

Dr. Manjunath R N

Scientist

Central Muga Eri Research & Training Institute
Central Silk Board, Ministry of Textiles: Govt. of India
Lahdoigarh, Jorhat-785 700, Assam, INDIA
Mail: manjunath.19.n@gmail.com, Mobile: 09599152138



Research interest

- 3D woven structures
- Composite materials
- Technical Textiles
- Silk Reeling & Spinning
- Silk Bi-product utilization
- Silk protein based bio-materials

Education

- **Ph.D, Textile Technology (2015-2019)**
Department of Textile & Fibre Engineering, Indian Institute of Technology, Delhi, India
Thesis title: Design and Development of 3D woven complex hollow structures and their composites for energy absorbent structures
- **Masters, Technical Textiles (2012-2014)**
DKTE Textile & Engineering Institute, Shivaji University, Kolhapur, India [1st Division-77%]
- **Bachelors, Textile Technology (2008-2012)**
GSKSJTI, Visvesvaraya Technological University, Belgaum, India [1st Division-75%]
- **Higher Secondary (2006-2008)**
Christ University, Bangalore, India [1st Division-78%]
- **Secondary (2006)**
Mother Teresa High School, Bangalore, India [1st Division-89%]

Research Work Experiences

- 2018 – till date Scientist, Central Muga Eri Research & Training Institute, Central Silk Board, Ministry of Textiles, Govt of India (Regular position since 1st November 2018)
- 2017 - 2018 Senior Research Fellow (Indian Institute of Technology, under MHRD, GoI)
- 2015 - 2016 Junior Research Fellow (Indian Institute of Technology, under DRDO, GoI)

Projects Undertaken

1. Breeding of muga silkworms for improved silk quality and disease tolerance - funded by Central Silk Board, Ministry of Textiles, Govt. of India with the budget of 2.2m (2019-22).
2. Grading of Muga silk yarn- Development of methods and procedure - funded by Central Silk Board, Ministry of Textiles, Govt. of India with the budget of 1.8m (2019-21).
3. Development of 3D Woven Silk Fabrics and Their Applications – approved for funding by Central Silk Board, Ministry of Textiles, Govt. of India with the budget of 2.3m (2020-22).

**One project related to improvement in quality muga cocoon and raw silk production is under formulation.

Position of responsibility

Sectional Head	: Supervising the gamut of administrative and research aspects of Post Cocoon Technology Section of CMER&TI, Central Silk Board.
Project Monitoring & Co-ordination	: Research Management folio that involves the technical review of progress in R&D projects, Monitoring the implementation of project and technology dissemination to the beneficiaries and stakeholders
Nodal Officer	: Seri-model village & Muga Raw Material Bank (MRMB Depot Assam)
Event Co-ordinator	: 44 th Indo-Japan Textile Research Symposium held at IIT Delhi, India

Publications

1. Khatkar, Vikas, B. K. Behera, and **R. N. Manjunath**. "Textile structural composites for automotive leaf spring application." *Composites Part B: Engineering* 182 (2020): 107662.
2. J Ganesh, **R. N. Manjunath**, V Khatkar. "Efficacy of Silk and its Proteins in Bio-medical applications." *Advances in Functional and Protective Textiles (2020)*, Elsevier (In press)
3. **R. N. Manjunath**, Amit Kumar, and K. P. Arun Kumar. "Utilisation of Sericulture Waste by Employing Possible Approaches". Sources, Impacts and Management - Contaminants in Agriculture (2020): ISBN: 978-3-030-41551-8, Springer Nature. (In press)
4. **Manjunath, R. N.**, Vikas Khatkar, and B. K. Behera. "Influence of augmented tuning of core architecture in 3D woven sandwich structures on flexural and compression properties of their composites." *Advanced Composite Materials* (2019): 1-17.
5. **Manjunath, R. N.**, Vikas Khatkar, and B. K. Behera. "Comparative assessment of Static and Dynamic Mechanical Properties of Glass and PET fiber Reinforced Epoxy Composites." *Materials Today: Proceedings* 18 (2019): 4048-4057.
6. **Manjunath, R. N.**, B. K. Behera, and Unsanhame Mawkhlieng. "Flexural stability analysis of composite panels reinforced with stiffener integral woven preforms." *The journal of the Textile Institute* 110.3 (2019): 368-377.
7. Khatkar, Vikas, Sakthi Vijayalakshmi AG, **R. N. Manjunath**, and B. K. Behera. "Formability Behaviour of 3D Woven Solid Structures with Varying Stuffer Binder Ratio." *Materials Today: Proceedings* 18 (2019): 2753-2759.
8. Khatkar, Vikas, **R. N. Manjunath**, Sandeep Olhan, and B. K. Behera. "Potential of Textile Structure Reinforced Composites for Automotive Applications." *Advanced Functional Textiles and Polymers: Fabrication, Processing and Applications* (2019): 65-98.
9. **Manjunath, R. N.**, and Bijoy Kumar Behera. "Emerging Trends in Three-Dimensional Woven Preforms for Composite Reinforcements." *Advanced Textile Engineering Materials* (2018): 463-497.
10. **Manjunath, R. N.**, and B. K. Behera. "Modelling the geometry of the unit cell of woven fabrics with integrated stiffener sections." *The Journal of The Textile Institute* 108.11 (2017): 2006-2012.
11. Khatkar, Vikas, Sakthi Vijayalakshmi AG, **R. N. Manjunath**, and B. K. Behera. "Experimental investigation on the mechanical behaviour of textile structural composites reinforced with various fibre architecture." *Mechanics of Composite materials (accepted)*.
12. **Patent** - Three-dimensional integrated weaving of wind blade composite, Indian Patent application No: 201911000191, Date of filing: 02 January, 2019

International Conferences:

1. **Manjunath R. N & B. K. Behera**, “Design & Development of Integrated composite wing structure using 3D woven fabric preforms”, International Conference on Advances in Textile Materials and Processes, **Indian Institute of Technology Kanpur**, 19th-20th November 2018.
2. **Manjunath R. N & B. K. Behera**, Mechanical performance of high energy absorbent 3D woven hollow structures, Eight World Conference on 3D fabrics and their applications, **University of Manchester, United Kingdom**, 27th-29th March 2018.
3. **Manjunath R. N & B. K. Behera**, Design & Development of 3D woven spacer fabrics with complex profiles for high performance sandwich structures, 44th Indo-Japan Textile Research Symposium, **Indian Institute of Technology Delhi**, 14th – 16th December, 2016.
4. **Manjunath R. N & B. K. Behera**, Stability analysis of 3D woven composite panels with integrated stiffeners, International Conference on Advances in Functional, Smart and Innovative Textiles, **PSG IAS Coimbatore, India** on 10th – 12th December 2015.
5. Moisture Transportation in Air-Jet Textured yarns and their knitted fabrics, International Conference on Emerging trends in traditional and Technical Textiles, **National Institute of Technology Jalandhar, India**, 11th – 12th April 2014.
6. Wound Care Materials, MEDITEX International Conference 2014, **SITRA, Coimbatore, India**.

Membership/Fellowships

- Life Member, The Indian Natural Fiber Society, ICAR-NINFET, Kolkata, India
- GATE Master’s Educational Scholarship, 2012-2014
- DRDO fellowship, Indian Institute of Technology Delhi, 2015-2017
- MHRD fellowship, Indian Institute of Technology Delhi, 2017-2018
- International Travel Grant, IIT Delhi, 2018

Training/Workshops

- Winter School training program on ‘**Advances in product diversification and waste utilization of natural fibers**’ Indian Council of Agriculture Research – National Institute of Natural Fibre Engineering and Technology, 3rd to 23rd December 2019, Kolkata, India
- North East Centre for Biological Sciences and Healthcare Engineering (NECBH) workshop on '**Medical Devices and Rehabilitation Engineering**', Indian Institute of Technology Guwahati, India, 27th-29th March 2019.

Affiliations

- Central Silk Board, India
- Shivaji University, Kolhapur
- Indian Institute of Technology Delhi
- ICAR-NINFET, Kolkata

Additional Information:

Reviewer: Journal of Industrial textiles, SAGE Publications

Leisure interests: Cricket, Swimming, Badminton, Cookery

Declaration: I hereby declare that all the details provided are true to the best of my knowledge

Dr. Manjunath R N