



1. Full Name(in Block Letters) :**Sangappa N Shillin**  
 2. Designation :Scientist –D (R&S)  
 3. Department /Institute :Mulberry Silk Reeling Division,  
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 Institute, Central Silk Board, BTM Layout,  
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 6. Educational Qualification

#	Name of the college /University	Degree exam passed	Year of Passing	Subject taken with specialization
1	SKSJTI Bangalore, Bangalore University	B.Tech (Textiles)	1988	Textiles (Knitting & Blends)
2	SKSJTI Bangalore, Bangalore University	M.Tech (Textiles)	1991	Textiles technology
B.Tech (Textiles) Project		Activity sampling in Weaving.		
M.Tech (Textiles) Seminar		Fabric Handle.		
M.Tech (Textiles) Project		Development of Denier Indicator silk reeling machine		
M.Tech (Textiles) Thesis		Development of Silk Knitting		

#### 7. Experience : 28 Years

Sl.No.	Name of the employer	Position / Designation	Period of service (in Years)
1	Woollen & Textile Mill Ltd., D B Pura	Superisor	1988
2	BLR Knits Pvt. Ltd., Bengaluru	Deparmental Head	1991
3	SCTH, CSB, MALDA	SRA	1991 to 1997
4	CSTRI, CSB, Bengaluru	SRO	1997 to 2003
5	CSR&TI, CSB, Mysuru	Scientist C	2003 to 2006
6	CSTRI, CSB, Bengaluru	Scientist D	2006 onwards

#### 8. Areas of research interest:

1. Application of Mechatronics in silk industry
2. Plasma & nano technology for silk industry
3. Silk Reeling,
4. Silk weaving preparatory, weaving, wet processing, printing, finishing and testing

#### Research projects completed

- Up gradation of equipments / technology for quality improvement
- Process control gadgets in silk reeling
- Development of dupion silk reeling technology for producing superior grade dupion raw silk.

- Reeling programme under JICA Assisted project Strengthening Extension System for Bivoltine Sericulture (PEBS)
- Improvement of silk quality in polyvoltine cocoons. (P.I)
- Induction of colour to the larvae and cocoons of silkworm, *Bombyx mori*.L.(P.I)
- Breeding for disease resistant silkworm Evolution of productive bivoltine silkworm resistance to BmDNV1
- Effective by-product utilization through the development of silk nonwovens (P.I)
- Studies of influence of weaves on silk fabric properties (P.I)
- Study of comparative functional and aesthetic properties of cloth woven with parallel and swing beat-up. (P.I)
- Development of a suitable technique to tap the alternative energy resources for avoiding carbon dioxide emission and deforestation in silk reeling. (C.I)
- Comparative study of the fabric characteristics made from Chinese and Indian bivoltine, multibivoltine fabric with reference to the consumer preference

### Exploratory research work completed.

- Impact of different type of mountages on raw silk production and quality
- Studies on the critical factors affecting the winding breaks.
- Studies on correlation between winding breaks and size deviation of raw silk.
- Studies on the effect of low pressure air plasma treatment on silk yarn and fabric.
- Correlation between solubility of sericin and reelability of CSR2xCSR4 hybrid cocoons of *Bombyx mori* L.”
- Development of silk embroidery thread
- Design and development of parallel beat – up mechanism for handloom (frame and pit loom)
- Application of nano silicon to the silkworms to improve sericin dissolution.
- Exploring the technique for high-end power loom (rapier looms) to produce Indian traditional tie and dye effect fabrics.
- Development of different GSM raised eri and mulberry blankets.
- Studies on the effect of low pressure air plasma treatment on silk yarn and fabric.
- Recycling of water discharged from Silk reeling unit
- Development of Digital length measuring meter
- Wash & Light fast silk dyeing technology.

### Paper publication

1. Chowdhury, S.K, S. Roy and Shillin Sangappa.(1995) Low Cost Fire Burnt Cocoon Drying Chamber, *Indian Silk (10)* pp33-40
2. Dandin, S.B, S. Nirmal Kumar, Kanika Trivedy and S. Sangappa. (2005) coloured silk: a preliminary report, *Indian Silk*, 41(10):23-24
3. Naik, V.S, Shillin, S.N, Hariraj, G, Mahesh, K.N, Subrata Roy. and Somashekar, T.H. (2002) Reeling technology package for quality dupion silk, *Indian Silk*, 41(10):23-25
4. Shillin Sangappa, Dandin, S.B, Kanika Trivedy and Nirmal Kumar, S (2007) Coloured cocoons to coloured silk *Indian Silk*, 22
5. Kariyappa, **Shillin Sangappa**, Subrata Roy, Somashekar, T.H, (2007) “Effect of mechanical raising on properties of eri spun silk fabric”, *Journal of the Textile Association* (March-April):277- 281.
6. Ravindra Singh, P. Rama Mohan Rao, **Shillin Sangappa**, V.Premalatha and H.K.Basavaraja.,(2007) Correlation between different characters of the silkworm, *Bombyx mori* L, *Indian Journal of Sericulture* 46(1):80-85.
7. Kariyappa, **Shillin Sangappa**, G.N. Ramaswamy, Subrata Roy, T.H. Somashekar and P.M. Damodara Rao.,(2007) Effect of mechanical raising on low stress, surface properties and total hand value of white eri spun silk fabric, *Man-made Textile in India* (December):441- 449.

8. **Shillin Sangappa**, Bhanuprakash Raj, Srinivas G, and Dandin S, B. (2010) “ Impact of different types of mountages on raw silk production and quality”, *Nippon silk Gakkaishi (Journal of Silk Science Technology)* . 18,: 15-19.
9. Ninge Gowda K N, Naveen V Padaki, **Shillin Sangappa**, Mishra S N, Sudhakar R, and Rajeev Munshi: (2010) “Natural black dye from the nuts of *Semecarpus Anacardium*”: *Asian Dyer*, Vol 7 No.3; .pp 50 - 52.
10. P. Rama Mohan Rao, Ravindra singh, **Shillin Sangappa**, V.Premalatha H.K.Basavaraja and A.K Palith,(2008) Filament size variation in polyvoltine breeds of the silkworm, *Bombyx mori* L, *Indian Journal of Sericulture*. 47(1): 34-39.
11. **Shillin Sangappa**, Thimmareddy, G., Joseph, M.A. and Subrata Roy, (2008) “ Solubility of sericin and reelability of Indian hybrid cocoons”, *Asian Textile Journal*. (November):70-73.
12. Aabid Khaliq Tantray, Kanika Trivedy and **Shillin Sangappa**: (2009), “Studies on the effect of dietary vitamin C supplementation on reeling traits of the silkworm, *Bombyx mori* L, *Journal of the Textile Association*. 70(3): 103-107.

#### Paper presentation- conference / seminar

1. **Shillin Sangappa**, Subrata Roy, B.G. Patil and K.N.Mahesh:, (2008) “A study of reason for breaks occurring during winding process of Indian raw silk” *International Sericulture Commission 's Congress*, Athens, Greece (3<sup>rd</sup> - 6<sup>th</sup> of November). PP186-191
2. **Shillin Sangappa**, Subrata Roy, Ramaswamy G.N and Jaganathan K. (2008), “Application of silk selvedge waste in nonwovens” *International Conference on Technical Textiles and Nonwovens*” Department of Textile Technology, IIT, Delhi. (11<sup>th</sup> - 13<sup>th</sup> November).
3. **Shillin Sangappa** , S. Roy and Prabhakar, H.R. : (2009) “The application of low pressure air plasma treatment to textiles” *Internal Textile Conference: Engineering, Technology, Manufacturing & Mangement*, Team Tech Textile, Bangalore (16<sup>th</sup> - 18<sup>th</sup> of April).
4. Jaganathan K and **Shillin Sangappa**.: (2009) “CSTRI Improved handloom-II” *International Textile Conference: Engineering, Technology, Manufacturing & Mangement*, Team Tech Textile, Bangalore (16<sup>th</sup> - 18<sup>th</sup> of April).
5. Shillin Sangappa , S. Roy and Prabhakar, H.R. : (2010) “The application of low pressure air plasma treatment to textiles”: *Indo-Japanese symposium on “Recent Advances in Sericulture Research”* Bangalore (30.04.2010 to 01.05.2010).pp- 56
6. **Shillin Sangappa**, Uday Javali C and Prabhakar, H.R. : (2010) “The application of low pressure air plasma treatment to Indian wild silk fibre”: *6<sup>th</sup> International Conference on Wild Silkmths*, Tokyo, Japan (21<sup>st</sup> 09.2010 to 21<sup>st</sup> 09.2010).pp-66.
7. **Shillin Sangappa**, K.N. Mahesh, Subrata Roy, and Nanjunda Sastry., (2008) “Studies on correlation between winding breaks and size deviation of raw silk” *21<sup>st</sup> National Convention of Textile Engineers*, Bangalore.(21-22, February).
8. Jaganathan K, **Shillin Sangappa**.,Ramaswamy G.N, Subrata Roy, (2008), “CSTRI, improved handloom (MODEL-II) with pneumatic lifting mechanism ( PLM ) for the jacquards : A boon for the handloom weavers” *Conference on “Leveraging Innovation & Invention: Enhancing Competitiveness*, NRDC, Delhi. (13<sup>th</sup> October).
9. **Shillin Sangappa**, Subrata Roy and Dandin, S.B.: (2009) “A study of theory of eri cocoon (*samia ricini* b.) drying” *National Conference on Vanya Silk*, NASSI, CMER&TI, Lahdoigarh, Assam (28<sup>th</sup> - 30<sup>th</sup> of January).
10. **Shillin Sangappa**, S. Roy, Subrta Das and Prabhakar, H.R., (2009), “The application of low pressure air plasma treatment to silk yarn.” *National Workshop on Eco-friendly Plasma Application in Textiles*” Institute for Plasma Research, Gandhinagar, Gujrat”,. (10<sup>th</sup> - 11<sup>th</sup> November).

11. **Shillin Sangappa**, S Roy and Dinakar Bhat, (2010), “Development of silk embroidery thread” *Twenty third national Convention of Textiles Engineers*” Institute of Engineers (India), Delhi State Centre, “Engineers Bhawan”, New Delhi. (26<sup>th</sup> - 27<sup>th</sup> March):77.
12. Joseph M.A., Ambika P.K. and **Shillin Sangappa**, (2010), “Prohibition of Hazardous azo-dyes - The scenario after 13 years of the ban” *Twenty third national Convention of Textiles Engineers*” Institute of Engineers (India), Delhi State Centre, “Engineers Bhawan”, New Delhi. (26<sup>th</sup> - 27<sup>th</sup> March).

#### **Book**

1. The application of low pressure air plasma treatment on silk-Woodhead Publishing
2. Biotechnology applications in textile effluent treatment- APH Publishing Corporation.

#### **Student guide ship**

1. Silk Medical Textiles
2. Silk nonwoven product development & value addition
3. Studies on comparative physical properties of biodegradable (silk) and non-biodegradable (polyester) nonwovens”
4. A study on application of plasma enhanced nano chemical deposition to improve functional properties of silk fabrics
5. Design and development of silk yarn abrasion tester
6. Study on tensile and structural properties of pure and their hybrids silk fibers

#### **Award**

1. Institute of Engineers (India)-“The Best Textile Engineer (Silk R&D)”
2. JICA-Bivoltine Sericulture Technology in India
3. Rwanda-Certificate of good performance and satisfaction & high level of professionalism

#### **Membership**

1. Pattern Member- The Textile Association (India).
2. Life member-National Academy of Sericultural Science, India (NASSI)
3. Life member-Indian Journal of Sericulture (IJS)
4. Life member-Nippon Silk Gakkaishi (Journal of Silk Science Technology, Japan )
5. Pattern Member-Govt. S.K.S.J.T.I, Bangalore Alumni Association.

#### **Consultancy**

1. M/s. J.J. Exports, Bangalore (EOU)-Suitable technique to prevent the exfoliation problem of silk fabric
2. Rwanda, Central & East Africa -Silk reeling / weaving technology, cocoon / silk quality control and silk market development and Strengthening silk value chain in Rwanda

#### **Patent**

1. Induction of colour to mulberry silkworm and cocoons
2. Parallel beat – up mechanism for frame and pit loom handloom