

Curriculum Vitae

Update: May 9, 2024

Personal Information

- **Name:** Łukasz Płociniczak
- **Date and place of birth:** January 8th, 1986, Brzeg, Poland
- **e-mail address:** lukasz.plociniczak@pwr.edu.pl

Qualifications

- **2018:** Wrocław University of Technology, Faculty of Pure and Applied Mathematics
 - **October 2018:** *Habilitation* in Mathematical Sciences
- **2011-2013:** Wrocław University of Technology: Ph.D studies in Mathematics
 - **February 2013:** Ph.D *Summa Cum Laude*. Thesis title: *Mathematical Analysis of a New Corneal Topography Model*. Supervisor: prof. dr hab. Wojciech Okrański
- **2006-2011:** Wrocław University of Technology: Master studies in Mathematics,
 - Individual Curriculum.
 - **June 2011:** M.Sc *Summa Cum Laude*. Thesis title: *Mathematical Models of the Corneal Topography*. Supervisor: prof. dr hab. Wojciech Okrański
- **2004-2007:** Wrocław University of Technology: studies in Electronics and Telecommunication

Affiliations

- **2019–:** Wrocław University of Science and Technology, Faculty of Pure and Applied Mathematics, *Associate Professor*
- **2015–2019:** Wrocław University of Science and Technology, Faculty of Pure and Applied Mathematics, *Assistant Professor*
- **2014–2015:** Wrocław University of Technology, Faculty of Fundamental Problems of Technology, *Assistant Professor*
- **2013–2014:** Wrocław University of Technology, Faculty of Fundamental Problems of Technology, *Assistant*

Honors and Awards

- **2019:** Dionizy Smoleński Special Prize for outstanding achievements in science, Wrocław University of Science and Technology
- **2018:** Robert Bartoszyński Scholarship, IMPAN
- **2014, 2016, 2017:** Prize of the Rector of Wrocław University of Technology
- **2015-2018:** Scholarship for the Excellent Young Researchers, Polish Ministry of Science and Higher Education
- **2014-2015:** Scholarship "Młoda Kadra 2015" co-financed by European Union within European Social Fund
- **2013-2014:** Scholarship "Młoda Kadra" co-financed by European Union within European Social Fund
- **2013:** First Prize in the contest for an outstanding scientific paper concerning mathematics and its applications, Center of Applied Mathematics, Gdansk University of Technology

- **2012:** Prize of the Dean of the Faculty of Fundamental Problems of Technology, Wrocław University of Technology
- **2011–2013:** Scholarship for the Excellent Ph.D Students
- **2011–2013:** Scholarship for qualitative funding of the Ministry of Science and Higher Education
- **2011:** Third Prize in the Contest for the Best Student Paper in Applied Mathematics and Probability (Polish Mathematical Society)
- **2010–2011:** Scholarship of the Ministry of Science and Higher Education for Academic Achievements

Research Grants

- **2021–2026:** Grant holder, *Numerical methods for nonlocal and nonlinear parabolic equations*, NCN 2020/38/E/ST1/00153.
- **2016–2018:** Grant holder, *Nonlinear anomalous diffusion equations. Existence, uniqueness, estimates and numerical methods*, NCN 2015/17/D/ST1/00625.
- **2015:** Investigator, *Strategic Partnership for the Development of Training Workshops and Modeling Clinic for Industrial Mathematics (MODCLIM)*, Erasmus+, Grant Agreement number: 2014-1-ES01-KA203-004956
- **2015:** External expert, *Mikroskop skaningowy na wirach optycznych*, NCN 2013/11/B/ST7/01155.
- **2013–2014:** Grant holder, *Inverse Problems in a Nonlinear Partial Differential Equation*, NCN 2012/05/N/ST1/02860.

PhD Students

1. **Mateusz Światała**, *Nonlinear differential equation modelling the dynamics of capillary rise*, defence on 17th of March 2022
2. **Zofia Wróblewska**, *Elastic inverted pendulum as a mathematical model of running*, submitted (defense in 2024).
3. **Bogna Jaszczak**, *Models associated with lymph flow*, ongoing.
4. **Grzegorz Krzyżanowski** (co-supervisor), *Fractional models and their applications in finance*, defence on 18th of October 2022.

Scientific visits and schools

Long stays

- 16 I – 8 II 2024: University of Las Palmas de Gran Canaria, Hiszpania, postdoc, invitation of Prof. Juana Rocha Martin and Kishin Sadarangani
- 16 II – 16 III 2022: University of Las Palmas de Gran Canaria, Hiszpania, postdoc, invitation of Prof. Juana Rocha Martin and Kishin Sadarangani
- 17-19 XI 2014: Weierstrass Institute for Applied Mathematics and Stochastics (WIAS), Berlin, Germany, invitation of Prof. D. Hömberg

Foreign visits

26. 11–20 VII 2023: University of Las Palmas de Gran Canaria, Spain, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
25. 15–22 IV 2023: University of Las Palmas de Gran Canaria, Spain, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
24. 11–18 II 2023: Universidad de Málaga, Spain, invitation of Prof. Maria Lopez Fernandez

23. 08–14 XII 2022: University of Las Palmas de Gran Canaria, Spain, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
22. 13–19 XI 2022: Universidad Autónoma de Madrid, Spain, invitation of Prof. Félix del Teso
21. 16–22 X 2022: Universidad de Málaga, Spain, invitation of Prof. Maria Lopez Fernandez
20. 08–13 V 2022: Universidad Autónoma de Madrid, Spain, invitation of Prof. Félix del Teso
19. 19–26 X 2021: University of Las Palmas de Gran Canaria, Hiszpania, postdoc, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
18. 18–22 XI 2019: University of Málaga, Málaga, Spain, scientific visit, invitation of Prof. Carlos Parés
17. 26–30 XI 2018: University of Santiago de Compostela, Santiago de Compostela, Spain, lecturer in a Erasmus+ project
16. 30 I - 13 II 2018: University of Las Palmas de Gran Canaria, Spain, post-doc, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
15. 9–14 VII 2017: University of Santiago de Compostela, Santiago de Compostela, Spain, invitation of prof. J.J.Nieto
14. 23 IV - 07 V 2017: University of Las Palmas de Gran Canaria, Spain, post-doc, invitation of Prof. Juan Rocha Martin and Kishin Sadarangani
13. 11 VIII 2016: Technical University of Denmark, Lyngby, Denmark, Modern Methods in Industrial Mathematics during 121st European Study Group with Industry, **lecturer**
12. 7 IX - 11 IX 2015: Lappeenranta University of Technology, Lappeenranta, Finland, **instructor** of a group working on a problem „How to measure the intra-ocular pressure”, 112nd European Study Group with Industry (ESGI)
11. 1 IV - 30 VI 2015: University of Las Palmas de Gran Canaria, Las Palmas, Spain, **instructor** of a group working on a problem „Introduction to continuum mechanics with application to the corneal topography” in Erasmums+ project MODCLIM
10. 20 IV - 9 V 2015: Weierstrass Institute for Applied Mathematics and Stochastics (WIAS), Berlin, Germany, invitation of Prof. D. Hömberg
9. 16-20 III 2015: University of Las Palmas de Gran Canaria, Las Palmas, Spain, **lecturer** of a mini-course „Introduction to continuum mechanics with application to the corneal topography” in Erasmus+ MODCLIM project
8. 16–18 X 2014: Gdansk University of Technology, **lecturer** at the School on Industrial Mathematics, course topic: "Thin film approximation in applied mathematics"
7. 14 VIII 2014: Technical University of Denmark, Modern Methods in Industrial Mathematics, 103rd European Study Group with Industry, *Lecturer*, Lyngby, Denmark
6. 11 VIII 2014: Eindhoven University of Technology, Eindhoven, Netherlands
5. 4–8 VIII 2014: International Centre for Theoretical Physics (ICTP), Summer School on Cosmology, Trieste, Italy
4. 2–6 VI 2014: Centro Internazionale Matematico Estivo (International Mathematical Summer Center), Partial Differential Equations and Geometric Measure Theory, Cetraro, Italy
3. 1–14 V 2013: University of Santiago de Compostela, Santiago de Compostela, Spain.
2. 19–26 VIII 2012: Technische Univerität Dresden, Dresden, Germany, Participation in *ECMI Modeling Week* as an *Instruktor* of the group “Mathematics of the Eye: Modeling Human Cornea”.
1. 14–26 VI 2012: University of Extremadura, Badajoz, Spain

Conferences

Organization

- **2023:** ECMI Conference 2023, Wrocław, *Member of the organizational committee*
- **2023:** AMS Joint Mathematics Meetings 2023, Boston, USA, *SIAM Special Session organizer*

Attendance

- **2024:** Modern Methods for Differential Equations of Quantum Mechanics, **invited talk** *Modeling, PDEs, and numerics*, BIRS, Banff, Canada, 21-26.04.2024
- **2023:** ENUMATH, Lisbon, Portugal, *Numerical methods for nonlocal and nonlinear parabolic equations with applications in hydrology and climatology*, 04-08.09.2023
- **2023:** International Congress on Industrial and Applied Mathematics ICIAM 2023, Tokyo, Japan, **invited talk** *Numerical methods for nonlocal and nonlinear parabolic equations with applications in hydrology and climatology*, 21-25.08.2023
- **2022:** Mathematical Analysis and Applications in Science and Engineering, *Numerical methods for nonlocal and nonlinear parabolic equations with applications in hydrology and climatology*, Porto, Portugal, 27-29.06.2022
- **2021:** New Bridges between Mathematics and Data Science, Valladolid, Spain, **invited talk** *Digital Twin for the human cornea: curvature estimation*, 8-11.11.2021
- **2021:** Conference on the Numerical Solution of Differential and Differential-Algebraic Equations (NUMDIFF-16), Halle, Germany, *Numerical methods for nonlocal and nonlinear parabolic equations with applications in hydrology and climatology*, 6-10.09.2021
- **2021:** Second International Nonlinear Dynamics Conference (NODYCON21), Rome, Italy, *Relaxation-oscillations in a conceptual climate model* 16-19.02.2021
- **2019:** International Congress on Industrial and Applied Mathematics ICIAM 2019, Valencia, Spain, **invited talk** *Numerical method for a nonlinear time-fractional diffusion*, 15-19.07.2019
- **2018:** Fractional Calculus, Probability and Non-Local Operators, Bilbao, Spain, **invited talk** *Numerical method for the time-fractional nonlinear diffusion*, 26-28.09.2018
- **2018:** XLVII Conference on Applied Mathematics, Zakopane (Kościelisko), Poland, **Robert Bartoszyński's lecture:** *Modelling climate dynamics*, 10.09.2018
- **2018:** 57. Szkoła Matematyki Poglądowej, Wola Ducka near Warsaw, **invited talk** *Climatic mathematics*, 27.01.2018
- **2017:** Fractional Calculus, Probability and Non-Local Operators, Bilbao, Spain, **invited talk** *Analytical and numerical methods for time-fractional nonlinear diffusion*, 8-10.11.2017
- **2016:** Wrocław-Potsdam Meeting on Dynamics, Potsdam, Germany, **invited talk** *Subdiffusion in porous media*, 7-8.12.2016
- **2016:** Fractional Calculus, Probability and Non-Local Operators, Bilbao, Spain, **invited talk** *Subdiffusion in porous media*, 23-25.11.2016
- **2016:** MODCLIM Dissemination Seminar, Wrocław, **invited talk**, 13.09.2016
- **2016:** XLVI Seminar of Applied Mathematics, Kobyla Góra, Poland, talk: *Inverse problem for a nonlocal diffusion equation*, 12.09.2016
- **2016:** XLV Conference on Applied Mathematics, Zakopane (Kościelisko), Poland, talk: *Approximate solutions and inverse problem for a nonlinear anomalous diffusion*, 5-13.09.2016
- **2016:** International Conference on Fractional Differentiation and its Applications, Novi Sad, Serbia, **session chair**, talk: *Difusivity identification in a nonlinear time-fractional diffusion equation*, 18-20.07.2016

- **2016:** The 19th European Conference on Mathematics for Industry (ECMI), Santiago de Compostela, Spain, talk: *Anomalous nonlinear diffusion in porous media: analytical approximations*, 13-17.06.2016
- **2015:** XLV Seminar of Applied Mathematics, Kobyla Góra, Poland, talk: *Równania geofizycznej mechaniki płynów*, 9.09.2015
- **2014:** 4th Workshop on Anomalous Diffusion, Wrocław University of Technology, **invited talk:** *Anomalous nonlinear diffusion in porous media: analytical approximations*, 5–6.12.2014
- **2014:** XLIV Seminar of Applied Mathematics, Kobyla Góra, Poland, talks: *Universe in 30min*, *Upside down mathematics*, 7-10.09.2014
- **2014:** *Between theory and applications - mathematics in action*, Będlewo, Poland, talk: *Analytical approximations of the solution to a nonlinear anomalous diffusion equation*, 27-30.08.2014
- **2014:** *International Conference on Fractional Differentiation and its Applications*, Catania, Italia, talk: *Anomalous nonlinear diffusion in porous media: analytical approximation*, 23-25.06.2014
- **2013:** *Applied Mathematics and Mathematical Methods in Physics*, Gdansk, Poland, talk: *Nonlinear anomalous diffusion: model and approximate solutions*, 12-14.12.2013
- **2013:** XLIII Seminar of Applied Mathematics, Kobyla Góra, Poland, talks: *Mathematics of the eye and Anomalous diffusion in the construction materials. Model and analytic solutions*, 08–11.09.2013
- **2013:** *Between theory and applications - mathematics in action*, Bedlewo, Poland, **invited talk and session chair:** *Mathematics of the eye*, 16—22.06.2013
- **2012:** V Mini-conference of Ph.D studies in Mathematical Sciences, Wrocław, Poland, 19–20.10.2012
- **2012:** XLII Seminar of Applied Mathematics, Kobyla Góra, Poland, 09–12.09.2012
- **2012:** ECMI Modeling Week Instructor of the group “Mathematics of the Eye: Modeling Human Cornea”, Dresden, Germany, 12–26.08.2012
- **2012:** *The 17th European Conference on Mathematics for Industry 2012*, Lund, Sweden, 23–27.07.2012
- **2012:** ECMI Educational Committee, Münchweiler near Kaiserslautern, Germany, 02-05.02.2012
- **2011:** *School and Workshop on Mathematics for Multiscale Phenomena*, Bedlewo, Poland, 24–28.10.2011
- **2011:** III Mini-conference of Ph.D studies in Mathematical Sciences, Krakow, Poland 14–15.10.2011
- **2010:** EMS School on Industrial Mathematics, Bedlewo, Poland, 11-18.10.2010
- **2009:** *Anomalous Diffusion. Theory and Applications*, Wrocław, Poland, 13–14.11.2009
- **2009:** 23rd ECMI Modeling Week, Wrocław, Poland, 23–30.08.2009

Publications

Editorial service

- **2023–:** Editor of *Mathematica Applicanda*

Published or Accepted Papers:

47. **2024:** *Fully discrete Galerkin scheme for a semilinear subdiffusion equation with nonsmooth data and time-dependent coefficient* (with K. Taźbierski), *Computers and Mathematics with Applications* 165 (2024), 217–223
46. **2024:** *Discussion on angular asymmetry in the solutions of SLIP model* (with P. Kowalczyk and Z. Wróblewska), *Mathematica Applicanda* 51(2) (2023), 233–237

45. **2024:** *Time-fractional porous medium equation: Erdélyi-Kober integral equations, compactly supported solutions, and numerical methods* (with z B. Lopez, J. Rocha, and H. Okraśińska-Płociniczak), *Communications in Nonlinear Science and Numerical Simulation* 128 (2024), 107692
44. **2023:** *Stability of fixed points in an approximate solution of the spring-mass running model*, *IMA Journal of Applied Mathematics* 88 (3) (2023), 429–454, (with P. Kowalczyk oraz Z. Wróblewska)
43. **2023:** *A linear Galerkin numerical method for a quasilinear subdiffusion equation* *Applied Numerical Mathematics* 185 (2023), 203-220
42. **2023:** *Energy variations and periodic solutions in a switched inverted pendulum model of human running gaits* (with P. Kowalczyk and Z. Wróblewska), *Physica D* 443 (2023), 133554
41. **2022:** *Error of the Galerkin scheme for a semilinear subdiffusion equation with time-dependent coefficients and nonsmooth data*, *Computers & Mathematics with Applications* Volume 127 (2022), 181–191
40. **2022:** *The Bushell-Okraśiński inequality*, *Mathematica Applicanda* 50(1) (2022), 3–22
39. **2022:** *Numerical scheme for Erdélyi–Kober fractional diffusion equation using Galerkin–Hermite method*, *Fractional Calculus and Applied Analysis* 25 (2022), 1651–1687,
38. **2022:** *Linear Galerkin-Legendre spectral scheme for a degenerate nonlinear and nonlocal parabolic equation arising in climatology*, to appear in *Applied Numerical Mathematics* 179 (2022), 105-124
37. **2022:** *Second order scheme for self-similar solutions of a time-fractional porous medium equation on the half-line*, *Applied Mathematics and Computation* 424C (2022) 127033,
36. **2022:** *On a discrete composition of the fractional integral and Caputo derivative*, *Communications in Nonlinear Science and Numerical Simulation*, 108 (2022), 106234
35. **2021:** *Oscillatory behaviour analysis of a liquid rise in cylindrical capillaries* with M. Świtała, *Communications in Nonlinear Science and Numerical Simulations* 96 (2021), 105647
34. **2020:** *Asymptotic Solution of a Boundary Value Problem for a Spring–Mass Model of Legged Locomotion* with H. Okraśińska-Płociniczak, *Journal of Nonlinear Science* 85 (3) (2020), 467–494
33. **2020:** *Off-axis vortex beam propagation through classical optical system in terms of Kummer confluent hypergeometric function* with I. Augustyniak, W. Lamperska, J. Masajada and A. Popiołek-Masajada, *Photonics* 7(3) (2020), 60.
32. **2020:** *A weighted finite difference method for subdiffusive Black–Scholes model* with G.Krzyżanowski and M. Magdziarz, *Computers & Mathematics with Applications* 80 (5) (2020), 653-670
31. **2020:** *Solvability in Hölder spaces of an integral equation which models dynamics of the capillary rise* with z K. Sadarangani, J. Rocha and H.Okraśińska-Płociniczak, *Journal of Mathematical Analysis and Applications* 490(1) (2020), 124237
30. **2020:** *Asymptotic analysis of internal relaxation-oscillations in a conceptual climate model*, *IMA Journal of Applied Mathematics* 85 (3) (2020), 467–494
29. **2020:** *Asymptotic behaviour of a solution to a nonlinear equation modelling capillary rise* with M. Świtała, *Physica D* 406 (2020), 132394
28. **2020:** *Solution and asymptotic analysis of a boundary value problem in the spring-mass model of running* with Z. Wróblewska, *Nonlinear Dynamics* 99 (2020), pp. 2693–2705
27. **2020:** *Hopf bifurcation in a conceptual climate model with ice-albedo and precipitation-temperature feedbacks*, *Nonlinear Analysis: Real World Applications*, *Nonlinear Analysis: Real World Applications* 51 (2020), 102967
26. **2019:** *Derivation of the nonlocal pressure form of the fractional porous medium equation in the hydrological setting*, *Communications in Nonlinear Science and Numerical Simulation* 76C (2019) pp. 66-70
25. **2019:** *Numerical method for a time-fractional porous medium equation*, *SIAM Journal on Numerical Analysis*, 57(2), pp. 638-656.

24. **2018:** *Quickest drift change detection in Lévy-type force of mortality model* with Michał Krawiec and Zbigniew Palmowski, Applied Mathematics and Computation 338 (2018), pp. 432-450.
23. **2018:** *Numerical method for Volterra equation with a power-type nonlinearity* with Hanna Okraśińska-Płociniczak, Applied Mathematics and Computation 337 (2018), pp. 452-460.
22. **2018:** *Solution estimates for a system of nonlinear integral equations arising in optometry* with Wojciech Okraśiński, Journal of Integral Equations and Applications 30(1) (2018), pp. 167-179.
21. **2018:** *Existence and uniqueness results for a time-fractional nonlinear diffusion equation* with Mateusz Świłała, Journal of Mathematical Analysis and Applications 462(2) (2018), 1425-1434.
20. **2018** *Monotonicity, oscillations and stability of a solution to a nonlinear equation modelling the capillary rise*, with M. Świłała, Physica D 362 (2018), pp. 1-8
19. **2017:** *Numerical schemes for integro-differential equations with Erdélyi-Kober fractional operator*, with Sz. Sobieszek, Numerical Algorithms 76(1) (2017), pp. 125-150.
18. **2016:** *Diffusivity identification in a nonlinear time-fractional diffusion equation*, Fractional Calculus and Applied Analysis 19(4) (2016), pp. 883-866.
17. **2016:** *Analysis of cornea curvature using radial basis functions - Part II: Fitting to data-set*, with G. Griffithsem and W. Schiesser, Computers in Biology and Medicine, accepted
16. **2016:** *Analysis of cornea curvature using radial basis functions - Part I: Methodology*, with G. Griffiths and W. Schiesser, Computers in Biology and Medicine, accepted
15. **2016:** *Regularization and the inflection point method for a sensor signal in gas concentration measurement*, with M. Maciejewsk and A. Szczurek, Inverse Problems in Science and Engineering, accepted
14. **2016:** *Transformation of the vortex beam in the optical vortex scanning microscope*, with A. Popiołek-Masajada, M. Szatkowski and D. Wojnowski, Optics & Laser Technology 81 (2016), pp. 127-136.
13. **2016:** *Analytical model of the optical vortex microscope*, with A. Popiołek-Masajada, J. Masajada and M. Szatkowski, Applied Optics 55(12) (2016), pp. B20-B27
12. **2015:** *Analytical studies of a time-fractional porous medium equation. Derivation, approximation and applications*, Communications in Nonlinear Science and Numerical Simulation 24 (1-3) (2015), 169-183
11. **2014:** *Approximation of the Erdélyi-Kober fractional operator with application to the time-fractional porous medium equation*, SIAM Journal of Applied Mathematics 74(4) (2014), 1219-1237.
10. **2014:** *ODE/PDE Analysis of Corneal Curvature* (with W.E.Schiesser and G.W.Griffiths), Computers in Biology and Medicine 53 (2014), 30-41.
9. **2014:** *Eigenvalue asymptotics of a fractional boundary-value problem*, Applied Mathematics and Computation 241 (2014), 125-128
8. **2014:** *Nonlinear Parameter Identification in Corneal Geometry Model* (with W.Okraśiński), to appear in Inverse Problems in Science and Engineering
7. **2014:** *On a nonlinear boundary value problem modeling corneal shape* (with W.Okraśiński), J.J.Nieto and O.Dominguez), Journal of Mathematical Analysis and Applications 414 (1) (2014), 461-471
6. **2014:** *Bessel function model of corneal topography* (with W.Okraśiński), Applied Mathematics and Computation 223 (2013), 436-443,
5. **2013:** *Approximate self-similar solutions to a nonlinear diffusion equation with time-fractional derivative*, with H.Okraśińska, Physica D 261 (2013), 85-91
4. **2013:** *A Note on Fractional Bessel Equation and Its Asymptotics* with W.Okraśiński, Fractional Calculus and Applied Analysis 16 (2013) 3,

3. **2013:** *On Asymptotics of some Fractional Differential Equations*, *Mathematical Modeling and Analysis* 18 (3) (2013), 358–373
2. **2013:** *Regularization of an Ill-posed Problem in Corneal Topography* with W.Okrański, *Inverse Problems in Science and Engineering*, in print, DOI: 10.1080/17415977.2012.753443,
1. **2012:** *A Nonlinear Mathematical Model of the Corneal Shape* with z W.Okrański, *Nonlinear Analysis: Real World Applications* 13 (2012), 1498-1505,

Book chapters:

3. **2014:** *Przybliżenie cienkich powłok w modelowaniu matematycznym* (in Polish), rozdział w *Metody matematyczne w zastosowaniach*, Centrum Zastosowań Matematyki, Politechnika Gdańska, 2014, str. 261-274, ISBN 978-83-937569-1-9.
2. **2014:** *Matematyka na opak, czyli krótko o problemach odwrotnych* (in Polish), rozdział w *Metody matematyczne w zastosowaniach*, Centre of , Politechnika Gdańska, 2014, str. 209-223, ISBN 978-83-937569-1-9.
1. **2011:** *Metoda statystyczna wyboru budynków do przeprowadzenia eksperymentu pomiarowego* (in Polish) with P.Malinowski, M.Muszkieto oraz M.Teuerle, chapter in *Nowoczesne rozwiązania w inżynierii i ochronie środowiska*, Tom II, Oficyna Wydawnicza PWr, Wrocław, 2011, str.61-68, ISBN 978-83-929704-3-9.

Miscellaneous:

- **2012:** *Mathematics of the Eye: Modelling Corneal Curvature*, with F.Bani, E.Lluch, O.Dmytryenko, J.Sanchez, C.Wanzke, A.Zeleva, ECMI Modelling Week, Technical University Dresden, Dresden, report, URL: www.math.tu-dresden.de/essim2012/
- **2010:** *Determining Intraocular Pressure in a Noninvasive Way*, with A.Fitt, M.Frańczak, M.Przybyłko, J.Orewczyk, P.Urbaniac, M. Wielgus, EMS School On Mathematical Modeling, Bedlewo, Poland, report,
- **2009:** *Thermal Conduction In Beehives*, with M.Bracke, O.Corradi, J.P.Frexia, P.Trinh, J.Ufitimana, M Yudistkiy, 23rd Modeling Week, Wrocław, Poland, report, www.im.pwr.wroc.pl/~hugo/HSC/imprezy/ModellingWeek/reports/Report_project02.pdf,

Mathematical Reviews Reviewer.

Book reviews: Cambridge Univeristy Press, Elsevier, Springer, World Scientific, CRC

Reviewer for: *Scientific Reports*, *Applied Mathematics Letters*, *Applied Mathematics and Computation*, *Journal of Hydrology*, *Applied Mathematical Modelling*, *Boundary value problems*, *Nonlinear Dynamics*, *Physica A*, *Journal of Inverse and Ill-Posed Problems*, *Journal of Computational and Nonlinear Dynamics*, *Applicationes Mathematicae*, *International Journal of Numerical Analysis and Modeling*, *Mathematical Problems in Engineering*, *Inverse Problems in Science and Engineering*

Teaching and Popularization of Mathematics and Physics

Teaching: *Differential equation in technology*, *Partial Differential Equations in Industry*, *Applications of Partial Differential Equations*, *Introduction to scientific computing*, *Numerical methods*, *Mathematical modelling*

Other activities:

- **2011–:** Supervisor of the Scientific Circle of Industrial Mathematics, Wrocław University of Technology
- **2012:** Talk “Mathematical Modelling”, First High School in Leszno, Poland, 16.04.2012
- **2011:** Talk “Everyday Life Computer Modelling” in Adam Olbracht Przyjma-Przyjemski Gymnasium, Sierakowo, Rawicz, Poland, 02.12.2011
- **2010–2011:** Member of the Scientific Circle of Industrial Mathematics, Wrocław University of Technology
- **2009–2010:** Member of the Scientific Circle of Mathematics, Wrocław University of Technology