

CZESŁAW SZYMCZAK



Ph. D, D.Sc., Full Professor

The Head of Structural Mechanics Department (1996-2008),
Faculty of Ocean Engineering and Ship Technology,
Gdansk University of Technology, Poland.

Coordinator of Centre of Urban Constructions and Rehabilitation (2001-2004)

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1. EDUCATION

- **B.Sc.:** 1967, Gdansk University of Technology, Faculty of Civ. Engng. , Gdansk, Poland
- **Ph. D:** 1972, Gdansk University of Technology, Faculty of Civ. Engng. , Gdansk, Poland
- **D. Sc (Habilitation):** 1981, Gdansk University of Technology, Faculty of Civ. Engng. , Gdansk, Poland.
- **Visiting professor** at University of Windsor, Civil Engineering Department, Canada (1991-1992)

2. CAREER

- 1961 - 1967: Student of Civil Engng. Faculty., Gdansk University of Technology, (B.Sc – 1967).
- 1967 - 1972: Assistant Prof., Dept. Struct. Mechanics, Civil Engng. Faculty, Gdansk University of Technology.

- 1972- 1981: Adjunct Prof., Dept. Struct. Mechanics, Civil Engng. Faculty, Gdansk University of Technology (D. Sc – 1981).
- 1981-1992: Associate Prof., Dept. Struct. Mechanics, Civil Engng. Faculty, Gdansk University of Technology.
- 1990: Member of Structural Mechanics Div., Committee of Civil Engineering, Polish Academy of Sciences.
- 1991-1992: Visiting Prof., Civil Engng. Dept., University of Windsor, Windsor, Canada.
- 1992- 1996: Professor, Dept. Struct. Mechanics, Civil Engng. Faculty, Gdansk University of Technology.
- 1996-: Full Professor, Head of Struct. Mechanics Department, Civil Engng. Faculty, Gdansk University of Technology.
- 2001-2004: Coordinator of Centre of Urban Constructions and Rehabilitation, Centre of Excellence in the Frame of V European Program “City of Tomorrow”,
- 2006 -: Full Prof.; Theory and Ship Design; Faculty of Ocean Engineering and Ship Technology, Gdansk University of Technology.
- The member of the Structural Mechanics and Material Division of Committee of Civil Engineering of Polish Academy of Sciences since 1999,
- The member of General Council of Polish Society of Theoretical and Applied Mechanics (1992-2004)
- The chairman of Gdansk Branch of Polish Society of Theoretical and Applied Mechanics (1992-2006)
- The honorary member of Polish Society of Theoretical and Applied Mechanics,

3. TEACHING COURSES:

- Theoretical Mechanics
- Mechanics of Ship Structures
- Strength of Material
- Mechanics of Structures
- Optimal Design of Structures

4. RESEARCH INTEREST AND SPECIALISATION

- Thin-walled structures
- Dynamic and vibration of structures

- Optimal design of structures
- Stability of structures
- Piles
- Post-buckling behavior of structures
- Biomechanics
- Sensitivity analysis and its applications
- Identification of structure models
- Rehabilitation of historic buildings

5. BOOKS (monographs and text books)

1. **Szymczak Czesław**, *Elements of design theory* (Elementy teorii projektowania), PWN, 1998, (in Polish).
2. **Szymczak Czesław & Śmietański Maciej (eds.)**, *Selected problems of laparoscopic ventral hernia repair – modeling and simulation*, α -medica press, 2012.
3. **Szymczak Czesław, Kreja Ireneusz, Mikulski Tomasz, Kujawa Marcin**, *Sensitivity analysis of beams and frames made of thin-walled members*, Gdansk University of Technology Publishers, 2003.

6. REFEREEING ACTIVITY

6. Reviewer for the following ISI international journals

1. Applied Mechanics Review
2. Computers and Structures
3. Engineering Structures
4. Journal of Theoretical and Applied Mechanics

7. PUBLICATIONS: 134 publications (46 papers in ISI (SCI, SCIE listed journals)), the most important:

1. **Szymczak Czesław, Kujawa Marcin** (2017). *Buckling of thin-walled columns accounting for initial geometrical imperfections*, International Journal of Non-linear Mechanics, Vol. 95, pp. 1-9.
2. **Szymczak Czesław, Kujawa Marcin** (2017). *Local buckling of thin-walled channel flange made of aluminum alloy*, Conference on Applied Mechanics, AIP Conf. Proceedings, pp. 1-8.
3. **Szymczak Czesław, Kujawa Marcin** (2017). *Distortional buckling of thin-walled columns of closed cross-section*, Thin-Walled Structures, Vol. 113, pp. 111-121.

4. **Szymczak Czesław, Lubowiecka Izabela, Szepietowska Katarzyna, Tomaszewska Agnieszka** (2017). *Two-criteria optimization problem for ventral hernia repair*, Computer Methods in Biomechanics and Biomedical Engineering, Iss. 7, pp. 760-769.
5. **Szymczak Czesław, Kujawa Marcin** (2016). *On local buckling of cold-formed member*, Thin-Walled Structures, Vol. 106, pp. 93-101.
6. **Lubowiecka Izabela, Szepietowska Katarzyna, Szymczak Czesław, Tomaszewska Agnieszka** (2016). *A preliminary study on the optimal choice of an implant and its orientation in ventral hernia repair*, Journal Theoretical and Applied Mechanics, Vol. 54, pp. 411-421.
7. **Kujawa Marcin, Szymczak Czesław** (2014). *Numerical and experimental investigation of rotational stiffness of zed-purlins connection with sandwich panels*, Thin-Walled Structures, Vol. 75, pp. 43-57.
8. **Tomaszewska Agnieszka, Lubowiecka Izabela, Szymczak Czesław, Śmietański Maciej, Meronk Błażej, Kłosowski Paweł, Bury Kamil** (2013). *Physical and mathematical modelling of implant-fascia system in order to improve laparoscopic repair of ventral hernia*, Clinical Mechanics, Vol. 28, pp. 743-751.
9. **Tomaszewska Agnieszka, Szymczak Czesław** (2012). *Identification of the Vistula Mounting tower model using measured modal data*. Engineering Structures, Vol. 42, pp. 342-348.
10. **Śmietański Maciej, Tomaszewska Agnieszka, Lubowiecka Izabela, Szymczak Czesław** (2012). *Biomechanics of the front abdominal wall as a potential factor leading to recurrence with laparoscopic ventral hernia repair*, Surgical Endoscopy and other Interventional Techniques, Vol. 26, pp. 1461-1467.
11. **Szymczak Czesław** (2011). *Stability and initial post-buckling behaviour of frame system with vertical bracings*, Thin-Walled Structures, Vol. 49, pp. 669-673.
12. **Szymczak Czesław, Lubowiecka Izabela, Tomaszewska Agnieszka, Śmietański Maciej** (2009). *Mathematical study of a tissue-implant connection in ventral hernia repair in a context of the system's parameters*, PAMM, Iss. 1, pp. 167-168.
13. **Szymczak Czesław, Lubowiecka Izabela, Tomaszewska Agnieszka, Śmietański Maciej** (2009). *Modeling of the fascia-mesh system and sensitivity analysis of a junction force after a laparoscopic ventral hernia repair*, Journal of Theoretical and Applied Mechanics, Vol. 48, pp. 933-950.
14. **Bożena Budkowska, Czesław Szymczak** (1995): *The analysis of axially loaded piles with account for its varying length*. Computers and Structures, vol. 54, p.1149-54.
15. **Bożena Budkowska, Czesław Szymczak** (1995): *On first variation of extremum values of displacements and internal forces of laterally loaded piles*. Computers and Structures, vol. 57, p.303-7.
16. **Bożena Budkowska, Czesław Szymczak** (1994): *Effect of varying length of pile undergoing torsion*. Computers and Structures, vol. 52, p.931-38.

17. **Bożena Budkowska, Czesław Szymczak** (1993): *Sensitivity analysis of piles undergoing torsion*. Computers and Structures, vol.48, p.827-34.
18. **Bożena Budkowska, Czesław Szymczak** (1993): *Sensitivity analysis of axially loaded piles*. Archives of Civil Engineering, vol. 39, p.83-105.
19. **Bożena Budkowska, Czesław Szymczak** (1992): *Sensitivity analysis of thin-walled I-beams resting on elastic foundation*. Journal of Engineering Mechanics, ASCE, vol.118, No.6., p.1239-48.
20. **Bożena Budkowska, Czesław Szymczak** (1992): *Sensitivity analysis of laterally loaded piles by means of adjoint method*. Computers and Geotechnics, vol. 13, p. 37-49.
21. **Bożena Budkowska, Czesław Szymczak** (1992): *Sensitivity analysis of critical torsional buckling load of thin-walled I-columns resting on elastic foundation*. Thin-Walled Structures, vol. 14, p. 37-44.
22. **Bożena Budkowska, Czesław Szymczak** (1992): *Sensitivity analysis of free torsional vibration frequencies of thin-walled I-beam resting on elastic foundation*. Thin-Walled Structures, vol.13, p. 399-408.
23. **Tomasz Mikulski , Czesław Szymczak** (1990): *On Post-Buckling Behavior of Columns with Cubic Constitutive Equations*. Int. Journal of Non-Linear Mechanics, vol.25, p.117-21.
24. **Tomasz Mikulski, Czesław Szymczak** (1989): *Non-Linear Model for the Buckling and Post-Buckling Analysis of Columns*. Modelling, Simulation and Control, B, AMSE Press, vol.12, p.29-38.
25. **Jacek Chróścielewski, Czesław Szymczak** (1987): *Optimal design of plates resting on elastic tensionless foundation*. Modelling, Simulation and Control, C, AMSE Press, vol.11, p.29-37.
26. **Zofia Matulewicz, Czesław Szymczak** (1985): *Optimal design of thin-walled I beams undergoing torsion*. Thin-Walled Structures, vol.3, p.135-44.
27. **Czesław Szymczak** (1984): *Optimal design of thin-walled I beams for a given natural frequency of torsional vibrations*. Journal of Sound and Vibration, vol.97, p.137-44.
28. **Czesław Szymczak** (1983): *Optimal design of thin-walled I beams for extreme natural frequency of torsional vibrations*. Journal of Sound and Vibration, vol.97, p.235-41.
29. **Czesław Szymczak** (1983): *On torsional buckling of thin-walled I columns with variable cross-section*. Int. Journal of Solids Structures, vol.19, p.509-18.
30. **Czesław Szymczak** (1980): *Buckling and post-buckling behavior of thin-walled I columns*. Computers and Structures, vol.11, p.481-87.

8. SUPERVISIONS FOR PHD STUDENTS: 8

- 1) Bożenna Kierus , thesis title: “ Analysis of change of longitudinal road profile due to traffic loads and estimation of its influence on dynamic vehicle loads ” Gdansk University of Technology (completed in 1988)
- 2) Witold Knabe, thesis title: "Static analysis of tear connections with geometrical imperfections ", Gdansk University of Technology (completed in 1992)
- 3) Tomasz Mikulski, thesis title: "Sensitivity analysis of space frames made of solid members", Gdansk University of Technology (completed in 1997)
- 4) Piotr Iwicki Piotr, thesis title: "Sensitivity analysis problems of thin-walled members with bisymmetric cross-sections subject to static loadings", Gdansk University of Technology (completed in 1997)
- 5) Marcin Kujawa, thesis title: “Statics and sensitivity analysis of grids made of thin-walled members”, Gdansk University of Technology (completed in 2007)
- 6) Agnieszka Tomaszewska, thesis title: “ Diagnostic of buildings and identification its one-dimensional models using ambient excitations” Gdansk University of Technology (completed in 2007)
- 7) Rafał Pankau, thesis title: “Optimal design of frames accounting for stability conditions”, Gdansk University of Technology (completed in 2010)
- 8) Włodzimierz Werechowski, thesis title: “Static and strength analysis cold formed zed purlins”, Gdansk University of Technology (completed in 2010)

10. RESEARCH GRANTS

1. Grant of National Committee of Science, “Sensitivity analysis of beams and frames made of thin-walled members”, (2000-2003).
2. Project of Centre of Excellence “Centre of Urban Construction and Rehabilitation” in the frame of V European Program of “City of Tomorrow” , (1999-2002).
3. Grant of Innovative Economy Regional Operational Program – consortium of Medical University of Gdansk and Gdansk University of Technology HAL2010 “Optimization of laparoscopic repair of ventral hernia” (2009-2012)

11. HONOURS AND AWARDS

- 24 awards granted by Rector of Gdansk University of Technology (1972-2015)
- Medal of National Committee of Education, 1999
- Award of Ministry of Science and Higher Education, 1983
- Knight’s Cross of the Order of the Rebirth of Poland, 2000
- Award of Ministry of Infrastructure, 2003