

## PERSONAL DETAILS

**Name** Izabela Ciesielska-Wrobel  
**Cell phone** 919-349-1186  
**E-mail** [Izabela.Ciesielska.Wrobel@gmail.com](mailto:Izabela.Ciesielska.Wrobel@gmail.com)

## SUMMARY

- Versatile textile engineer and researcher having 15+ years of experience with textile structures designing, development, prototyping, innovation, testing, producing, and teaching.
- Efficient and meticulous when writing project proposals, technical documentation, designing and performing tests. Passionate about science.
- Excellent management, communication, and leadership skills.
- Capable of conducting high-quality independent and team multidisciplinary studies, for which I have successfully obtained funding. Total amount of awarded funding in European Union (EU) € **515,000** and in the United States (U.S.) \$ **450,000**.
- As a scientist with extraordinary abilities, I was awarded the right to permanent residence in the U.S.
- I get things done!

## PROFESSIONAL EXPERIENCE

### **July 2019 – November 2020: Luna Innovations Incorporated**

**Location:** Blacksburg, VA, US

**Position:** Research Scientist

#### **Main activities:**

- Project author (PA) and Principal Investigator (PI) of In-Flight Urination System – Easy Peezy (Department of Health Agency DHA193-003 Phase I SBIR; contract # W81XWH-20- P-0086; \$249,993.71)
  - Metal – organic frameworks (MOFs), absorbency and hydrophobicity
  - Novel design of underwear
- PA and PI of Conversion of Plastic Wastes into Economically Viable Filaments and Fibers - Ocean2Wear (Department of Energy, Office of Energy Efficiency and Renewable Energy Phase I SBIR; contract DE-SC0020765; \$200,000); <https://www.sbir.gov/sbirsearch/detail/1835455>
  - Compatibilizer - Montmorillonite clay
  - Ocean wastes
- Program Manager of Novel Flame – Resistant (FR) Nonwoven Fabrics for Uniforms Research (U.S. Army STTR Phase II; Natick Contracting Division; contract # W911QY-18-C-0003; \$495,249.68)

- PA6 with and without FR additive for spun bond hydro entangled nonwoven
- Thermogravimetric analysis of compounded materials
- Re-design and production of a new combat shirt for the Department of Defense
- Composite fibers (Islands-in-the-sea extrusion)
- Textile structure design and prototype development (drop-stitch, signature fabrics)
  - Business acumen in technical textiles
- Collaboration with textile industry (compounding, filament extrusion, inherently FR textiles and coatings, production of nonwovens, protective clothes design and production, direct print on textiles)
- Financial and scientific project management; reporting and contact with funding agencies

**May 2016 – April 2018: Department of Materials, Textiles and Chemical Engineering, Ghent University**

**Location:** Ghent, Belgium

**Position:** Senior Research Assistant

**Main activities:**

- Textile performance (tensile tests, bending rigidity, roughness, elasticity, tearing, pilling, compression, shearing, thermal resistance, etc.)
- Research on thermophysiological, ergonomic wear comfort (range of motion, mobility), textile sensory evaluation techniques (hand-feel/tactile evaluation, psychophysical theory studies – from skin receptors through brain to satisfaction, evoked potentials)
- Product development, structural designing and production of fibrous materials
- 3D modeling (Abaqus CAE), skin model and simulation of skin mechanoreceptors; geometry of textile structures
- High-performance fibers and polymers review for teaching purposes, e.g. bullet resistant materials
- Community service (co-organization of Smart Textile Salon)

**May 2014 – April 2016: Textile Protection and Comfort Center, Wilson College of Textiles, North Carolina State University**

**Location:** Raleigh, North Carolina, US

**Position:** Visiting Post-Doctoral Scholar

**Main activities:**

- PA and PI of Marie Curie International Outgoing Fellowship - Modelling of Human Body and Protective Textiles for Estimation of Skin Sensorial Comfort and Life Risk of Fire Fighters Working in Extreme External Conditions. The founding institution: European Commission. Project number 622043, project acronym: MAGNUM BONUM, €354,658; <https://cordis.europa.eu/project/id/622043>
  - organizing and conducting tests on firefighters (comparing designs of different uniforms, 3D body scanning of firefighters)
  - ergonomic wear comfort, thermophysiological comfort
  - test methods development
- Consumer studies for Wrangler and Nike
- Financial and scientific project management

**February 2013 – April 2014: French School of High Studies in Engineering (L'École des Hautes Études d'Ingénieur)**

**Location:** Lille, France

**Position:** Post-Doctoral Researcher

**Main activities:**

- Smart textiles development
  - Overview of conductive materials for textile applications
  - Productions of textile thermocouple working as a heat flux meter in woven fabric by coating high-performance textiles with a conductive material and etching the conductive layer
- Writing project proposals, scientific papers, and reports
- Introduction of bilingual teaching of technical textiles and polymers to graduate students

**November 2010 – October 2012: Department of Materials, Textiles and Chemical Engineering, Ghent University**

**Location:** Ghent, Belgium

**Position:** Post-Doctoral Researcher

**Main activities:**

- PA and PI of Marie Curie International European Fellowship - Creation of a new methodology for the analysis of the influence of textiles on human beings. The founding institution: European Commission. Project number 253594, project acronym: CREATION. Project Supervisors: Roger Barker, Lieva van Langenhove (€160,100); [https://cordis.europa.eu/project/rcn/96436\\_en.html](https://cordis.europa.eu/project/rcn/96436_en.html)
  - Body thermograms
- Textile performance - lab tests on yarns and fabrics, e.g., Kawabata, tensile tests, bending rigidity, hand-feel evaluation of fabrics; thermophysiological comfort tests on human subjects
  - Consumer studies
- Structural designing and production of textiles
- Teaching technical textiles and polymers (including biopolymers) to graduate students, and supervising undergraduate and graduate students.

**November 2009 – present: Autex Research Journal**

**Location:** Lodz, Poland

**Position:** Vice-Editor of Autex Research Journal (IF)

**Main activities:**

- Managing the policy of the journal: 25% increase of readership, 50% increase of citations
- Quality assurance by reviewing all the submissions, keeping the rejection rate at 27%
- Managing electronic submission system

**May 2007 – August 2013: Institute of Architecture of Textiles, Lodz University of Technology**

**Location:** Lodz, Poland

**Position:** Assistant Professor

**Main activities:**

- Lab tests on fabrics, thermophysiological comfort tests on human subjects, fancy yarns designing and production, designing decorative woven and knit fabrics (optical fibers, shape memory alloys, conductive materials)
- Structural designing of textiles
- Teaching knitting technology, fiber science, textile evaluation, technical textiles, and supervising undergraduate and graduate students

**April 2004 – April 2007: Institute of Architecture of Textiles, Lodz University of Technology**

**Location:** Lodz, Poland

**Position:** Teaching Assistant/Lecturer

**Main activities:**

- Teaching knitting technology and fiber science, supervising undergraduate and graduate students, transferring artistic patterns and designs into digital images and attractive textiles, printing on textiles
- Structural designing of textiles, yarns and fabrics performance

## EDUCATION

2007 - Ph.D. in Textile Manufacturing (4-year program), Lodz University of Technology, Poland;

Major - Textile Mechanical Engineering

2002 - Socrates/Erasmus Scholarship, Department of Textiles, Ghent University, Belgium.

2001 - Master of Science and Engineer in Textile Engineering, Lodz University of Technology,

Poland (unified bachelor and master 5-year program); Major-Textile Engineering;

Field-Textile Architecture.

## SELECTED JOURNAL PUBLICATIONS

Grabowska KE., Vasile S., Van Langenhove L., **Ciesielska I.L.**, *et al.* (2006). The influence of component yarns characteristics and ring twisting frame settings on the structure and properties of spiral, loop, and bunch yarns. *Fibres & Tex. in Eastern Europe* no 3, vol. 14, **IF2006 = 0.425.**

**Ciesielska I.L.**, Masajtis J. (2007). The influence of textiles on corona discharge created around the human being fingertip. *Fibers & Tex. in Eastern Europe* no 5-6, vol. 64-65, **IF2007 = 0.402.**

**Ciesielska I.L.**, Masajtis J. (2008). The preliminary studies of garments on human being's corona discharge. *International Journal of Clothing Science and Technology*, vol. 20, no 5, **IF2008 = 0.571.**

Frontczak-Wasiak I., Snycerski M., **Ciesielska I.L.** (2008). The textile structures modelled on the spider's net. *Fibres & Tex. in Eastern Europe*, no 5, vol. 16, **IF2008 = 0.439.**

**Ciesielska I.L.**, Mokwiński M., Orłowska - Majdak M. (2009). Influence of different kind of clothing on selected circulatory, respiratory and psychomotor parameters during moderate physical exercise. *International Journal of Occupational Medicine & Environmental Health*, **IF2010 = 1.057**.

**Ciesielska I.L.** (2009). Images of corona discharges as a source of information about the influence of textiles on humans. *Autex Res. Journal*, no 1, vol.9.

**Ciesielska I.L.** (2010). The precursory analysis of the influence of garments on corona discharge created around a human fingertip. *Textile Res. Journal*, vol. 80 no. 3, pp 216-225, **IF2010 = 1.102**.

**Ciesielska- Wróbel I.L.**, Szadkowska I., Masajtis J., Goch JH. (2010). Images of corona discharges in patients with cardiovascular diseases as preliminary analysis for research of the influence of textiles on images of corona discharges in textiles' users. *Autex Res. Journal* vol. 10, no 1.

Vasile S., Grabowska KE., **Ciesielska-Wróbel I.L.**, et al. (2010). Analysis of Hybrid Woven Fabrics with Shape Memory Alloys Wires Embedded. *Fibers & Tex. in Eastern Europe*, 18, 1 (78), **IF2010 = 0.629**.

Grabowska KE., Marciniak K., **Ciesielska-Wróbel I.L.** (2011). The analysis of attenuation of electromagnetic field by woven structures based on hybrid fancy yarns. *Textile Res. Journal*, 81, 15, **IF2011 = 1.122**.

Vasile S., Githaiga J., **Ciesielska-Wróbel I.L.** (2011). Comparative Analysis of the Mechanical Properties of Hybrid Yarns with Superelastic Shape Memory Alloys (SMA) Wires Embedded. *Fibers & Tex. in Eastern Europe*, vol. 19, no. 6 (89) pp. 41- 46, **IF2011 = 0.532**.

**Ciesielska-Wróbel I.L.**, Grabowska KE. (2012). Estimation of EMR' shielding effectiveness of knit structures. *Fibers & Tex. in Eastern Europe*, vol. 2, no 91, **IF2012 = 0.801**.

**Ciesielska-Wróbel I.L.**, Van Langenhove L. (2012). The hand of textiles – definitions, achievements, perspectives – a review. *Textiles Res. Journal*, 82, 14, **IF2012 = 1.135**.

Vasile S, **Ciesielska-Wróbel I.L.**, et al. (2012) Wrinkle Recovery of Flax Fabrics with Embedded Superelastic Shape Memory Alloys Wires. *Fibers & Tex. in Eastern Europe*, 20, 4(93), **IF2012= 0.801**.

**Ciesielska-Wróbel I.L.**, Van Langenhove L. et al. Fingertip skin models for analysis of the haptic perception of textiles, *J. of Biomedical Science and Eng.* Vol.7 No.1 (2014), DOI:10.4236/jbise.2014.71001.

Grabowska KE., **Ciesielska-Wróbel I.L.** (2014) Basic Comparison of the Properties of the Loop and Frotte Yarns, Woven and Knitted Fabrics. *Autex Res. Journal*, Vol. 14, No 3, September 2014, **IF2014 = 0.220**.

Grabowska KE, **Ciesielska-Wróbel I.L.** (2015) Characteristic and Application of Knop Fancy Yarns. *Fibers & Tex. in Eastern Europe*; 23, 1(109): 17-25., **IF2015 = 0.566**.

**Ciesielska-Wróbel I.L.**, G. De Mey & L. Van Langenhove (2015): Dry heat transfer from the skin surface into textiles: subjective and objective measurement of thermal haptic perception of textiles – preliminary studies, *The Journal of The Textile Institute*, DOI: 10.1080/00405000.2015.1034938., **IF2015 = 1.128**.

Toda M., Grabowska KE, **Ciesielska-Wróbel I.L.** (2015) Micro-CT supporting structural analysis and modelling of ropes made of natural fibers, *Textile Res. Journal*, 2015/10/5., **IF2015 = 1.229**.

**Ciesielska-Wróbel I.L.**, E DenHartog, R Barker (2016), Measuring the Effects of Structural Turnout Suits on Firefighter Range of Motion and Comfort, *Ergonomics* 60, 2, **IF2016 = 1.818**.

De Mey G., **Ciesielska-Wróbel I.L.**, L Van Langenhove (2016) Mathematical model of haptic perception of temperature, *Textile Res. Journal* 87 (2), 155-164; **IF2016 = 1.443**.

Marciniak K., Grabowska K., Stempień Z., **Ciesielska-Wróbel I.L.**, et al. (2016) Woven Fabrics Containing Hybrid Yarns for Shielding Electromagnetic Radiation, *Fibers & Tex. in Eastern Europe*, 24, 109-115, **IF2016 = 0.626**.

**Ciesielska-Wróbel I.L.**, DenHartog E., Barker R. (2017) The influence of designs of protective uniforms on firefighters' performance during moderate physical exercises, *Textile Res. Journal*, <https://doi.org/10.1177/0040517517715084>, **IF2016 = 1.443**.

Toda M., Grabowska K., **Ciesielska-Wróbel I.L.** (2017), Application of micro-computed tomography (micro-CT) to study unevenness of the structure of yarns, *Textile Res. Journal*, Vol 87, Issue 3, pp. 351 – 368., **IF2016 = 1.443**.

Hardianto A., De Mey G., **Ciesielska-Wróbel I.L.**, Hertleer C., Van Langenhove L (2018). Seebeck coefficient of thermocouples from Nickel-coated Carbon fibers: theory and experiment; *Materials MDPI*, 11(6), 922; <https://doi.org/10.3390/ma11060922> , **IF2017 = 2.654**

Marciniak K., Grabowska K., Stempień Z., **Ciesielska-Wróbel I.L.** (2018). Shielding of electromagnetic radiation by multilayer textile sets, *Textile Res. Journal*, online February 28, 2018, **IF2016 = 1.443**.

Teyeme Y., Malengier B., Tesfaye T., **Ciesielska-Wróbel I.L.**, et al. (2020). Review of contemporary techniques for measuring ergonomic wear comfort of protective and sport clothing. *Autex Res. Journal*, **IF2020=1.000**; <https://doi.org/10.2478/aut-2019-0076>

## SELECTED CONFERENCE PAPERS

Van Langenhove L., Grabowska KE., **Ciesielska I.L.**, et al. The Analysis of Structure and its Influence on Properties of Spiral, Loop and Bunch Yarns. *World Textile Conference, AUTEX 2005, Slovenia.*

**Ciesielska I.L.**, et al. The influence of garments on chosen parameters of human physiology and feeling of comfort during physical effort. *World Textile Conference, AUTEX 2008, Italy.*

**Ciesielska I.L.**, Masajtis J. Orłowska - Majdak M. The experimental approaches in the context of the influence of textiles on humans' well-being. *World Textile Conference, AUTEX 2009, Turkey.*

**Ciesielska I.L.** All about Autex Research Journal. *World Textile Conference AUTEX 2009, Turkey.* – **INVITED SPEECH.**

**Ciesielska I.L.** Shape Memory Alloys for textile applications. *World Textile Conf. AUTEX 2009, Turkey.*

Grabowska KE., Kiekens P., Van Langenhove L., **Ciesielska-Wróbel I.L.**, Marciniak K. The innovative hybrid protection textile structures. *World Textile Conference, AUTEX 2010, Lithuania.*

Grabowska KE., Kiekens P., Van Langenhove L., Marciniak K., **Ciesielska-Wróbel I.L.** The innovative textile protection against electromagnetic radiation. *41<sup>st</sup> Inter. Symp. on Novelties in Tex., Slovenia, 2010.*

**Ciesielska-Wróbel I.L.**, Grabowska KE., Marciniak K., Kiekens P., Van Langenhove L. The analysis of the shielding efficiency of interlock structures. *World Textile Conference, AUTEX 2011, France.*

**Ciesielska-Wróbel I.L.**, Van Langenhove L. Creation of new methodology for the analysis of the influence of textiles on human beings. *World Textile Conference, AUTEX 2011, France.*

**Ciesielska-Wróbel I.L.**, et al. 3-D finite element models of the fingertip skin compliance under the influence of textiles versus subjective hand assessment. *41<sup>st</sup> Textile Research Symposium 2012, Portugal.*

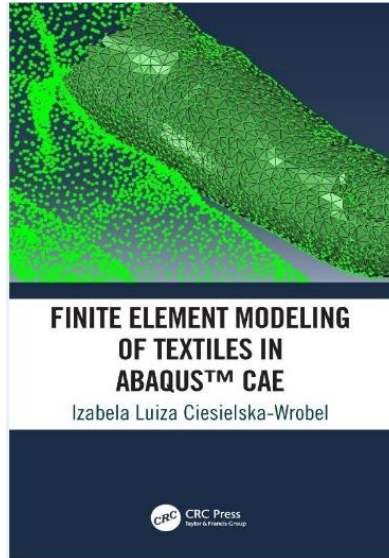
**Ciesielska-Wróbel I.L.**, Van Langenhove L. Heat transfer in 3-D skin model. *10th Joint International Conference CLOTECH on Innovative Technologies in Textiles and Protective Clothing, 2012, Poland.*

**Ciesielska-Wróbel I.L.**, Restrictions of Motions in Firefighters Wearing Uniforms. *TBIS-APCC 2016, the joint international Symposium of the 9th Textile Bioengineering and the 6th Asian Protective Clothing Conference, July 12-15, 2016 in RMIT University, Melbourne, Australia.*

**Ciesielska-Wróbel I.L.**, J Knockaert, G De Mey, L Van Langenhove, Shielding the electromagnetic waves by inserting conductive lightweight materials into woven curtains, *International Conference on Intelligent Textiles and Mass Customization, 16-18 October, Ghent, Belgium 2017.* – **BEST PAPER AWARD.**

## BOOK

**Ciesielska-Wróbel I.L.**, Finite Element Modelling in Abaqus CAE, 1<sup>st</sup> Edition, CRC Press, Taylor and Francis Group, August 2019.



## BOOK CHAPTER

**Ciesielska-Wróbel I.L.**, (2017) Contemporary Personal Ballistic Protection (PBP) in Textiles for Advanced Applications edited by Bipin Kumar and Suman Thakur, ISBN 978-953-51-3501-2, Print ISBN 978-953-51-3500-5, InTech, September 9, 2017.





## PATENTS

Patent no P 215706 "The knitted material with ability of shielding electromagnetic radiation"; Patent Office in Poland. Applicants – **Ciesielska-Wróbel I.L.**, Grabowska KE., Marciniak K.; <https://ewyszukiwarka.pue.uprp.gov.pl/search/pwp-details/P.392143?lng=en>

Patent no P 215679 "The knitted material with ability of shielding electromagnetic radiation"; Patent Office in Poland. Applicants – **Ciesielska-Wróbel I.L.**, Grabowska KE., Marciniak K.; <https://ewyszukiwarka.pue.uprp.gov.pl/search/pwp-details/P.391804?lng=en>

## TEACHING (lectures, labs)

2004 – 2010: Lodz University of Technology, Poland

- Artistic designing of clothing - graduate students of Architecture of Textiles; I utilized knitting technology to support students' designing
- Artistic designing of decorative textiles - graduate students of Architecture of Textiles; I utilized spinning and knitting technologies to support students' designing
- Computer-aided design - graduate students of Architecture of Textiles; knitting technology involved
- Basics of designing of technical textiles – undergraduate students of Architecture of Textiles
- Designing of technical textiles - graduate students of Architecture of Textiles
- Designing of textiles - undergraduate students of Architecture of Textiles

2013: French School of High Studies in Engineering, France

- Polymers, technical fibers and composites, lecture for graduate students

2014: North Carolina State University, USA

- Smart Materials and Smart Textiles within *Introduction to Fiber Science*, invited lecture given to undergraduate students

2014: Technical University of Catalonia, Spain

- Polymers, technical fibers and composites, European Textile Engineering Advanced Master (E-TEAM) students

2010 – 2018: Ghent University, Belgium – online & hybrid teaching

- Computation Sciences and Engineering Principles for Textiles, E-TEAM students
- Ergonomics and ergonomic wear comfort, invited lectures for graduate students
- Textile Composite Structures for Impact Protection, E-TEAM students

## REVIEWER

- Fibers & Textiles in Eastern Europe, since 2008.
- Autex Research Journal, since 2008.
- Textile Research Journal, since 2012.
- Journal of the Textile Institute, since 2014.
- Journal of Engineered Fibers and Fabrics, since 2015.

## MEMBERSHIPS AND APPOINTMENTS

- Member of the Editorial Board of Fibers & Textiles in Eastern Europe, Poland, since 2008.
- Vice-editor of Autex Research Journal, Poland & Belgium, since 2009.
- Member of Scientific Committee of the International Symposium “Technical Textiles – Present and Future, Iasi, Romania, October 25th, 2013.
- Scientific Board Member of Autex Research Journal, Poland & Belgium, since 2016.
- Scientific Committee Member of International Conference ITMC’2017 & ITMC’2019 (Intelligent Textiles and Mass Customization), Belgium.
- Member of American Society for Testing and Materials (ASTM) since 2016.

## SELECTED LEARNING INTERESTS

- Unified Introduction to Abaqus by Dassault Systems, Maarsse, The Netherlands, 2011.
- Powerful Presentation Skills by Skill Studio, London, UK, 2011.
- Practical Leadership Skills – North Carolina State University/McKimmon Center for Extension and Continuing Education, November 3-5, 2014.
- Modeling in Abaqus (heat transfer, human skin and textiles); Dassault Systems, Johnston, RI, USA, February 17-19, 2015.
- Career Management - Vlerick Business School, Ghent, Belgium, March 2017.
- Intellectual Property Law and Policy: Part 1, a course of study offered by PennX, University of Pennsylvania through edX, April 8, 2018.
- Customer Insights: New Product Development Orientation, a course offered by the University of Illinois at Urbana-Champaign through Coursera, January 2019.
- Idea Development: Create and Implement Innovative Ideas, a course of study offered by the University of Queensland through edX, February 2019.
- Six Sigma: Define and Measure, a course offered by Technische Universität München through edX, from March 2019 - present.
- Getting Started with Python, a course offered by MichiganX, an online learning initiative of the University of Michigan through edX, April 2019.
- Data Science Program, R Basics, Data Visualization, Probability, Inference, Linear

regression, Machine learning, Inference and Modeling, etc. Harvard X by Harvard University, US, through edX, from March 2019 – present.

- Introduction to Consumer Neuroscience & Neuromarketing, a course of study offered by Copenhagen Business School through Coursera, November 2020 – January 2021.
  - Consumer behavior analysis
- Antisemitism: From Its Origins to the Present, a course of study offered by Yad Vashem, the world Holocaust remembrance center through Coursera, November 2020 – present.
- Anti-Racism I, a course of study offered by University of Colorado Boulder through Coursera, November 2020 – January 2021.

## HONORS AND AWARDS

2017 - BEST PAPER AWARD - I.L. Ciesielska-Wróbel, J. Knockaert, G. De Mey, et al., Shielding the electromagnetic waves by inserting conductive lightweight materials into woven curtains, International Conference on Intelligent Textiles and Mass Customization, 16-18 October, Ghent, Belgium.

2013 - A Certificate of Appreciation in recognition for the outstanding support as member of the scientific committee of the Symposium of Technical Textiles, Iasi, Romania, October 25.

2011 - A certificate of Appreciation for facilitating a scientific session at ITMA 2011 – International Exhibition of Textile Machinery, Barcelona, Spain.

2008 - A thank-you letter from the Rector of the Technical University of Lodz for outstanding work activity.

2007 - A thank-you letter from the Rector of Lodz University of Technology, Poland, Prof. Jan Krysiński, DSc., PhD., Eng. for the efforts put in dissemination of knowledge, for creative contribution and participation in the 7th Festival of Science, Technique and Art in the City of Lodz, which was held in April.

## CITATIONS

Google scholar: <https://scholar.google.com/citations?user=tj24nnYAAAAJ&hl=en>