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| **PERSONAL INFORMATION** |  | **Mulat Alubel ABTEW** Address: 131 Stanley Hall | Columbia MO 65211 E-mail: m.abtew@missouri.edu Phone: 5733556958 Professional Links: [ResearchGate](https://www.researchgate.net/profile/Mulat-Abtew), [ORCID](https://orcid.org/my-orcid?orcid=0000-0002-9820-8867), [Google Scholar](https://scholar.google.com/citations?user=dNkWcUcAAAAJ&hl=en&oi=ao) ,[Web of Science](https://www.webofscience.com/wos/woscc/full-record/WOS%3A000731355600002)  |
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| **RESEARCH INTEREST** |  | * Innovative and sustainable 2D & 3D textile design and manufacturing
* Fiber Reinforced Composites manufacturing and characterization
* Design and Engineering of Women soft body armor
* Smart and functional apparel for ability-diverse Individuals
* Advanced pattern making and Apparel design construction.
* Modelling & simulations of the human body for functional clothing design
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| **EDUCATION** **09.2016 – 06.2020****07.2008 – 06.2010****10.2000 – 06.2005****10.1998 – 06.2000** |  | **PhD degree:**1. *1. PhD in Automation & Production,* **Lille Université (ENSAIT) France**
2. *2. PhD in Textile Engineering,* **Soochow University, Suzhou, China,**
3. *3. PhD in Industrial Engineering,* **Technical University of Iasi, Iasi, Romania.**

**Dissertation:** Abtew, Mulat Alubel (2020) *3D designing process of clothing for women applied in Corsetry and ballistic protection using 3D warp interlock fabrics*.**Main course covered:** Production of technical textiles, Research Methodology, sustainable textiles and apparel product developments, 3D virtual apparel design, Corset development, CAD, etc.**Funding organization** – European commission under Erasmus Mundus Project in Sustainable Management and design for Textiles (SMDTex) program.**Institution: *National Institute of Fashion Technology (NIFT), Bangalore, India*** **Diploma:** *Master of Fashion Technology (Apparel design and production)* **Main course covered**: Apparel CAD, Virtual Reality, Orientations of design, overview of Fashion industry, Pattern Engineering, Advanced pattern making and construction, Fabric study & appreciation, Garment manufacturing process, Supply chain management, Organization behavior, Intellectual property right, Entrepreneurship management, Apparel marketing & merchandising, Retail management, Web-based product management, Apparel Technology (sewing, Cutting & Finishing), Apparel technology management, Computer integrated manufacturing, Apparel Costing etc.**Master thesis**: «*Implementation and application of Statistical Process Control to improve the value chain and its sustainability in Apparel Industry.* » **Institution: *Bahir Dar University, Engineering Faculty, Bahir Dar, Ethiopia*****Diploma:** *B.Sc. degree in Textile Engineering***Main course covered**: Textile fibers and polymer science, Theory on textile technology (Spinning, weaving, and Printing), Textile Technology (Yarn spinning and textile weaving), Advanced fabric manufacturing, Woven structure, Textile Physics, Yarn and Fabric testing and characterization, Textile mechanics, Textile finishing and Technology, Knitting and Non-woven fabrics, Theory of textile machine and design, Textile Business and Management CAD/ CAM, Functional and smart Textiles etc. **B.Sc. Thesis**: «*Effects of sizing on textile weaving process on the mechanical and physical properties of cotton warp yarn for clothing application* » **Institution:** *W****/o Siheen Technical & Vocational School, Dessie, Ethiopia*****Diploma**: *High School leaving certificate & Diploma in Auto mechanics***Main course covered**: General science courses including Biology, Chemistry, Physics, Mathematics etc. Practical courses on Operating lathe, Welding, and molding machine. and maintaining and repairing automobiles and spare parts. |
| **PROFESSIONAL EXPERIENCES****09.2023 – Current****09.2021 – 08.2023** **07.2021 – 08.2023** **09.2019 – 06.2020****03.2018 – 08.2019****09.2016 – 02.2018****07.2010 – 08.2016** |  | **Institution: *University of Missouri, Textile and Apparel Management (TAM)*****Responsibility**: *Post Doctoral Fellow* (*Future Faculty & Inclusive Excellence*)* - Engineering and developing functional textile and apparel equipment’s to respond for ability-diverse community individual including women, elderly, children, disabled etc.
* - Physical, chemical, dynamic, and static properties of textile materials for novel protective clothing
* - Teaching undergraduate and Graduate in Advanced textiles and Apparel courses

**Institution : *Lille Université, ENSAIT - GEMTEX Lab., Roubaix, France*** **Responsibility**: *Temporary Assistant Professor and Researcher** Teaching undergraduate and Graduate Textile and Apparel students (Textile for fashion and technical product, Apparel 3D design, Fashion innovation, Supply chain management, E-commerce, Algorithm and programing, system information, technical textiles, and product development)
* Supervising student projects related to human Centre design, product development, clothing comfort and technical textiles.
* Performing research on digital clothing, mathematical computation for clothing ease allowance, human-body-clothing interaction, product development.

**Institution: *Lille University and incubated at ‘Euramaterials’, France*** **Responsibility:** *Entrepreneurship with diploma* * Technical design; product development and sample making of ‘Innovative seamless women bulletproof vest for better protection and comfort.’
* Starting, implementing, and entrepreneurship skill for start-up a company
* Filing intellectual property rights for the product
* Marketing and commercialization of the new product

**Institution: *EiTEX, Bahir Dar University, Bahir Dar, ETHIOPIA*** **Responsibility**: *Assistant Professor** Teaching Graduate Fashion design and Technology students (Computer integrating manufacturing, Retail management and Technology, History of world Costume, Fashion Forecasting and Consumer Behavior).
* Supervising MSc (5) and co-supervising PhD student (2) on textile numerical modelling, Apparel product design and development, and clothing fit and comfort.
* Initiating and writing research projects in collaboration with partners
* Working on research for Scientific paper production and technology transfer

**Institution: *Soochow University, Suzhou, China*** **Responsibility**: *PhD Research Assistant* * Fracture and damage analysis of textile materials submitted to quasi-static and dynamic impact investigations.
* Impact performance and energy absorption of textile materials for protective clothing.
* Numerical modelling of textiles for producing fit, comfortable, and protective clothing.

**Institution:** ***‘Gheorghe’ Asachi Technical university of Iasi, Romania*** **Responsibility**: *PhD Researcher** Engineering and manufacturing of appropriate textiles for industrial (protective armor).
* Experimental testing, mechanical characterization, and optimizations of the developed textiles structure against comfort, fit and mechanical behavior.
* Molding behavior and its damage mechanisms of the woven fabrics (3D) for shaping seamless frontal armor panel patterns.

**Institution : *Lille Université, ENSAIT - GEMTEX Lab., Roubaix, France*** **Responsibility**: *PhD Researcher** Developing adaptive bust on women virtual mannequin for corsetry(bra) design
* Design and pattern development for multi-layer layer functional products (women's body armor) through reverse engineering and automatic pattern generation system and validation using 3D (CAD) computer design process.
* Constructing the 3D shape of women's body armor through molding techniques using 3D warp interlock fabric.

**Institution: *Bahir Dar University, Bahir Dar, Ethiopia*****Responsibility**: *Lecturer** Teaching courses for UG Fashion design and Apparel engineering students including Adobe for Apparel design, CAD in pattern making, Advanced pattern engineering, Apparel product development, Advanced garment construction etc.
* Supervision and evaluating of field-based internship placements
* Supervision of BSc and MSc theses in textiles, apparel design, and development.
* Organizing conferences and seminars for industry and institution networking.
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| **07/2005 – 06/2008****ADMINISTRATION & INDUSTRIAL EXPERIENCES****11.2015 – 08.2016****10.2014 – 10.2015****04.2013 – 09.2014****10/2011 – 04/2013****01.2010 - 06. 2010** |  | * Engaged in different extracurricular activities (chair in different curriculum assessment and development, provide training as community service for local small- and large-scale textile & garment industries, staff affairs committee etc.)
* Conducting scientific research independently as well as in collaboration in apparel design, anthropometric & sizing, and product developments.

**Institution: *Bahir Dar University, Engineering faculty, Ethiopia*** **Responsibilities**: *Graduate Assistant II & Assistant Lecturer** Delivering Laboratory classes for students on physical, chemical, mechanical textiles testing, analysis, and optimization.
* Assisting graduate students and researchers in their research, experiment, and final year fashion collection projects.
* Testing and analysis of fibers, yarns, fabrics, and apparels for various textiles and apparel producing companies.

**Institution: *Ethiopian Institute of Textile and Fashion Technology, Ethiopia*****Responsibilities**: *Apparel Research & Innovation Centre director** Managing staff members in the Center
* Establishing research collaborations’ and joint research projects
* Identifying and developing research thematic areas & research plan
* System design for effective laboratories utilization
* Writing research projects for grants in collaboration with the research team for funding.

**Institution: *Ethiopian Institute of Textile, Bahir Dar University, Ethiopia*****Responsibilities**: *Chair for Apparel and Design Centre of Competences** Conduct and coordinate research, publication and technology in the Center.
* Initiate and write grant proposal for funding.
* Develope a data-base for the research and generate income through research, technology transfer and consultancy.
* Responsible for Staff, Curriculum development and budget management

**Institution: *Ethiopian Institute of Textile and Fashion Technology, Ethiopia*** **Responsibilities**:*Deputy Chair for Garment and Design Centre of Competences** Developing the staffs academic and scientific profile.
* Set-up research teams for special research and technology transfer.
* Initiate a new applied research project every semester.
* Establish research collaborations with different Industry and Institution.

**Institution: *Ethiopian Institute of Textile and Fashion Technology, Ethiopia*****Responsibilities**: *Textile and Garment program coordinator* * Strategic planning and monitoring of the department
* Develop new scientific techniques and protocols for the in lab.
* Assigns academic time table schedules for lectures and laboratory class.
* Responsible for staff and assessing and developing up to date curriculums.

**Company: *Spark apparel Ltd., Raymond Group, Bangalore, India*** **Responsibilities**: *Project work** Processing of textile materials and its technology for garments, including finishing and quality assessment.
* Understanding the different garment manufacturing process (Trouser and coats)
* Garment finishing and analysis of quality parameters in the garment Industry.

**Project:** ‘*Implementation of the statistical process control in sewing section of suit trouser line for quality control, assurance and sustainable products’* |
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| **09.2013 - 08. 2016****PHD THESIS ADVISING/CO-ADVISING****PROJECT COLLABORATION** **TECHNICAL TRAINING AND CERTIFICATION****PROJECT FUNDING & AWARD** |  | **Company: *Narga Textile and Garment company, Bahir Dar, Ethiopia*.****Responsibilities***: Company focal person/Manager** Managing factory establishing team & Commissioning of machinery.
* Monitoring product development & manufacturing process.
* Design a system for effective utilization of factory and production schedules.
* assessing project and resource requirements and determining quality control standards.
* ‘3D Modelling and Patternmaking for Women Lower Torso Garments’

By Tibifez Hailu at TU Dresden, Germany and Bahir Dar University, Ethiopia P-Supervisor – Prof. Dr.-Ing. habil. Yordan Kyosev and Co-Supervisor- Dr. Mulat Alubel ABTEW* ‘Modelling yarn at the fiber level for textile material production’ by Desalegn Beshaw at TU Dresden, Germany and Bahir Dar University, Ethiopia.

P-Supervisor – Prof. Dr.-Ing. habil. Yordan Kyosev and Co-Supervisor- Dr. Mulat Alubel ABTEW* PhD thesis completed by Dr. Sara MOSLEH at University of Lille, France.

Development of Orthopedic Insoles and Shoes 3D Design Process for Atypical Foot Morphologies. * PhD thesis completed by Dr. Maneesh K. MISHRA at University of Lille, France.

Digital tools for developing customized co-design platforms with integration of comfort and fashion. * PhD thesis completed by Dr. Maria KULINSKA at University of Lille, France

New architectural and structural definitions of 3D warp interlock fabric for better design and production; Professor Francois Boussu and Dr Mulat A ABTEW * Engineering characterizations and optimizations of Multiaxis 3D textile fabrics for technical applications: Francois Boussu, Mulat A ABTEW & Ahmad Labanieh
* Training on ‘Realization’s techniques of 19th century corsetry’ by Haute Ecole Francisco Ferrer catégorie des arts appliqués (35 hours), Brussels, Belgium.
* Entrepreneurial Education training by Ethio-German Capacity Building Program (ECBP) The social affairs committee, Ethiopia.
* Improving to Teach”: Pedagogy + Didactics, Communication + Rhetoric and Microteaching by Ethio-German Engineering Capacity Building Program (ecbp), 2010 (32 Hours), Bahir Dar, Ethiopia.
* Installation, Operation, and maintenances of 3D Body Scanning system (TC2 – TYPE: 19M 3D Full Body Scanner’ by TC2 expert atEthiopian Institute of Technology for Textile, Garment and Fashion Design**’.**
* Light and Heavy-duty Sewing Machine Maintenance Training (30 Hours) atInstitute of Technology for Textile, Garment and Fashion Design**’.**
* Training on ‘Standout Graphics for a Standout Grant Proposal’ at University of Missouri.
* ‘Types and Uses of Generative AI workshop’ at University of Missouri.
* ‘Teaching and Learning in the Era of Generative AI’ at University of Missouri.
* Workshop on ‘Principal Investigation (PI) Leadership Training ‘Memorial Union, University of Missouri.
* Technical training on ‘Grant Writing and PI role’ University of Missouri.
* I involved as director of apparel production research & innovation center with other members and won around 500,000 € of the COE project among 10 other engineering institutes in Ethiopia, Funded by KFW-DAAD (Germany), mainly for purchasing laboratory facilities & human development.
* Received €2500 as International Thesis Award-2021.
* Received a 10,000 € fund and incubated in ‘Euramaterials’ of France to scale up the product on ‘Comfortable and protective women bullet proof vest.’
* Won University of Missouri Postdoctoral Research Grant program award ($750)
* Silver Award: Euro invent conference and Exhibition for paper ‘Dimensional(2D) p-aramid dry multilayer woven fabrics deformational behaviors for technical applications.
* Awarded around 12,000 € for different **innovative and outstanding research paper** by the Romanian government.
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| **LANGUAGES****COMPUTER SKILLS****TECHNICAL SKILL** **SOFT SKILL** **COMMUNITY PROJECT****PROFESSIONAL ACTIVITIES** |  | English: Proficient (C2 in speaking, writing, listening & reading)Amharic: Proficient (Mother Tongue)French: Intermediate (B1)Operating Systems: WindowsApplication Software: MS-Office, Spreadsheets, Adobe (Photoshop and Illustrator), Graphics Engineering Tools: Python, Solid Work, AutoCAD, CAD for design and  Pattern making (RichPeace, Optitex & Lectra), 3D.  modeling, Fit and Apparel virtualization technology. (3D design concept & Clo3D), Fiber & Fabric testing equipment (DMA, TGA, DSC, and SEM). Mechanical testing equipment (tensile, flexural  rigidity, shear, deformation, compactness etc.).  * Well skilled in design & developing advance 2D & 3D woven/Knitted fabrics.
* Fiber & yarn structural and evenness test equipment (DMA, TGA, DSC, & SEM)
* Textile weaving machine operation.
* Well-equipped in working principle and practical use of textiles testing equipment (Tensile, Bending, Bursting, Air Permeability, Shear, Abrasion, Deformation, Compression, yarn pull-out etc.)
* Non-destructive investigation methods (Optical microscope, 3D X-ray computed tomography, DIC and conventional X-ray).
* Fabric structure modelling software’s (WiseTex®, DB weave®, TexGen®).
* Garment designing (3D scanning®, Modaris®, Lectra®, Design Concept®).
* Advanced Patten Making skill both manually as well as using CAD software’s.
* Garment sewing machine operation and maintenance.
* Operating automatic cutting machine (GERBER), Plotter and Digitizer
* Decision making and change management at leadership institute, 2016, Ethiopia.
* LCA of Textiles by Bureau Veritas, Oct. 2016, Roubaix, France.
* Critical thinking skills and always appreciate others effort.
* Ability to work both independently and in collaboration.
* Self-motivated, consistent, organized and committed toward professions.
* Creative, and positive attitude & good communication skills to tackle problems.
* Good team player, responsible, excellent decision, and leadership skills.
* Ethiopian SMEs coaching project – Funded by MSM, The Netherland to supports apparel small and medium enterprises on new product design and development, Testing quality product manufacturing methods through TQM and Safety on production floor and process.
* Sustainable textile value chains Project –Funded by the GIZ-German, to develop an innovative & social business concept for sustainable job opportunities in Ethiopian apparel sector ***(from textile waste materials***)
* Apparel Production improvement project – Funded by Bahir Dar textile share company to develop the strategic plant layout and deliver sewing machine operation and repair training.
* Technology transfer Project – Funded by EiTEX to train the Ethiopian center Development (ECFD) students on enhancing design, pattern making, Garment sewing and marketing skills.
* Bahir Dar University Project – Funded by Bahir Dar project to design, pattern making, cutting and garment making of special uniforms for the executive secretaries of the office of the president and other vice presidents.
* Chair, Fashion show and organizing committee- International Conference on Cotton, Textile and Apparel Value Chain, Bahir Dar University, EITEX, Ethiopia.
* Guest Editor in *Materials* (MDPI) journal in the special issues ‘Advancements of 3D woven structure: Design, development and its application in technical textile’
* Guest Editor in *Materials* (MDPI) journal in the special issues ‘Advanced fabrics, Textiles and Fiber Reinforced Composites: Progress and Challenges’
* Guest Editor in Journal of Engineered fibers and fabrics in the special issues ‘3D woven fabrics: Engineering, Characterization, and their applications”
* Topic editor for *Materials* (MDPI) journal since March 2021
* Editorial board as Review Editor in *Frontiers in Polymetric and composite Materials*

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| **EXTRACARICULAR ACTIVITIES****QUALIFICATIONS & TRAINING****PERSONAL****AWARDS, HONORS and Grant****CERTIFIED JOURNAL REVIEW****AD HOC GRANT AND PHD THESIS REVIEWER****PROFESSIONAL MEMBERSHIP** |  | * Chair, Curriculum Review and Academic Standards Committee (2013-2016)
* Strategic Plan development committee for EITEX, BDU, Ethiopia.
* Ethiopian standard agency technical committee on textiles, ESA, Addis Ababa.
* Ethiopia National standardization committee for textile and garment category
* Organizing member of International Conference (CTA 201, 2013, 2014, 2015 and 2016), EITEX, Bahir Dar University (BDU), Ethiopia.
* Qualified to teach in higher education in the Ethiopian Higher education in the field of mechanical Engineering, Textile material and Apparel Production.
* Qualified for Teaching as **‘Maître de conference’** under France National higher education in the Section 60 – Mechanics, mechanical engineering, civil engineering, and Section 61 – Computer Engineering, Automatics and signal processing Section/Domain to teach in Higher Education.
* Improving to Teach”: Pedagogy + Didactics, Communication + Rhetoric and Microteaching by Ethio-German Engineering Capacity Building Program (ECBP), 2010 (32 Hours), Bahir Dar, Ethiopia.
* Pedagogical skills on ‘Learner centered Methods of Instruction and Evaluations of Students’ Learning’ by Bahir Dar University, Academic development, and Resource center.
* ‘Standout Graphics for a Standout Grant Proposal’ Sept. 22, MU.
* ‘Types and Uses of Generative AI’ Sept. 2023, MU
* ‘Teaching and Learning in the Era of Generative AI’, Oct.11, 2023, MU.
* ‘NSF Success Strategies’ Oct 31, 2023, MU.
* ‘Applying for NIH Supplements: Why, When and How’ Oct 20, 2023, MU.
* ‘MaxAbility Lunch and Learn: comfortable with being Uncomfortable, Feb 21, 2024. MU.
* ‘Advancement with a specific focus on external funding from corporations and foundations’Feb 27, 2024, MU.
* Received the “**International research thesis Award - 2021**” in Science and Technology for scientific excellence of young doctor and of the thesis, in view of quality scientific published work and the associated promotion (patent, license etc.) who trained in North of France among 6 doctoral schools graduated between Jan 1, 2019 – Dec. 31, 2020,
* Awarded **1st & 3rd best student** in department and faculty level in BSc study.
* Awarded full **government scholarship** for BSc and MSc study.
* Awarded full **PhD Fellowship** by European commission under SMDTex program.
* Congratulations & **Excellent** result of PhD thesis.
* Silver Award: Euro invent conference and Exhibition: To Dimensional(2D) p-aramid dry multilayer woven fabrics deformational behaviors for technical applications.

<https://publons.com/dashboard/records/review/> *Till now reviewed over 70 scientific peer- review records of 51 manuscripts for design, engineering, material science and defense journals including* Advances in materials  science and engineering (1), Clothing and textiles research journal (5), Composites science and technology (2), Composites (1), Defence technology (1), Fibers and polymers (1), High performance polymers (3), IEEE access (3), Industriatextilă. (1) International journal of clothing science and technology (1), Internationaljournal of damage mechanics (4), Journal of composite materials (1), Journal ofengineered fibers and fabrics (6), Journal of industrial textiles (1), Journal of materialsscience (5), Materials today communications (1), Materials (5), Polymer composites (1),Polymers and polymer composites (3), Polymers (8), Scientific reports (1), Sustainablematerials and technologies (1), Textile & leather review (1), Textile research journal (5)Conference review (AUTEX, ITAA)* *Reviewed 4 National grant project for Research grant council (Hong Kong)*
* *External review for 1 PhD candidates for Anna University, India*
* *Expert Judge committee for ‘Talented young designers support project’ with African Mosaique Annual fashion Gala of 2015/2016, Addis Ababa, Ethiopia*.
* International Textile & Apparel Association (ITAA)
* American Society for Composites (ASC)
* The Fiber Society
* National Postdoc Associations
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**RESEARCH**

**List of the scientific writing (paper published)**

1. ***Publications in international peer-reviewed journals***
2. **Mulat Alubel Abtew** (**2024**) Innovations, Advancements, and applications of 3D warp interlock fabrics and its composite materials, ***Composites Part B: Engineering*** *(IF-12.7)*, Volume 278, 111395. DOI: [10.1016/j.compositesb.2024.111395](http://dx.doi.org/10.1016/j.compositesb.2024.111395)
3. **Mulat Alubel ABTEW**, François BOUSSU, Irina CRISTIAN (**2024**) Exploring the Effects of angle of incidence on stabbing resistance in advanced protective textiles: Novel experimental framework and analysis, ***Defence Technology*** *(IF-5.0)****,*** <https://doi.org/10.1016/j.dt.2024.08.003>.
4. Bekinew Dejene, Adane Gudayu, **Mulat Alubel Abtew** (**2024**), Development and optimization of sustainable and functional food packaging using false banana (Enset) fiber and zinc-oxide (ZnO) nanoparticle-reinforced polylactic acid (PLA) biocomposites: A case of Injera preservation, *International Journal of Biological Macromolecules* (IF-7.7), Volume 279, Part 1, 135092. <https://doi.org/10.1016/j.ijbiomac.2024.135092>
5. Desalegn Beshaw Aychilie, Yordan Kyosev, **Mulat Alubel Abtew** (2022): [Automatic Modeller of Textile Yarns at Fibre Level](https://www.mdpi.com/1996-1944/15/24/8887), *Materials (IF-3.1)****,***15(24),8887. DOI:[10.3390/ma15248887](http://dx.doi.org/10.3390/ma15248887)
6. Mishra, M.K., **Mulat A. Abtew** \* & Bruniaux, P(**2022**). Customization of shoe last based on 3D design process with adjustable 3D ease allowance for better comfort and design. *Int J Adv Manuf Technol* *(IF-2.9)* 123, 3131–3146 https://doi.org/10.1007/s00170-022-10427-5.
7. M. Kulińska, **Mulat A. Abtew** \*, X. Zeng and P. Bruniaux (**2022**) ‘[Block pattern design system using 3D zoning method on digital environment for fitted garment](https://www.researchgate.net/publication/362279041_Block_pattern_design_system_using_3D_zoning_method_on_digital_environment_for_fitted_garment?_sg%5B0%5D=z8eVZ--Qg2OtXMRS2_bbKEH-moNJIJIPYT7znna12oubGiotC0MooP3Q804Ud7ZBTJAwVsIhQbv2AsVLwuoo_GD8u9B0g2Qq5Iufji57.9HgC7ahSnbNZPiYmLglIkhQ-hGMLHM3QwQS8SstQFRzC9JY7BiNq8Y3BHIrg1wfWvrvfFGpKdTBP0HEGZxa5BQ)’’ *Textile Research Journal(IF-1.9*. DOI: [10.1177/00405175221114164](http://dx.doi.org/10.1177/00405175221114164).
8. **Mulat A. Abtew**\*, F. Boussu, P. Bruniaux, C. Loghin, I.Cristian, Y. Chen and L. Wang (**2022**). Pattern Engineering for Customized Women Seamless Ballistic Protection Vest on 3D Virtual Mannequin. *Journal of Fibre Bioengineering and Informatics*(JFBI), 15, pp. 17-25.
9. Boussu, F., **Mulat A. Abtew\*** & Bruniaux P. **(2022**). 3D Warp Interlock Fabric Structure and their Applications in Soft and Hard Armour Protections. *Appl Compos Mater*29, 65–82.
10. **Mulat A. Abtew\***, F. Boussu, and P. Bruniaux. (**2022).** 3D woven fabrics- A promising structure for Women body armour development, In Kyesov, Y. and Boussu, F. (eds) ‘Advanced weaving Technology. Springer, Cham. https://doi.org/10.1007/978-3-030-91515\_18.
11. **Mulat A. Abtew** \*, M. Kulińska, X. Zeng and P. Bruniaux (**2021**). Determinations of 3D ease allowance in a virtual environment for customized garment design using fuzzy modelling. *Computers in Industry(IF-8.2)*, Volume 133, 103552
12. Tibifez H. N.**\***, T., Kyosev, Y., **Mulat A. Abtew**, & Krzywinski, S. (**2021**). Investigation of the visual appearance of different skirt styles and materials during the fitting simulation with Lectra Modaris”. *Communications in Development and Assembling of Textile Products*, 2(2), 141-150. <https://doi.org/10.25367/cdatp.2021.2.p141-150>.
13. Mosleh S., **Mulat A. Abtew \***, P. Bruniaux, G. Tartare, and Y. Xu. (**2021**). Developments of Adapted Clothing for Physically Disabled People with Scoliosis Using 3D Geometrical Model. *Applied Sciences,* 11(22),10655. <https://doi.org/10.3390/app112210655>.
14. Mosleh S., **Mulat A. Abtew \***, P. Bruniaux, G. Tartare, E. Loghin, and I. Dulgheriu (**2021**). Modelling and Simulation of Human Body Heat Transfer System Based on Air Space Values in 3D Clothing Model. *Materials*14(21),6675. https://doi.org/10.3390/ma14216675.
15. Mosleh S., **Mulat A. Abtew \***, P. Bruniaux, G. Tartare, Y. Xu**,** Chen Y. (***2021***). 3D Digital Adaptive Thorax Modelling of Peoples with Spinal Disabilities: Applications for Performance Clothing Design. *Appl. Sci****.*** 2021, 11(10), 4545. doi.org/ [10.3390/app11104545](http://dx.doi.org/10.3390/app11104545).
16. Mosleh S., **Mulat A. Abtew \***, Bruniaux, P.; Tartare, G.; Chen, Y. (***2021***). Developing an Adaptive 3D Vertebrae Model of Scoliosis Patients for Customize Garment Design. *Appl. Sci.*2021, 11, 3171. https://doi.org/10.3390/app11073171.
17. **Mulat A. Abtew \***, Francois B., Pascal B., (***2021***): Dynamic impact protective body armour: A comprehensive appraisal on panel engineering design and its prospective materials. *Defense Technology*,[17, 6](https://www.sciencedirect.com/journal/defence-technology/vol/17/issue/6),  2027-2049. doi.org/10.1016/j.dt.2021.03.016.
18. **Mulat A. Abtew\***; Boussu, F.; Bruniaux, P.; Hong, Y. (***2021***). Dynamic Impact Surface Damage Analysis of 3D Woven Para-Aramid Armour Panels Using NDI Technique. *Polymers,* 13, 877. doi.org/10.3390/polym13060877.
19. **Mulat A. Abtew\***, Francois Boussu, Pascal Bruniaux, and Han Liu\* (***2020***). Fabrication and characterizations of dry 3D warp interlock para-aramid fabric structures: Towards applications in composite reinforcement and ballistic applications. ***Materials.*** 13(4233),1-20. DOI: [10.3390/ma13194233](http://dx.doi.org/10.3390/ma13194233%22%20%5Ct%20%22_blank).
20. **Mulat Alubel Abtew\***, P. Bruniaux, F. Boussu, C. Loghin and I. Cristian (***2020***): Effect of Structural Parameters on the deformational Behaviors of Multiply 3D Layer-by-Layer Angle-Interlock Para-aramid fabric for Fiber-reinforcement composite. *Journal of composites science****,*** 2020, 4(4),145. DOI:[10.3390/jcs4040145](http://dx.doi.org/10.3390/jcs4040145).
21. **Mulat A. Abtew\***, Francois B., Pascal B., Carmen L., Irina C., Yan C. and Lichuan W **(*2020*)**: Yarn degradation during weaving process and its effect on the mechanical behaviors of 3D woven p-aramid fabrics for industrial applications. *Journal of Industrial Textile****,*** Volume 51, Issue 5, 9047S-9070S. https://doi.org/10.1177/1528083720937288.
22. **Mulat A. Abtew \***, Francois B., Pascal B., Carmen L., and Irina C. **(*2020*)**. Enhancing the Ballistic Performances of 3D Warp Interlock Fabric Through Internal Structure as New Material for Seamless Female Soft Body Armor Development. *Appl. Sci****.,*** *10*, 4873, https://doi.org/10.3390/app10144873.
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27. **Mulat A. Abtew\***, [Annu K., Ambika M. and Yan H.](https://www.researchgate.net/scientific-contributions/2139292160_Subhalakshmi_Kropi?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g)**[\* (](https://www.researchgate.net/scientific-contributions/2139292160_Subhalakshmi_Kropi?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g)*[2019](https://www.researchgate.net/scientific-contributions/2139292160_Subhalakshmi_Kropi?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g)*[)](https://www.researchgate.net/scientific-contributions/2139292160_Subhalakshmi_Kropi?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g)**[: Statistical analysis of standard allowed minute (sam) on sewing efficiency in apparel industry](https://www.researchgate.net/scientific-contributions/2139292160_Subhalakshmi_Kropi?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g). *Autex Research Journal*, 20 (4), 359-365. https://doi.org/10.2478/aut-2019-0045.
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30. **Mulat A. Abtew\***, Pascal B., Francois B., Carmen L., Irina C., Yan C. and Lichuan W. **(*2018*)**: A systematic pattern generation system for manufacturing customized seamless multi-layer female soft body armour through dome-formation (moulding) techniques using 3D warp interlock fabrics. *Journal of Manufacturing Systems***,** 49, 61–74. https://doi.org/10.1016/j.jmsy.2018.09.001. (Impact Factor= 9.498). (Citations -31).
31. **Mulat A. Abtew\***, Pascal B., Francois B., Carmen L., Irina C., and Yan C **(*2018*)**: Development of comfortable and well-fitted bra pattern for customized female soft body armor through 3D design process of adaptive bust on virtual mannequin. *Computers in Industry*, 100, 7–20. https://doi.org/10.1016/j.compind.2018.04.004.
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34. [Linzi P.](https://www.researchgate.net/profile/Linzi_Pu?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g), [Hong Y.](https://www.researchgate.net/profile/Hong_Yan27?_sg=u0P_ITKtcmarmLJtWgZYNvT_fxHsJUe-FjFUfcb-MNCMi3BN6l86t2VabItzVIMpxiHvDGM.hjF9Jp9VcaqckdydyhMU36pdTKqKoVIfRADb-5zzwZRee91JQkE7d0a3wNWQ17ThHgE_OeOYYBEEK4EpmSfL3g), [Melissa W.](https://www.researchgate.net/profile/Melissa_Wagner5), [Peiguo W.](https://www.researchgate.net/scientific-contributions/2148764031_peiguo_wang)\* and **Mulat A. Abtew (*2018*)**:Raincoat design for children for age group 7–8 years: A design development case study. *Industria textile*, 69(4):394–399.
35. **Mulat A. Abtew**, Manisha Y. and Nagender S.\*.(***2017***): Anthropometric Size Chart for Ethiopian Girls for Better Garment Design. *J Fashion Technol Textile Eng 5(2),2-11.*
36. **Mulat A. Abtew \*** and Duncan K. Ndwiga. (***2017***). A Study on Export Competitiveness and Comparative Advantage of Textile-Based Goods: A Case of African Growth Opportunity Act (AGOA) & Latin America Integration Association (LAIA) Countries. *International research journal of Business and Management,* 10, 1-12.
37. **Mulat A. Abtew \*. (*2017).*** Revealed Comparative Advantage of Footwear Industry: An Empirical Analysis for Selected African Countries. *International research journal of Business and Management*, 13, 57-73.
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39. Ambika Mehtre\***, Mulat Alubel Abtew,** Tesfu Berhane **(*2016).*** Establishing a rating scale for knitted garment industry based on man-machine ratio for Ethiopia. *Journal of Textile and Apparel, Technology and Management*10(1)
40. **Mulat Alubel Abtew \*. (*2015*).** Revealed comparative advantage of Ethiopian leather industry with selected African economies. *International Journal of Business and Economics Research* 4 (5), 229-237.
41. ***Articles submitted to peer-reviewed journals.***
42. **Mulat A. Abtew\***, P. Bruniaux, F. Boussu, C. Loghin, I. Cristian, Y. Chen and L. Wang **(2020**): Three-dimensional (3D) warp interlock p-aramid fabrics for the development of soft body armour with better flexibility and ballistic impact performance, Current applied physics (under review).
43. **Mulat ABTEW**, Francois Boussu\*, Xiaong Chen and Mengru Li (2023) Stabbing and ballistic resistances of the pre-deformed multi-ply three-dimensional warp interlock fabrics submitted to book Advanced textile structural composites forming (Under production)
44. Andualem Abeje, **Mulat ABTEW** ,Fentahun Kasie, and Bahredin Seid (**2024**), Optimized Model Formulation through Product Mix Scheduling for Profit Maximization in Apparel Industry , AUTEX research Journal (Under review)
45. **Mulat Alubel Abtew**, Ph.D Francois Boussu, PhD Irina CRISTIAN and Bekinew Kitaw Dejen (**2024**), Dynamic Stab Resistance of High-Performance Multi-layer Textile Materials: Influences of Fabric Type, Structure, Layering, and Ply Orientation, Composites Part A: Applied Science and Manufacturing (Under review)
46. Dejene, Bekinew; **Abtew, Mulat** ; Birlie, Alehegn; Woldeab, Misganaw (**2024**) Three-dimensional (3D) Knitted Spacer Textile Materials for Innovative and Advanced Healthcare Solutions: A Comprehensive Review, Journal of Industrial Textiles. (Under revision)
47. ***Conference Proceedings publications-peer-reviewed (reverse chronological order)***
48. **Mulat Alubel Abtew \***, C Loghin, I Cristian, F Boussu, P Bruniaux, Y Chen and L Wang **(2019)**: 3D warp interlocks p-aramid fabrics for composite reinforcement and ballistic vest applications: Effect of yarn density on its formability characteristics. *IOP Conf. Series: Materials Science and Engg*, 572, 012078 (1-8).
49. **Mulat Alubel Abtew \*,** Pascal Bruniaux and François Boussu **(2019)**: Customizations of women bullet-proof jacket through 3D design process. *Text Leat Rev* 2 (1), 23-31.
50. **Mulat Alubel Abtew\***, Pascal Bruniaux, Francois Boussu, Carmen Loghin, Irina Cristian, Yan Chen and Lichuan Wang (**2018)**: Experimental investigation of effects of stitching orientation on forming behaviors of 2D P-aramid multilayer woven preform. *AIP Conference Proceedings of the International Conference on Material Forming*(ESAFORM) 23 - 25 April 2018, 020001(1-8).
51. **Mulat Alubel Abtew\***, C Loghin, I Cristian, F Boussu, P Bruniaux, Y Chen and L Wang **(2018)**: Two-Dimensional (2D) P-Aramid Dry Multi-Layered Woven Fabrics Deformational Behaviour for Technical Applications. *IOP Conference Series: Materials Science and Engineering* 374 012055 (1-11).
52. **Mulat Alubel Abtew\***, P Bruniaux, and F Boussu **(2017)**: Development of adaptive bust for female soft body armour using 3D warp interlock fabrics: 3D design process. *IOP Conf. Series: Materials Science and Engineering* 2017, 254, 052001 (1-7).
53. **Mulat Alubel Abtew\***, F Boussu, P Bruniaux, Carmen Loghin, Irina Christian, Yan Chen and Lichuan Wang **(2021)**: Effect of Woven fabric structure on the ballistic impact performance for seamless women soft body armour design. Sciencesconf.org: lwang
54. ***Communication in international conferences and publication in the conference proceedings***
55. **Mulat Alubel Abtew\*†**, C Loghin, I Cristian, F Boussu, P Bruniaux, Y Chen and L Wang (2021): Pattern Engineering for Customized Women Seamless Ballistic Protection Vest on 3D Virtual Mannequin. *TBIS 2021 is a peer-reviewed conference, ENSAIT, Roubaix, France, 7– 8th July 2021*(Oral presentation - Online).
56. **Mulat Alubel Abtew\*†**, F Boussu, and P Bruniaux. (2021): 3D adaptive modelling of women body for fitted and protective soft body armor design**.***Clothing-Body Interaction* *Conference*, TU Dresden, **Dresden, Germany**, 2-3 June 2021. (Oral presentation - Online).
57. **Mulat Alubel Abtew\*†**, C Loghin, I Cristian, F Boussu, P Bruniaux, Y Chen and L Wang. (2019): Three-dimensional (3D) warp interlock p-aramid fabrics for the development of seamless female soft boy armour with better flexibility and ballistic impact performance. *Proceeding of Advanced Materials Conference (AAAFM-UCLA)*, **Los Angeles, USA**, 19-22 August 2019. (Oral presentation).
58. **Mulat Alubel Abtew\*†**, C Loghin, I Cristian, F Boussu, P Bruniaux, Y Chen and L Wang. (2019): Effects of woven fabric types on ballistic impact performance for seamless women soft body armour design. *Proceeding of the Lightweight Armour for Defence and security (LWAG)*, **Roubaix, France**, 8-9 October 2019, 1-9. (Oral presentation).
59. **Mulat Alubel Abtew\***, F. Boussu**†**, P. Bruniaux, C. Loghin, and I. Cristian (2019): 3D warp interlock fabric structure as a new material for women ballistic protective vest design. *Proceedings of the 19th world textile conference (AUTEX),* **Belgium, Ghent**, 11-15 June 2019. (Oral presentation).
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61. **Mulat Alubel Abtew\*†**, P. Bruniaux and François Boussu, ‘Customizations of women bullet-proof jacket through 3D design process’, Textile Science & Economy-19, **Zagreb, Croatia**.) (Oral presentation).
62. **Mulat Alubel Abtew\*,** P. Bruniaux, F. Boussu**†**, C. Loghin, I. Cristian, Y. Chen, and L. Wang. (2018): Investigating the mechanical Behaviours of 3D Warp Interlock Fabrics for Soft Body Armour Design. *Proceedings of the 1st World Conference on Advanced Materials for Defence (AuxDefense)* at **Lisbon, Portugal**, 4 -5 Sept 2018. (Oral presentation).
63. **Mulat Alubel Abtew\*†**, F. Boussu, P. Bruniaux, C. Loghin, I. Cristian, Y. Chen, and L. Wang. (2018): Effects of fabric density on bending behaviour of 3D warp interlock fabrics for composite and body armour. *Proceedings of World Textile conference (AUTEX)* at **Istanbul, Turkey,** 20-22 June 2018. (Oral presentation).
64. **Mulat Alubel Abtew\***, P. Bruniaux, F. Boussu**†**, C. Loghin, I. Cristian, Y. Chen, and L. Wang (2018): Formability behaviour of 3D warp interlocks P-aramid Fabric for soft body armor design. *Proceedings of International Conference on Textile composites (TEXCOMP)* at **Milan, Italy**, 20-21 Sept 2018. (Oral presentation)
65. **Mulat Alubel Abtew\*†**, P. Bruniaux, F. Boussu, C. Loghin, I. Cristian, Y. Chen, and L. Wang. (2018): 3D warp interlock p-aramid fabrics and its mouldability property for female ballistic vest design. *Proceeding of the 17th Romanian Textiles and Leather Conference (CORTEP)* at **Iasi, Romania**, 7-9 November 2018. (Poster presentation).
66. **Mulat Alubel Abtew \*†**, P. Bruniaux and F. Boussu (2017): Experimental investigation on 2D/3D aramid fabric forming capabilities. *Proceeding of 12th Joint International Conference on Innovative Materials & Technologies in Made-up Textile Articles, Protective Clothing and Footwear (CLOTECH)* at **Lodz, Poland,** 11-14 October 2017. (Oral presentation).

***Note*** \* = Indicates the corresponding author/s

 † = Indicates the conference oral/poster presenter

1. ***Book chapter***
2. **Mulat ABTEW**, Francois Boussu\*, Xiaong Chen and Mengru Li (2023) Stabbing and ballistic resistances of the pre-deformed multi-ply three-dimensional warp interlock fabrics submitted to book Advanced textile structural composites forming (Under production)

Mengru Li, Mulat Alubel Abtew, Xiaogang Chen, Francois Boussu (**2024**) Stabbing and ballistic resistances of the predeformed multiply three-dimensional interlock fabrics, in the book Advanced Structural Textile Composites Forming, In Woodhead Publishing Series in Composites Science and Engineering, Pages 495-526, ISBN 9780443215780, https://doi.org/10.1016/B978-0-443-21578-0.00020-2.

1. ***Patent File***
2. **‘***Tissu tridimensionnel à fils de chaîne entrelacés adapté pour résister aux impacts et gilet pare-balles pour torse féminin et son procédé de fabrication’ Reg. No: FR2307440, Filed date: 11/07/2023, Reference: 0443BR001FR: Patent Type: French patent.*

**TEACHING**

**NEW COURSE DEVELOPED**

1. Advance pattern making - Bahir Dar University
2. Embroidery Technology - Bahir Dar University
3. Product Engineering - Bahir Dar University
4. Textile Innnovations – Lille University (ENSAIT)
5. Advanced Textiles (TAM 4001) – Unversity of Missouri

**COURSES TAUGHT:**

***Lille University*** *- ENSAIT (École nationale supérieure des arts et industries textiles)*

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the course | Nature of the course | Course level | Learning methods |
| Lecture in hours | Tutorial class in hours | Practical work in hours | Total ECTS |
| Technical Textiles | 0 |  | 6 | 2 sem | BSc | Face to face |
| Supply Chain management | 12 | - | - | 1 semester | MSc | Face to face |
| connecting e-commerce (AI) | 4 |  | 12 | 1 semester | BSc | Face to face |
| System Information | 4 |  |  | 1 semester | BSc | Face to face |
| Algorithm and programming |  |  | 24 | 1 semester | BSc | Face to face |
| Textile Innovations |  |  | 18 | 2 semesters | BSc | Face to face |

***Bahir Dar University:*** *EiTEX (Ethiopian Institute of Textile and Fashion Technology)*

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the course | Nature of the course | Course level | Learning methods |
| Lecture in hours | Tutorial class in hours | Practical work in hours | Total ECTS |
| Weaving Technology | 2 |  | 6 | 7 (2 sem) | BSc | Face to face |
| Advanced Weaving  | 2 |  | 3 | 7 (2 sem) | BSc | Face to face |
| CAD in Fashion Design and pattern | 2 |  | 3 | 5 (4 sem) | BSc | Face to face |
| Flat Pattern making | 2 |  | 3 | 5 (3 Semester) | BSc | Face to face |
| Advanced pattern making | 1 |  | 3 | 5 (2 semester) | MSc | Face to face |
| Product engineering | 2 |  | 3 | 6 (3 semester) | MSc | Face to face |
| Apparel design, sewing & construction | 2 |  | 3 | 6 (3 semester) | BSc | Face to face |
| apparel study and appreciation | 3 |  |  | 3 (1 semester) | BSc | Face to face |
| Textile and apparel ornamentation | 2 |  | 3 | 5 (1 semester) | BSc | Face to face |
| Fundamentals of Design | 2 | 3 |  | 3 (3 semester) | BSc | Face to face |
| Embroidery Technology | 2 |  | 3 | 5 (2 semester) | MSc | Face to face |
| Retail management and Technology | 2 | 3 |  | 5 (2 semester) | MSc | Online |
| Computer integrated Manufacturing | 2 | 3 |  | 5 (1 semester) | MSc | Online |
| History of world costumes | 2 | 3 |  | 5 (1 semester) | MSc | Online |

**STUDENT ADVISING & MENTORSHIP**

* 15 BSc, 8 MSc, 1 PhD and 20 internship projects