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Publication list

Monographs

1. Determination of fatigue life distributions of constructional parts by means of computer simulation method taking into account the hypothesis of constant fatigue lines.
PhD-Thesis, Mechanical Engineering Faculty, Technical University of Gdańsk, Poland, November 1990.
2. The graph-based methodology as an artificial intelligence aid for mechanical engineering design, Habilitation-thesis, Publishing House of the University of Bielsko-Biała, Bielsko-Biała, Poland, 2010.

Book chapters

1. W. Czader, M. Czernek, J. Kukuczka, **S. Zawiślak**: Variants of basic structural components and calculations of toothed elements of geared motors and reduces in the LOGOCAD system. 1994 International Gearing Conference, Ed.: J.N. Fawcett, Mechanical Engineering Publications Ltd., MEP – London 1994, s. 227-237. Second edition: July 2005, John Wiley & Sons Inc., (ISBN10: 0852989180, ISBN13: 9780852989180).
2. J. Wojnarowski, **S. Zawiślak**: Evolutionary algorithms for graph partitioning problem (in Polish). Polioptymalizacja i komputerowe wspomaganie projektowania, Editors: W. Tarnowski, T. Kiczkowiak, WN-T, Warszawa 2002, pp. 277-286.
3. J. Wojnarowski, K. Sikora, J. Kopeć, **S. Zawiślak**: Graph-based models of planetary gears (in Polish), Teoria Maszyn i Mechanizmów, Editors: J. Wojnarowski, T. Uhl., AGH, Kraków, 2004, s. 311-317.
4. **S. Zawiślak**: Graph-based methodology as a support of conceptual design of planetary gears, Teoria Maszyn i Mechanizmów, Editors: J. Wojnarowski, M. Galicki, Oficyna Wydawnicza Uniwersytetu Zielonogórskiego, 2006, T.1, s. 405-411.
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1. J. Wojnarowski, **S. Zawiślak**: Modeling of mechanical system by means of matroid. Mechanism and Machine Theory, Vol. 36, No 6, 2001, pp.717-724.
2. J. Drewniak, **S. Zawiślak**: Synthesis of planetary gears by means of artificial intelligence approach especially graph-theoretical modeling, Solid State Phenomena, Vol. 164 (2010), pp. 243-248.
3. J. Drewniak, **S. Zawiślak**: Analysis and Modification of Planetary Gears Based upon Graph-theoretical Models. Transactions of the Universities of Košice, Slovakia. No 2/2009, pp. 84-87.

4. **S. Zawiślak**, D. Matusiak: „Multi-objective Evolutionary Design of Trusses Using Graph-based Method for Stress Calculation”, Transactions of the Universities of Košice, Slovakia, No 3/2009, s.181-184.
5. J. Drewniak, **S. Zawiślak**: Kinematical and dynamical analysis of closed kinematical chains using graphs and profile equations, **PAMM – Proceedings on: Anwendung Mechanik und Mathematik**, 2010, Vol. 9, (1), pp. 547-548.
(on line: <http://www3.interscience.wiley.com/journal/91016652/home>)
6. J. Drewniak, J. Kopeć, **S. Zawiślak**: Graph-based analysis of planetary gears, ACC Journal, Liberec, Czech Republic, XVII, 1/2011, seria A, pp. 15-24.

Papers in domestic scientific magazines (of international meaning)

1. J. Wojnarowski, J. Kopeć, **S. Zawiślak**: Graph and Gears, Journal of Theoretical and Applied Mechanics, 2006, Vol. 44, pp. 139-162.
2. J. Drewniak, **S. Zawiślak**: Linear-graph and contour-graph-based models of planetary gears, Journal of Theoretical and Applied Mechanics, 2010, Vol. 48, pp. 415-433.
3. J. Szala, **S. Zawiślak**: Application of computer simulation method for determination a distribution type of construction parts fatigue life, Archive of Mechanical Engineering, 1990, Vol. 37, No. 3, pp.145–167.
4. J. Wojnarowski, **S. Zawiślak**, S. Kozik, G. Frej: K-partitioning of graph by means of evolutionary algorithm. Operations Research and Decisions, No. 3, 2003, pp. 91-107.
5. **S. Zawiślak**, G. Frej: An influence of parameters of the evolutionary algorithm applied for the graph k-partitioning problem. Studia Informatica, 2003, Vol. 24(4), pp. 165-187.
6. J. Drewniak, **S. Zawiślak**: Comparison of graph-based methods of kinematical analysis of planetary gears, Acta Mechanica et Automatica (Białystok), Vol. 4(4), 2010, ss. 14-18.
7. J. Drewniak, **S. Zawiślak**: Graph theory based methods used for modeling of planetary gears (in Polish), Czasopismo Techniczne/Mechanika, Technical University of Kraków, Poland, 2010, Z. 1-M, pp. 13-21.
8. Z. Dąbrowski, J. Drewniak, K. Stańco, **S. Zawiślak**: Computer aided analysis of compound planetary gear, Mechanik, 2010, 7, pp. 93-100.

Papers in other domestic scientific magazines

1. J. Szala, B. Przybyliński, **S. Zawiślak**: Chosen problems of an analysis of fatigue loads of machine parts (in Polish), Wybrane zagadnienia z analizy obciążeń zmęczeniowych elementów maszyn, ZN University of Technology and Agriculture in Bydgoszcz, 1992, nr 173, Mech. nr 35, s.15-26.
2. A. Pagacz, G. Raidl, **S. Zawiślak**: Evolutionary approach to constrained minimum spanning tree problem - commercial software based application. Prace Naukowe. Elektronika, Warsaw University of Technology, Z. 156, 2006, pp. 331-341.
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4. **S. Zawiślak**, D. Duraj: Multi-objective problem of the shortest path. ZN Technical University in Koszalin, Poland, 2005, No. 34, pp. 201-208.
5. J. Wojnarowski, **S. Zawiślak**: Mechanical system analysis by means of generalized network embeded on matroids, ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2002, Ser.3, Z. 4, pp. 104-124.

6. **S. Zawiślak**: Exemplary graphs' data mining and visualization for evolutionary algorithms application. ZN, University of Bielsko-Biała, 2004, Ser.6, Z. 17, pp. 157-168.
7. **S. Zawiślak**, J. Wojnarowski, A. Jagosz: Comparison of graph representation methods for graph partitioning problem. Implementations in some algorithmic languages, ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2002, Ser.3, Z. 4, pp. 90-103.
8. **S. Zawiślak**, J. Rysiński: Object-oriented drawing of constructional components in Delphi and AutoLISP, ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2004, Ser.6, Z. 17, pp. 169-178.
9. J. Wojnarowski, **S. Zawiślak**: Application of matroids in chosen problems of modeling of mechanical systems (in Polish), ZN Technical University in Koszalin, Poland, 2000, No. 27, pp. 357-364.
10. J. Wojnarowski, **S. Zawiślak**: Optimization algorithms for chosen graph theory problems (in Polish), ZN Technical University in Koszalin, Poland, 2001, No. 28, pp. 429-435.
11. S. Zawiślak, Ł. Kuś: Model of investment in bonds – based upon game theory; analysis of influence of the parameters (in Polish), *Ekonomika I Humanistyka*, Special Issue, 2003, No 1a, pp. 89-116.
12. J. Wojnarowski, K. Sikora, **S. Zawiślak**: Analysis existence of redundant wheels in planetary gears – based upon graph-theory approach (in Polish), ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2003, Ser.5, Z. 8, pp. 287-292.
13. **S. Zawiślak**: Design of springs – integrated approach, ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2003, Ser.5, Z. 8, pp. 293-300.
14. J. Wojnarowski, **S. Zawiślak**, S. Kozik: Evolutionary algorithm for k-partiniong of graph, ZN Technical University in Koszalin, Poland, 2003, No. 32, pp. 143-150.
15. **S. Zawiślak**, P. Skowron: Evolutionary approach to TSP – analysis of influence of the parameters (in Polish), *Economics and Social Issues Series*, 2004, Vol. 1(2), pp. 5-32.
16. **S. Zawiślak**, K. Sikora: Analysis of planetary gears by means of graphs (in Polish), ZN Budowa i Eksploatacja Maszyn, University of Bielsko-Biała, 2004, Ser.6, Z. 15, pp. 71-80.

Proceedings papers of international conference (taking place abroad)

1. J. Szala, **S Zawiślak**: Probabilistic approach to fatigue life computation by means of constant damage lines hypothesis, *Proceedings of The Ninth International Colloquium on Mechanical Fatigue of Metals*, Smolenice-Bratysława, Slovakia, 1987.
2. J. Szala, **S Zawiślak**: Experimental verification of fatigue life distribution determination calculation method based upon constant damage lines hypothesis, *Proceedings of The X-th International Colloquium on Mechanical Fatigue of Metals*, Dresden, Germany, 1989.
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8. **S. Zawiślak**: Data mining and visualization of 3D graphs for evolutionary computations. GAMM 2004: 75th Annual Scientific Conference : book of abstracts, Dresden, Technische Universitat Dresden, Germany, 2004, p.239.
9. J. Wojnarowski, **S. Zawiślak**: Evolutionary approach to graph theory problems. GAMM 2004 : 75th Annual Scientific Conference : book of abstracts, Dresden, March 21-27, 2004, Technische Universitat Dresden, Germany, p.238.
10. **S. Zawiślak**, L. Szypuła, M. Mysliwiec, A. Jagosz: Some applications of graph transformations in modelling of mechanical systems, 7th International Workshop on Graph Transformation and Visual Modelling Techniques (GT-VMT Budapeszt 2008), Hungary, pp. 332-345.
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12. J. Drewniak, **S. Zawiślak**: Synthesis of planetary gears by means of artificial intelligence approach especially graph-theoretical modelling, The 5 th International Conference Mechatronic Systems and Materials (MSM 2009) : abstracts, Vilnius, Lithuania, 22-25 October 2009, Vilnius, Lithuania.

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1. J. Wojnarowski, **S. Zawiślak**: Modeling of mechanical systems by means of matroids. Graphs and Mechanics: Second International Conference, Proceedings, Politechnika Śląska, Gliwice 1999, pp. 55-56.
2. J. Drewniak, W. Czader, **S. Zawiślak**: Computer aided design of cylindrical and bevel modular gear size ranges, Design methods for practice, Editors: R. Rohatyński, P. Poślednik; University of Zielona Góra Faculty of Management, Polish Academy of Science Committee of Mechanical Engineering. Oficyna Wydawnicza Uniw. Zielonogórskiego, Zielona Góra, 2006, pp.193- 196.
3. J. Drewniak, J. Kopec, **S. Zawiślak**: Methodology of design of planetary gears by means of graph-based models, W: Innovation by design / ed. Ryszard Rohatyński ; Wrocław University of Technology. Department of Mechanical Engineering. - Wrocław : Instytut Technologii Maszyn i Automatyizacji Politechniki Wrocławskiej, 2011. - ISBN 83-917677-4-4 . pp. 19-22.

Talks on international conferences in Poland

- a. **Workshop on Graphs**, Krynica 2000;
Application of Graphs and Matroids in Modeling of Mechanical Systems
- b. **Workshop on Graphs**, Krynica 2001;
Application of evolutionary algorithms to the problem of graph partitioning
- c. **Workshop on Graphs**, Krynica 2002;
K-partitioning of graphs – evolutionary approach

- d. **Workshop on Graphs**, Krynica 2003;
EA for graph theory problems - data structures and operators.

Conference papers – Polish domestic conferences

1. J. Szala, **S. Zawiaślak**: Komputerowa symulacja procesu kumulacji uszkodzeń zmęczeniowych - metoda linii stałych uszkodzeń. Streszczenia, Środowiskowa Sekcja Podstaw Eksploatacji KBN PAN. Pieczyńska, czerwiec 1991.
2. J. Szala, **S. Zawiaślak**: Model zmienności własności zmęczeniowych elementów konstrukcyjnych zastosowany do wyznaczania rozkładu trwałości zmęczeniowej dla tych elementów - metodą symulacji komputerowej. ZN Politechnika Rzeszowska, 1991 nr 79 Mech. z.27, s. 309-310.
3. J. Drewniak, **S. Zawiaślak**: Probabilistyczne ujęcie hipotezy efektywnych naprężeń stycznych. XV Seminarium Międzysekcyjnego Zespołu Zmęczenia i Mechaniki Pęknięcia Materiałów i Konstrukcji: Program, skróty referatów, / [organizatorzy] Międzysekcyjny Zespół Zmęczenia i Mechaniki Pęknięcia Materiałów i Konstrukcji Komitetu Budowy Maszyn Polskiej Akademii Nauk, Katedra Podstaw Konstrukcji Maszyn Akademii Techniczno-Rolniczej. Wydaw. Uczeln. AT-R, Bydgoszcz 1994, s.19.
4. J. Kukuczka, **S. Zawiaślak**, L. Zębaty: Optymalizacja typoszeregu reduktorów z uwzględnieniem normy ISO 6336 do obliczeń wytrzymałościowych. Polioptymalizacja i komputerowe wspomaganie projektowania Kołobrzeg '95: materiały XIII Ogólnopolskiej Konferencji, Koszalin - Kołobrzeg, 06'95, WSI Koszalin, 1995. s. 33-34.
5. J. Wojnarowski, **S. Zawiaślak**, I. Ziemska: Zastosowanie grafów w dekompozycji zadania optymalizacji. Application of graphs in decomposition of optimization problem, Polioptymalizacja i komputerowe wspomaganie projektowania - Mielno'99, Materiały XVII ogólnopolskiej konferencji, Politechnika Koszalińska, Komitet Budowy Maszyn PAN. Koszalin, 1999, s.35-36.
7. J. Wojnarowski, **S. Zawiaślak**: Matroidowy model układu mechanicznego. XL Sympozjon PTMTS "Modelowanie w Mechanice": Streszczenia referatów, [organizatorzy] Polskie Towarzystwo Mechaniki Teoretycznej i Stosowanej Oddział Gliwice, Komitet Mechaniki PAN, Katedra Mechaniki Stosowanej Politechnika Śląska w Gliwicach. Wiśła, 2001, s.281-282.
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