variable-speed drive theory*, Vector, Republic of South Africa, 1993, No. 9, pp. 12 – 15; Part 2: *Speed control of induction, synchronous, and electronically commutated motors*, Vector, Republic of South Africa, 1993, No. 11, pp. 8 – 11.
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Summary

Books 11

Chapters in books 2

Textbooks 2

Students' course manuals 3

Papers in refereed journals 92

Papers in other journals 9

Conference proceedings 145

Total number of papers **246**

Patents 60 (46 US Patents, 10 EP Patents, 4 Polish Patents)