

Tatjana Kandikjan, Ph.D.

Professor of Mechanical Engineering

Ss. Cyril and Methodius University
Faculty of Mechanical Engineering
Rugjer Boshkovikj 18, P.O. Box 464,
Skopje 1000, Macedonia

phone. +389 70336091
tatjana.kandikjan@mf.edu.mk
ukim.mf.edu.mk
design.mf.edu.mk

EDUCATION

Ph.D. in Technical Sciences, University "Ss. Cyril and Methodius", Skopje, 1994.
M.S. in Mechanical Engineering, University of Ljubljana, Ljubljana, Slovenia, 1986.
B.S. in Mechanical Engineering, University "Ss. Cyril and Methodius", Skopje, 1980.

RESEARCH INTEREST

Computer-Aided Design; Geometric Dimensioning and Tolerancing in CAD systems;
Modeling and Simulation; Product Development;
Eco-Design; Disassembly Planning for Recycling; Automatic Assembly Planning;

TEACHING EXPERIENCE

Undergraduate Courses

Engineering Design (1998-)
New Product Development (2004-)
Eco-Design (2003-2021)
Packaging Design (2004-2020)
Design with Plastics (2004-2015)
Design Process (2003-2013)

Graduate Courses

Computer-Aided Product Design (2008-)
Rapid Prototyping and Customized Production (2008-)
Product Design and Innovation Management (2014-)
Consumer Product Design (2008-)

Ph.D. Studies Courses

Product Design and Development (2008-)
Advanced Modeling of Mechanical Assemblies (2008-)
Product Design for the Environment (2008-)

ACADEMIC APPOINTMENTS

University Ontario Institute of Technology, Ontario, Canada

2010 *Visiting Professor*, Faculty of Engineering and Applied Science

Arizona State University, Tempe, Arizona, USA

1997 *Postdoctoral Fellow*, Department of Mechanical and Aerospace Engineering

University "Ss. Cyril and Methodius", Skopje, Macedonia

- 2008 - today *Chair, Engineering Design and Industrial design, Faculty of Mechanical Engineering*
- 2004 - 2008 *Senator, Senate of the Ss. Cyril and Methodius University*
- 2004 - today *Professor, Faculty of Mechanical Engineering*
- 2000 - 2004 *Associate Professor, Faculty of Mechanical Engineering*
- 1995 - 2000 *Assistant Professor, Faculty of Mechanical Engineering*
- 1980 - 1995 *Teaching Assistant, Faculty of Mechanical Engineering*
- 2000 - 2008 *Head of the Computer Center, Faculty of Mechanical Engineering*
- 2006 - 2007 *Team Leader, Development of the New Study Program: Master's Studies in Industrial Design and Marketing, Faculty of Mechanical Engineering, Skopje*
- 2003 - 2004 *Team Leader, Development of the New Study Program: Bachelor's Studies in Industrial Design Engineering, Faculty of Mechanical Engineering, Skopje*
- 2005 - 2008 *Coordinator, Johnson Controls Training Center, Faculty of Mechanical Engineering*
- 2005 - 2008 *Academic Advisor, Scholarship Program "Blue Sky", Johnson Controls, Skopje*

OTHER PROFESSIONAL APPOINTMENTS

- 2006 - today *Chair of Technical Committee for Safety of Machinery, Institute of Standardization of Republic of Macedonia.*
- 2003 - 2012 *Reviewer, International Conference "Tools and Methods of Competitive Engineering (TMCE)", Delf University of Technology, Netherlands*

RESEARCH GRANTS

1. Kandikjan T. (grantholder), Djokikj J., Mircheski I., Sidorenko S., Petrushevski I., Angeleska E., (2020) : "Parametric Design for Additive Production". Research project. Ss. Cyril and Methodius University, Skopje, R. N. Macedonia
2. USJEPR DOO, Skopje (2017-2020).: "Development of EPS panel for floor heating and perimeter panel". (Kandikjan T. , Faculty of Mechanical Engineering, participant). SME project financed by the Fond for Innovation and Technology Development of R. North Macedonia.
3. Kandikjan T., Sidorenko S., Mircheski I., Cvetkovski L. (Editors), (2020) : "Imagination >> DESIGN << Technology", Industrial Design Student Projects - Book 4 and exhibition. Ministry of Culture of Republic of North Macedonia.
4. Kandikjan T. (grantholder) (2019) : "Smart Info-Corridors". Extracurricular student project for design and prototyping of a smart mirror device for amusement and advertising. Project Hub. Faculty of Mechanical Engineering, UKIM, Skopje
5. Prof. Michael Krohn, (grantholder), Sofija Sidorenko (project coordinator), Kandikjan T.(2016-2017) : "Design with Social Impact". Zürcher Hochschule der Künste, Zurich, Switzerland
6. Kandikjan T., Sidorenko S., Mircheski I., Cvetkovski L. (Editors) (2016) : "Designing the Evolution 2". Industrial Design Student Projects - Book 3 and exhibition. Ministry of Culture of Republic of Macedonia
7. Kandikjan T., Mircheski I. (2019): "Geometric Dimensioning & Tolerancing and Tolerance Analysis". Project for training of industry professionals
8. Kandikjan T., Mircheski I. (2018) : "Engineering Design using SolidWorks". Project for training industry professionals
9. Kandikjan T., Mircheski I. (2016) : "Engineering Design using Autodesk Inventor". Project for training industry professionals

10. Kandikjan T. (visiting professor) : "Development and teaching of new graduate course: Design for Product End-of-Life". University Ontario Institute of Technology, Faculty of Engineering and Applied Sciences, Oshawa, Ontario, Canada, 2010
11. Kandikjan T. (project leader) (2011-2012) : "Participation at Salone Satellite at Milan Design Week 2012", Ministry of Culture of R. Macedonia
12. Kandikjan T., Sidorenko S. : "Estuar - exhibition and booklet", 2012, Ministry of Culture of R. Macedonia, project period (2011-2012).
13. "Development of Master's Studies in Industrial Design and Marketing", Gebhardt A. (grantholder), Fachhochschule Aachen. Kandikjan T. (project coordinator and implementator). Joint European Project TEMPUS_JEP_41128_2006 (2007-2009)
14. "Implementation of Learning Module for Product Development based on KaLeP Model", grant holder: A. Albers, Institute for Product Development, Karlsruhe, Germany, Kandikjan T. (local coordinator), DAAD Program "Academic Reconstruction of South Eastern Europe" (2004-2009)
15. "Disassembly Planning for Product Recycling": G. Seliger G. (grantholder). IWF, Technical University Berlin, Germany. Kandikjan T. (project co-leader and principal researcher). Bilateral German-Macedonian project, Ministry of Science of Germany and Ministry of Science of R. Macedonia (2003-2004)
16. Kandikjan T. : (grantholder): "Automatic Planning of Product Disassembly Sequences for Recycling of Electro-Mechanical Products", Kandikjan T. (principal researcher), Research project, Ministry of Science of R. Macedonia (2001-2004)
17. Kandikjan T. (project leader) : "Introduction of the Techniques for Computer-Aided Design of Steel Structures for SME-s". Partners: six local companies for production of steel products. GTZ - Technology Transfer (2003)
18. Kandikjan T. (project leader) : "Computer-Aided Product Modeling in the Engeneering Practice". GTZ - Technology Transfer (2001)
19. Kandikjan T. (reserch scholar) : "Development of Validation Mechanism for GD&T Specification in CAD Systems". Fulbright Foundation. Arizona State University, U.S.A. (1997 - 1998)
20. Dukovski V. (grantholder) : "Product modeling and Computer-Aided Assembly Sequencing", Kandikjan T. (principal researcher), Ministry of Science of R. Macedonia (1993 - 1996)

PUBLISHED BOOKS AND COURSEBOOKS

1. Kandikjan T., Mircheski I. (2020, e-publication 2021) : "Product Design with Plastics", textbook. Ss. Cyril and Methodius University, Skopje. p.292
2. Kandikjan T., Sidorenko S., Mircheski I., Cvetkovski I, Gjurkov., Tachevski R., Djokikj J. (2020) : "Imagination >> DESIGN << Technology", Industrial Design Student Projects - Book 4. Ministry of Culture of Republic of N. Macedonia, pp.150 (<https://www.yumpu.com/en/document/read/64804700/-lilt->)
3. Mircheski I., Kandikjan T. (2016) : "Computer-Aided Design – Practicum", textbook. Ss. Cyril and Methodius University, Skopje. p.380
4. Kandikjan T., Sidorenko S. at all (2016) : "Designing the Evolution 2", Industrial Design Student Projects - Book 3, . Ministry of Culture of Republic of Macedonia. pp.128
5. KandikjanT. Sidorenko S. (2012) : "Design the Evolution", Industrial Design Student Projects - Book 2. Ministry of Culture of Republic of Macedonia. p.128
6. Kandikjan T. ., Sidorenko S. (2009) : "Living with Inspired Technology", Industrial Design Student Projects - Book 1. TEMPUS project, p.128
7. Kandikjan T. (2003) : "AutoCAD Mechanical - Examples in Metal Constructions", coursebook, DigiPrint, Skopje, p.91

8. Kandikjan T. (2002) : "AutoCAD Mechanical - A Course for Self-Training through Examples", coursebook, DigiPrint, Skopje. p.181
9. Kandikjan T. (2002) : "AutoCAD Mechanical 6 PP - Reference Manual for Mechanical Engineers", coursebook, DigiPrint, Skopje. p. 278
10. Kandikjan T. (2001) : "Parametric Modeling of Mechanical Assemblies using Mechanical Desktop 5", textbook. Ss. Cyril and Methodius University, Skopje. p.739
11. Joleski T., Kandikjan T., (1999) : Chapters: "Synthetic Curves and Surfaces" and "Solid Modeling" in "Engineering Graphics", textbook. Ss. Cyril and Methodius University, Skopje. pp. 238-299

TEACHING MATERIALS – Faculty of Mechanical Engineering

1. Kandikjan T. : "Engineering Design - Part 1 - Design Process", teaching material. Ss. Cyril and Methodius University, Skopje.
2. Kandikjan T. : "Engineering Design - Part 2 – Geometric Dimensioning and Tolerancing", teaching material. Ss. Cyril and Methodius University, Skopje.
3. Kandikjan T. : “New Product Development”. teaching material. Ss. Cyril and Methodius University, Skopje.
4. Kandikjan T. : “Rapid Prototyping and Customized Production”. teaching material. Ss. Cyril and Methodius University, Skopje.
5. Kandikjan T. : “Computer-Aided Product Design – Modeling with Parametric Surfaces”. teaching material. Ss. Cyril and Methodius University, Skopje.
6. Kandikjan T. (2020) : "Eco-design", teaching material. Ss. Cyril and Methodius University, Skopje.
7. Kandikjan T. (2020) : “Packaging Design”. teaching material. Ss. Cyril and Methodius University, Skopje.
8. Kandikjan T. (2014) : "Computer-Aided Design", teaching material. Ss. Cyril and Methodius University, Skopje.

TRAINING COURSES FOR INDUSTRY PROFESSIONALS

1. Kandikjan T., Mircheski I.(2019) : “Geometric Dimensioning and Tolerancing and Tolerance Analysis”, course material.
2. Kandikjan T., Mircheski I. (2020) : „Product Design with SolidWorks“, course material and 60 video-tutorialos.
3. Kandikjan T., Mircheski I. : „Product Analysis and Simulation with SolidWorks“. Course course material.
4. Kandikjan T., Mircheski I. (2016): „Development of Mechanical Assemblies with Autodesk Inventor“. course material.

RESEARCH PAPERS

1. Kandikjan T., Mircheski I., Angeleska E. (2021) : “Teaching Methodology for Designing Smart Products”. The 11th International Conference on Machine and Industrial Design in Mechanical Engineering (KOD 2021), Novi Sad, Serbia
2. Selim, I., Lazarevska, M, A., Mladenovska, D., Kandikjan, T., Sidorenko, S (2020) : “Identifying Material Attributes for Designing Biodegradable Products”. New Technologies, Development and Application. Springer. [doi.org/10.1007/978-3-030-18072-0]
3. Selim, I., Lazarevska, M, A., Kandikjan, T., Sidorenko, S (2019) : "Multi-attribute material information platform." In N.A.G.Z. Börekeçi, D. Jones, F. Korkut, D. Özgen Koçyıldırım (Eds.), Proceedings of DRS Learn X Design 2019 Fifth International Conference for Design Education Researchers: Insider Knowledge. [DOI: 10.21606/learnxdesign. 17032]

4. Djokikj J., Kandikjan T. (2018) : “Sustainability aspects of additive manufacturing”. Mechanical Engineering - Scientific Journal, Vol 36 (2).
5. Kandikjan T. (2016) : "The Automation of GD&T Specification in CAD Systems" (2016) : Digital Proceedings of the 5th Int. Conf. on Power Transmission, BAPT 2016, Ohrid. ISBN 978-608-4624-25-7. pp. 206-212
6. Mircheski I., Pop-Iliev R., Kandikjan T. (2016) : “A method for improving the process and cost of non-destructive disassembly”, Journal of Mechanical Design (JMD), Vol. 138(12), 2016. :121701-121701-15J. (15 pages) Journal Impact Factor: 1.688, Thomson Reuters, ASME Digital Collection <http://mechanicaldesign.asmedigitalcollection.asme.org/mobile/article.as...>
7. Mircheski, I., Kandikjan, T., Sidorenko S. (2012) : "Comfort analysis of vehicle driver’s seat through simulation of the sitting process", Technical Gazette, Croatia, Impact Factor (2012):0,60, Vol. 21, No. 2, 2014, pp. 291-298 <http://www.tehnickivjesnik.com/web/public/archive>, ISSN 18486339 (Online): http://hrcak.srce.hr/index.php?show=toc&id_broj=9837&lang=en
8. Mircheski I., Kandikjan T., Pop-Iliev R. (2014) : "3D CAD Integrated Method For Optimizing The Design For Non-Destructive Disassembly": Digital Proceedings of TMCE 2014 Symposium - Delft University of Technology, Budapest, Hungary, 2014, ISBN/EAN 9789461861771. pp 801-812
9. Kandikjan T., Sidorenko S., Mircheski I. (2014) : "Industrial Design Challenges, Development and Education" , Proc. of the Chamber of Architects and Engineers of R. Macedonia, vol. 22, 2014, ISSN 1857-7 44X. pp 36-41.
10. Mircheski I., Kandikjan T. and Pop-Iliev R. (2015) : “Automating non-destructive product disassembly sequence generation”, Book of proceedings of the 1st international conference on engineering and natural sciences (ICENS) 2015, Yıldız Technical University of Istanbul, Skopje, R. Macedonia. pp 606-616, <http://www.icens2015.com/>.
11. Mircheski I., Kandikjan T., Simonovski P. (2010) : “Virtual testing and experimental verification of seat comfort in driver’s seat for passenger automobile”, International Congress Motor Vehicles & Motors 2010 (MVM2010) – Sustainable development of automotive industry. Kragujevac, Republic of Serbia, Proceedings of papers, ISBN 978-86-86663-57-3. pp 74-81.
12. Mircheski I., Kandikjan T., Simonovski P. (2010) : “Virtual testing and experimental verification of seat comfort in driver’s seat for passenger automobile”, International Journal for Vehicle Mechanics, Engines and Transportation sites/defaults – Mobility & Vehicle Mechanics, University of Kragujevac – Faculty of mechanical engineering, Vol.36, Number 2, ISSN 1450-5304, pp 7-20, <http://scindeks.nb.rs/article.aspx?artid=1450-53041002007M> .
13. Mircheski I., Kandikjan T., Prangoski B. (2012) : “A mathematical model of non-destructive disassembly process”, International Journal of Mechanical and Production Engineering Research and Development (IJMPERD), Transstellar Journal Publications and Research Consultancy Private Limited (TJPRC), Impact Factor (JCC): 3,2516. <http://www.tjprc.org/journals.php?type=2&id=67#>, ISSN (Online): 2249-8001.
14. Mircheski I., Kandikjan T., Sidorenko S. (2012) : “Comfort analysis of vehicle driver’s seat through simulation of the sitting process “. Technical Gazette, Impact Factor (2012): 0.60, Vol. 21, No. 2, <http://www.tehnicki-vjesnik.com/web/public/archive> , ISSN 1848-6339 (Online) (str.291-298)
15. Mircheski I., Kandikjan, T. (2009) : „Implementation of KaLeP Educational Model in Integrated Product Development”, Scientific Journal, Faculty of Mechanical Engineering, Ss. Cyril and Methodius University, Skopje, Vol.28 Number 2. pp. 77-87.
16. Mircheski I., Miltenovic V., Kandikjan T., Banic M. (2009) : “Systematic Approach in Integrated Product Development through Application of KaLeP Model”, Journal of Mechanical Engineering Design, ADEKO. Novi Sad, Serbia, Vol.12 No 1. pp. 21-32. http://www.konstmas.uns.ac.rs/eng/nr1_2009.html
17. Kandikjan T., Shah J.J., Davidson J.K. (2001) : "A Mechanism for Validating Dimensioning and Tolerancing Schemes in CAD systems", Computer-Aided Design Vol.33/10, 721-737, Elsevier, citation

http://scholar.google.com/scholar?hl=en&q=Kandikjan+Tatjana&btnG=&as_sdt=1%2C5&as_sdtp=, cited in US Patent 8355895, <http://www.google.com/patents/US8355895>, Impact factor (2013) 1.515 Thomson Reuters JCR

18. Kandikjan T. (2004) : "Re-evaluation of Disassembly Sequences for Product Recycling", Global Conference on Sustainable Product Development and Life Cycle Engineering, Berlin, (poster presentation).
19. Kandikjan T. (2001) : "A Graph-Based Scheme for Representation of Dimensions and Tolerances in Mechanical Parts and Assemblies", International Conference on Production Research ICPR – 16, Prague, Czech Republic.
20. Kandikjan T., Shah J. (1998) : "A Computational Model for Geometric Tolerances Compatible with Engineering Practice", ASME'98, Computers in Engineering Conference, Atlanta, USA, pp 1-13
21. Kandikjan T., Dukovski V. (1997) : "Automatic Planning of Assembly Sequences under Product Related Heuristic Constraints", Manufacturing Systems, Vol.26, No.1
22. Kandikjan T., Dukovski V. (1996) : "Automatic Planning of Assembly Sequences under Product Related Heuristic Constraints", 28th CIRP Int. Symposium on Manufacturing Systems, Johannesburg, South Africa. pp 19-26
23. Kandikjan T., Dukovski V. (1995) : "Automatic Planning of Product Assembly Sequences Based on And/Or Graph Representation", 3rd Conference on Production Engineering CIM'95, Zagreb, Croatia, 1995. pp F 105-113
24. Kandikjan T., Dukovski V. (1995) : "Design for Assembly Through Evaluation of Product Assembly Sequences", 10th International Conference on Engineering Design ICED95, Prague, Czech Republic, 1995. pp1120-1121
25. Kandikjan T., Dukovski V. (1995) : "Assembly model with integrated kinematics context", 9th World Congress on the Theory of Machines and Mechanisms IFToMM'95, Milan, Italy. pp 2976-2980
26. Kandikjan T., Dukovski V. (1995) : "Automated Planning and Evaluation of Product Assembly Sequences", 31st International MATADOR Conference, Manchester UK. pp. 541-548
https://link.springer.com/chapter/10.1007%2F978-1-349-13796-1_81
27. Kandikjan T. (1995) : "Automatic Tolerance Chain Generation for Analysis of Mechanical Assemblies", (in Macedonian), Proceedings of the Faculty of Mechanical Engineering Vol.14/1, Skopje, R. Macedonia. pp. 3-8
28. Kandikjan T. (1994) : "Representation of Dimension and Tolerance Information in Feature-based Part Models", (in Macedonian), Proceedings of the Faculty of Mechanical Engineering Vol.13/2, Skopje, R. Macedonia. pp. 151-156
29. Kandikjan T. (1993) : "Planning of the Feasible Product Disassembly Sequences on the basis of the Kinematic Context of the Connections between Parts", (in Macedonian), Proceedings of the Faculty of Mechanical Engineering Vol.12, Skopje. pp. 81-84
30. Kandikjan T. (1993) : "Representation of the product structure and characteristics for the purpose of automatic assembly sequence planning", (in Macedonian), Proceedings of the Faculty of Mechanical Engineering Vol.13, Skopje. pp. 75-80
31. Dukovski V., Kandikjan T. (1993) : " A Semi-Automatic Procedure for Assembly Sequence Planning", IV Theme Symposium ETAI with International Participation, Ohrid, R. Macedonia
32. Kandikjan T. (1993) : "Generation of product Disassembly Sequences Based on Kinematic Context of the relation Between Parts", International Symposium CIM'93, Zagreb, Croatia
33. Kandikjan T. (1987) : "Integrated Modeling and Analysis of Shaft-like Parts at a CAD System", Seventh World Congress on the Theory of Machines and Mechanisms, Sevilla, Spain, pp. 1055-1056