



## Balakrishnan Subashini

### Lecturer (Unconfirmed)

M.Phil (UOM), BIS(Hons) (OUSL), CText FTI (UK), CTHE (USJ)

Department of Textile and Apparel Technology  
Faculty of Engineering Technology  
The Open University of Sri Lanka

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### Web links

#### Web of Science Researcher

: <https://www.webofscience.com/wos/author/record/IVH-4373-2023>

Google Scholar : <https://scholar.google.com/citations?hl=en&user=luLRD3wAAAAJ>

Scopus : <https://www.scopus.com/authid/detail.uri?authorId=57207728452>

Linked-in : <https://www.linkedin.com/in/subashini-balakrishnan-8962345a/>

ORCID : <https://orcid.org/0000-0002-9425-0734>

Research gate : <https://www.researchgate.net/profile/Subashini-Balakrishnan>

Academia Profile Link: [mart.academia.edu/SubashiniBalakrishnan](http://mart.academia.edu/SubashiniBalakrishnan)

### Research and Teaching Interests

Textile Processing, Coloration and finishing, Natural dyes, Fiber Science, Composites, Yarn Preparation, Smart e-textile wearables, Smart yarn for Health and well-being yarn, 3D Printing, Colour psychology weaving Technology, Functional clothing product development, Laundry technology, Ergonomics, Work Study for textile and Clothing Industry areas, Studies in Higher Education: Textile Education

### Academic Qualifications

SEP 2016 – OCT 2021

#### Master of Philosophy / University of Moratuwa

Textile and clothing technology

JAN 2011 – DEC 2015

#### Degree of Bachelor of Industrial Studies Honors / Open University of Sri Lanka

Academic standing : Second class

Field of Specialization : Apparel Production Management

Medium : English

OCT 06 TO APR 30, 2024

**Certificate in Teaching Higher Education / University of Sri Jayewardenepura**

NOV 2023

**Webinar on Leveraging fabric digitization and 3D material creation to drive business growth**

**/ The Textile Institute SIG, UK**

SEP 2022

**Training Programme on Consultant Development in Environmental Management Systems based on ISO 14001:2015 & ISO 14004:2016 Standards**

**/ National Cleaner production center**

NOV 2017

**Certificate / University of Sri Jayewardenepura**

Course on Research methodology and scientific writing

JUN 2017

**Certificate / University of Moratuwa**

Workshop on writing, publishing, presenting and LaTeX

**Certificate / National cleaner production center**

Consultant Development Training Programme on Chemicals Management and Safety :2020

One-day awareness programme on Green chemistry :2019

FEB 2021

**Certificate / Sri Lanka Foundation**

Workshop on training of trainers for textiles and batik instructors

**Certificate / Sri Lanka Institute of Textile & Apparel**

Workshop on Quality Assurance of Uniform Materials -2015

Seminar on vital aspects of laundry management and technology- 2015

**Workshop for Executive Staff / Indian Institute of Handloom Technology (Salem: India)**

Handloom Development Training Workshop for Executive Staff of Sri Lanka

2010 - 2011

**Diploma in Textile & Apparel Technology / Sri Lanka Institute of Textile & Apparel**

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**Professional Qualification**

Fellowship of The Textile Institute, Manchester, UK : CText FTI

University of Sri Jayewardenepura, Sri Lanka : Certificate in Teaching in Higher Education 2024

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## Work Experience

FEB 2024 – PRESENT

### Lecturer (Unconfirmed) / The Open University of Sri Lanka

TEACHING EXPERIENCE

Involved in teaching the following courses at the Open University of Sri Lanka:

Course Coordination:

- TAI3332 Garment accessories
- TAX4540 Garment manufacture
- TAX6556 Ergonomics

ACADEMIC PROJECTS GUIDED

### Administrative Roles

- Committee Member – Faculty of Engineering Technology Student Academic Conference of the Open University of SRI LANKA / 2024

### Assistant Technologist / Sri Lanka Institute of Textile & Apparel

- Proficient in **coordinating** comprehensive **training programs** and **consultancy services**.
- Experienced in curriculum development, timetable creation, lecturer and resource allocation, attendance record maintenance, examination planning, and overall monitoring of training activities until successful completion. Skilled in issuing certificates and continuous improvement of programs
- Conducting lectures for BSc Fashion, Diploma, Certificate, short and customized Programs
- Conducting Practical classes for BSc fashion, Diploma and Certificate Programs

### Conducted lectures for the customized programme offered to the following factories:

- Teejay Lanka PLC - Industrial Park Avissawella.
- Best Pacific Textiles Lanka (Pvt) Ltd (BPTL) - Makandura, Gonawila, Pannala
- Omega line (Pvt) Ltd – Vavuniya
- CBC Fashions (Asia) Private Limited- Tirupur, India
- Voguetex - Kohuwala, Nugegoda
- Dynawash Limited - Block A, Biyagama
- BAM (Pvt) Ltd - Thulhiriya
- Hayleys Fabric PLC - Narthupana Estate, Neboda,
- Cliftex Industries (Pvt.) Ltd. – Wattala
- Courtaulds clothing Lanka (pvt) Ltd- Katuwellegama
- Stretchline, Trainers to train- Biyagama

### Conducted lectures and coordinated customized programme offered to the following government organizations:

- Sri Lanka Catering services: Laundry management short course
- Sri Lanka Customs: Special Training Programme on Fabric technology for Sri Lanka Customs
- Ministry of Industries and Supply Chain Management: Training Programme on Textile Technology for Development Officers
- Ministry of Education: Training Programme on Textile Technology for Development Officers

## **Member of NVQ curriculum Development and Standard document formulation**

- NVQ 7/ B.TECH. Degree Textile and Apparel -2022
- NVQ5 & 6/ Textile Dyeing and Finishing Technology-2020
- NVQ5/ Merchandizing for Apparel -2021

## **The national-level project of the Batik, Tie & Dye Training Program conducted by SLITA**

•Awareness, Monitoring, and Inspection visits for Batik, Tie & Dye process – 2022 to 2023

2017 - 2024

### **Visiting lecturer/ National Institute of Education**

Bachelor of Education general degree program 2017/2020 Art Craft – Tamil medium (Course component: Fiber science, Yarn manufacturing, and Printing & dyeing technology.: Part Time

APR 2015 - SEP 2017

### **Technical Assistant / Sri Lanka Institute of Textile & Apparel**

Conducting lectures for Diploma & Certificate Programs

Conducting Practical classes for BSc fashion, Diploma, and Certificate Programs

SEP 2013 – APR 2015

### **Trainee/ Sri Lanka Institute of Textile & Apparel**

Handloom Industry development project, testing and conducting practical sessions Pre – Treatment, dyeing, printing, finishing & etc.

DEC 2010 - JUL 2011

### **Trainee/ Omega Line Ltd**

Overall production training at **Omega Line Ltd**.

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## **Administrative positions held at the Sri Lanka Institute of Textile & Apparel**

- Assistant in charge of the **Research Centre** at SLITA: - 2023
- Member of the Board of Studies at Sri Lanka Institute of Textile & Apparel (SLITA): - 2021- 2022
- Member of the **Technical evaluation committee** of the textile technology department at SLITA
- Member of **Research committee** at SLITA: - 2021
- Providing support for the projects conducted by the Department.
- Involved in Technical reports (**School uniform, Police, Armed force, Prison and navy uniform material, Religious cloth materials**) evaluation team.
- Member - Technical Evaluation Committee (TEC) - **School Uniform Materials (Twill and plain)**
- Member - Technical Evaluation Committee (TEC) – Hindu Religious cloth materials
- Member - Technical Evaluation Committee (TEC) – Sri Lanka Army, Sri Lanka Air Force and Sri Lanka Navy materials.
- Working as a research officer for the banana Yarn Manufacturing SLITA project.
- Involved in **curriculum development** for Degree program subjects: Apparel merchandising, Garment washing and finishing, Processing Technology, Fibre technology, and weaving technology.
- Productivity Improvement one-month Programme conducted in India for CBC Fashions (Asia) Private Limited- **Tirupur**.
- Successfully Organized and presented in the Research Launching Ceremony at BMICH 27th December 2019 (Research and Development of Banana Yarn Manufacturing)

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## Research & Publications

WORKED AS A RESEARCH OFFICER FOR THE NATIONAL LEVEL RESEARCH PROJECT “RESEARCH AND DEVELOPMENT OF BANANA YARN MANUFACTURING.”

Research Title: **Investigation of suitable methods to extract the fibres and optimization of treatment methods for Sri Lankan banana cultivars for textile material**

### International Journals (Science Citation Index Expanded)

- 1) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala, U.G.S (2019).** Investigation on improving banana fiber fineness for textile application. *Textile Research Journal* 89(21–22), 4398–4409. <https://doi.org/10.1177/0040517519835758>
- 2) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala, U.G.S (2019),** Study on dyeing behavior of banana fiber with reactive dyes, *Journal of Engineered Fibers and Fabrics*, 14 (22). <https://journals.sagepub.com/doi/10.1177/1558925019884478>
- 3) **Balakrishnan, S., Wickramasinghe, G.L.D., Wijayapala, U.G. S. (2020).** A novel approach for banana (Musa) Pseudo-stem fibre grading Method: Extracted fibres from Sri Lankan Banana Cultivars. *Journal of Engineered Fibers and Fabrics*, 15(2). <https://doi.org/10.1177/1558925020971766>
- 4) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala, U. G. S. (2020).** Physical and Chemical Characteristics of Mechanically Extracted Banana (MUSA) Fibers from Top Ten Sri Lankan Cultivars. *Journal of Natural Fibers*, 1–14. <https://doi.org/10.1080/15440478.2020.1848732>
- 5) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala, U.G.S. (2021).** Investigation on mechanical and chemical properties of mechanically extracted banana fibre in pseudostem layers : From Sri Lankan banana (Musa) cultivation waste. *Journal of Engineered Fibers and Fabric*, 16(1–10). <https://doi.org/10.1177/15589250211059832>
- 6) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala., U. G. S. (2021).** Eco-Friendly softening for banana Fibers from Sri Lankan banana cultivar: Influence on physical and chemical Properties on banana Fibers. *Journal of Natural Fibers*, 1–13. <https://doi.org/10.1080/15440478.2021.1982811>
- 7) **Balakrishnan, S. (2024).** Silk fabric dyeing with Basella alba (Sri Lankan green spinach fruit) natural dyes: Mordant-free dyeing approaches. *Industrial Crops and Products*, 222, 119337. <https://doi.org/10.1016/j.indcrop.2024.119337>

### International Conferences

- 8) **Balakrishnan, S., Wickramasinghe, G. L. D., Wijayapala, U.G.S,** Influence of enzyme and chemical pretreatment processes on the colours of banana fibres, *IEEE Symposium on 5th International Multidisciplinary Engineering Research Conference*, Date Added to IEEE Xplore: 29 August 2019. <https://ieeexplore.ieee.org/abstract/document/8818786>

### Local Conferences

- 1) **Balakrishnan,S., Perera, M.E.R, ,** The effect of detergents on colour deterioration of white school uniform shirting materials used in Sri Lanka The Open University of Sri Lanka, Faculty of Engineering Technology, Research session, 2016, A503, <https://ours.ou.ac.lk/wp-content/uploads/2017/04/A503-E.pdf>

- 2) **Balakrishnan,S., Perera, M.E.R**, A Study on the Influence of washing and hot pressing on the colour fastness of white School uniform material. The **Open University of Sri Lanka**, Faculty of Engineering Technology, Research sessions -**2015**, Student Academic conference -2015 abstract No .TT206
- 3) **Balakrishnan, S.**, Extraction of natural dyes from *Basella alba* (Sri Lankan green spinach) for Silk fabric: Mordant-free dyeing techniques towards Resource Efficiency, *1<sup>st</sup> Research symposium on Textile and Apparel Industry, Sri Lanka Institute of Textile and Apparel, 2023*
- 4) **Balakrishnan, S.**, Wickramasinghe, G. L. D., Wijayapala, U.G.S, Banana Fiber Extraction and Treatment for Textile Production: A Sustainable Approach, Cosmetic Textile and apparel, footwear, Leather and related wearable fashion accessories, pharmaceuticals, wellness products, nutraceuticals and related services and support system-based industry related research presentation and networking forum, **Ministry of Industries, 2023**

## Book Chapter

- 1) Textiles of Sri Lanka, Eco-Friendly Dyeing Techniques for Banana Fibers from Banana application in the Sri Lankan context. Promoting Sustainable Coloration Methods. (2024), Springer Nature Singapore, DOI: 10.1007/978-981-97-0569-6

### List of pending research publications

Publication (title, journal/conference)	Status (pending/under review/ Approved not published)
Book Name: <b>Banana Fibres and their Composites: Processing, Design, Properties and Applications (Book chapter- Elsevier's publication</b>	Pending (2024)

## Conducted awareness sessions for Research and Development of Banana Yarn Manufacturing

- **Department of Textile Industries** staff and trainees
- **BBC Sinhala News** and other local media
- Industrial Development Board (IDB) & Sri Lanka Export Development Board (EDB) representatives of the **southern province**
- **Eastern Province** handloom weavers
- Army officers of the **Dombagoda army camp**
- **Northern province** IDB officers at Mannar
- Batticaloa handloom weavers

## Conducted Fashion show (FASHION FIESTA) in INTEX SOUTH ASIA at Taj Samudra Hotel- 4<sup>th</sup> November 2018 - A Wealth from Waste design collections.

Trend forecasting

- Natural fibers (Banana Fibre)
- Sustainable textiles
- Unique

### Research Credentials (Google Scholar):

Google Scholar h-index : 6  
Google Scholar i10-index : 3  
Citations : 111  
Open Researcher and Contributor ID (ORCID) : 0000-0002-9425-0734

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### Peer-Reviewed International Journal Articles

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- 1) Experimental investigation of the frictional behavior of single glass fiber filament, *Journal of Engineered Fibers and Fabrics*:2023
- 2) Relationship between fiber fineness and diameter of natural fiber resources - *Journal of Natural Fibers*: 2020
- 3) Assessing Cotton Fabric's Physical Characteristics Post-Treatment with Banana Pseudostem Sap: Suitability for Reactive Dyeing Applications - ***Journal of Testing and Evaluation*: 2024**
- 4) A sustainable approach for tailoring coir-fibre based bio-adsorbent and its composite for industrial applications/***Biomass Conversion and Biorefinery/Springer Nature: FEB: 2024***
- 5) M. M. Rahmana, A.K. Dasb, S.C. Dasc, M. A. Uddinc., Physical and Chemical Characterization of Saccharum spontaneum Flower Fibre: A Potential Application for Insulation and Microbial Fuel Cells (M.F.C.) *Springer Nature/ Cellulose*
- 6) Investigation of Mechanical Properties of Sansevieria Zelanica Fiber Reinforced Composites with Epoxy and Polyester Resins, *The Journal of Engineering and Technology (JET)*, OUSL
- 7) Application of the Optical Fiber Diameter Analyzer for Assessing Cotton Fiber Ribbon Width- *Journal of Natural Fibers*: **2024**
- 8) Extraction and Characterization of Fibers from Ethiopian Ficus Thoningii Tree. Springer Nature, 2024

### Reviewer of the following international journals:

Taylor & Francis - Journal of Natural Fibers  
ASTM International - Journal of Testing and Evaluation  
SAGE Publications - Journal of Engineered Fibers and Fabrics  
Springer Publications - Biomass Conversion and Biorefinery and Springer Nature

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**Web of Science Researcher:** ID IVH-4373-2023

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### National level services

#### Industrial Development Board (IDB), Sri Lanka (2024)

Resource person for the Certificate Course in Fiber Based Technology

#### Ministry of Education

- Monitoring and Inspection visits for School Uniform manufacturing
- Capacity assessment for School Uniform manufacturing (Local manufacturing industries)

#### Ministry of Education

Gruhavidu Sisumaga - (2020)

13 years of Guaranteed Education Program – Textile lecture sessions videos

#### National Institute of Education (2016 - 2017)

- 13 years of Guaranteed Education Program - syllabus development
- Fashion design and Product development

- Textile technology
- Tamil Language technical translation of textbooks for Advanced level students
- Fashion design and Product development
- Textile technology

### **National Institute of Education (2021)**

- 10 and 11 years of Guaranteed Education Program – to develop vocational modules Fashion design

### **Visiting lecturer/ National Institute of Education**

- Bachelor of Education general degree program 2017/2020 Art Craft – Tamil medium (Course component: Fiber science, Yarn manufacturing, and Printing & dyeing technology).

### **Department of Textile Industry.**

- Participated as a supervisor for the Handloom examination (2013)

## **Professional Memberships/Affiliations**

- Member of the Textile Institute – United Kingdom.
- Organization for Women in Science for the Developing World (OWSD): (Full Membership) 29 August 2023– Trieste, Italy
- Life Member of the Sri Lanka Association for the Advancement of Science (SLAAS) – Sri Lanka
- An associate member of the Sri Lanka Academy of Young Scientists (SLAYS) – Sri Lanka
- Young Scientists Forum (YSF) Full Membership — Sri Lanka
- National Science Foundation, Science & Technology Management Information System, Member - Sri Lanka

## **Skills**

- Language
  - English
  - Tamil
  - Sinhala
- Expertise in **Testing of textile materials**
  - Textile fiber identification,
  - Light microscopic analysis,
  - Analysis of weave structure
  - FTIR analysis
  - Picks/inch, Yarn Count, Mass per unit area,
  - Color matching with data color 600 machine,
  - Back Staining, Skewness of the fabric
  - Print type (Reactive or Pigment),
  - Stain Removal,
  - Colorfastness to Domestic Washing,
  - Shade sorting and Evaluation of test results to choose the best sample.
- Knowledge of natural dyes, more than ten styles of printing (**batik, tie and dye**, etc.) and techniques like Screen, Block, Digital printing, etc.

## **Computer Technical Skills**

Operating Systems (Windows XP and other Windows-based operating systems)  
Office Applications (Office XP, Word, Excel, PowerPoint, and Outlook).



Internet Browsers: (Internet browsers, Internet Explorer, Mozilla Firefox, and Google Chrome),  
Computational Tools (Software installation)

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### **Academic Excellence:**

1. Appreciation certification for significant contribution in **Conference Paper Publications, 2023** (Title: Banana fiber extraction and treatment for textile production: A sustainable approach (Treasure From Trash: New Trend For Textile)
2. Appreciation award for, by producing Banana fabric, **“Going Green”, using agro-based raw material waste**, December 2019 (Ministry of Industries and supply chain management).
3. Appreciation of service for the contribution to the preparation of the **textile technology** component of the Home Economics curriculum (Grade 12 – 13) as **curriculum development committee** and **writer** (English)
4. Appreciation of service for the contribution to the preparation of the **Textile Design** component of the grade 10 vocational module **curriculum** (Implemented year2024) as a curriculum development committee, **writer (English), and translating** in Tamil medium
5. Appreciation of service for the contribution to **Fashion Designing** under guaranteed 13 years of education project as a member of the **curriculum development committee, writer (English) translating** in Tamil medium.

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### **REFERENCES:**

PROF. G.L. DHARMASRI  
WICKRAMASINGHE

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