

Educational Qualification : M.Sc., M.Phil., Ph.D.,NET., Indo-US Raman Post Doc-Fellow (USA)

**Ph D Award: 02-05-2008**, Thesis Title: **Studies on natural and man-made polymers using X-ray diffraction method.** Research supervisor: Prof. R Somashekar Ph D., C Phys, University of Mysore, Mysore – 570 005, INDIA

**Indo-US Raman Post-Doctoral Research:** Green Synthesis of Silver nanoparticles, Supervisor: Prof. Youjiang Wang Year: 2014-2015, 12 months, Georgia Institute of Technology, Atlanta GA – 30332, USA

Area of Specialization : Materials Science

**Research Field:** Polymers, Biomaterials, Effects of ionizing and non-ionizing radiations on polymers, Natural and Synthetic Fibers, Nanocomposites, Green synthesis of noble metallic Nanoparticles, Antibacterial and Anticancer Properties, Polymer Blends, Macromolecules, WAXS

National/International Reputed Journals & Conf. Proc. : 81

Presentation in national/international conf/symposia.. : 65

Number of Ph.D. Candidates Successfully Completed : 02

Number of Ph.D. Candidates Currently Working : 06

Major Research Projects : Principal Investigator (UGC, BRNS, DST, CSIR, SERB)

Completed Research Projects : 05

Ongoing Research Projects : 01

Amount mobilized : Rs. 1.12 Cr

S.No	Title	Agency (Period)	Amount	Term
1	Effects of 8 MeV EB irradiation on the physical and mechanical Properties of commercial silk fibers Principal Investigator : Dr. Sangappa	UGC-New Delhi (2008-2011)	5.92 L	3 Years Completed
2	Radiation Processing of Non-mulberry Silk Fibers Principal Investigator : Dr. Sangappa	DAE-BRNS Mumbai (2010-2013)	21.64 L 01.92 L	3 Years Completed
3	Physical, Mechanical and Thermal properties of Indian Hemp (Cannbis Sativa L.) Fibers (Young Scientist – Scheme) Principal Investigator : Dr. Sangappa	DST-SERC New Delhi (2011-2014)	19.14 L	3 Years Completed
4	Degradation of Silk Fibroin byUV-Irradiation Study Principal Investigator : Dr. Sangappa	CSIR – New Delhi (2012-2016)	18.07 L	3 Years Completed
5	Preparation and Characterization of <i>Bombyx mori</i> Silk Fibroin Films Principal Investigator : Dr. Sangappa	SERB, DST New Delhi (2013-2015)	04.44 L	2 Years Completed
6	Synthesis of Gold Nanoparticles Using Silk Fibroin as Biotemplate – Characterization and Sensor Applications, PI: Prof. Sangappa	SERB – DST, Govt. of India, New Delhi (2016-2019)	40.00 L	On-going

**No of Ph.D. Research Students Working:**

<b>Name of the Student</b>	<b>Title of the Thesis</b>	<b>Name of the University</b>	<b>Month and Year of Registration</b>
Mahadeva Goeda	Effects of UV-Irradiation on Bombyx mori Silk Fibroin Films	Mangalore University	Registered on 07-01-2013
Latha S	Effects of Gamma-Irradiation on Structural and Mechanical Properties of Bombyx mori Silk Fibroin Films	Mangalore University	Registered on 07-01-2013
Harish K V	SF-HPMC-AgNPs composites	Mangalore University	Registered on 04-01-2014
Parushuram N	Synthesis of Gold Nanoparticles using Silk Sericin – Characterization and Potential Anticancer Study	Mangalore University	Registered on 20-02-2017
Ranjani R	Synthesis of Gold Nanoparticles using Silk Fibroin – Characterization and Sensor Applications	Mangalore University	Registered on 20-02-2017
Shilpa M	Synthesis of Silver Nanoparticles using Silk Sericin – Characterization and Potential Antibacterial Properties	Mangalore University	Registered on 20-02-2017
Harish K S (Co-Guide)	Synthesis of Silver Nanoparticles using Silk Sericin – Characterization and Potential Anticancer Study	Mangalore University	Registered on 28-02-2017

**Academic Achievements:**

- Indo-US Raman Post-Doctoral Research Fellowship (2014-2015) – Georgia Institute of Technology, Atlanta, Georgia – USA.
- DST and INSA Grants Award for research presentation in the International Conference on POLYCHAR18-World Forum for Advanced Polymeric Materials, -2010.
- Awarded “DST-SERC Fast Track Research Project entitled, “Physical, Mechanical and Thermal properties of Indian Hemp (Cannabis Sativa L) Fibers” under young Scientists’ scheme, Department of Science and Technology, Govt. of India, New Delhi.
- Reviewer for Fibers and Polymers – Springer Journal
- Invited as Evaluator for Science Experiments. Dist. Level Science Exhibition 2001, Mandya Dist. (Yuvaraja’s College)
- Invited as Judge and Chief Guest for Dist. Level, Science Experiments, Exhibition 2011, Kumata Uttar Kannada – DST-INSPIRE Programme.
- Reviewer for Ionics Springer Journal
- Reviewer for Materials Research Innovations
- Reviewer for Materials Letters – Elsevier Journal
- Reviewer for DAE-SSPS Proceedings (AIP Publishing)
- Reviewer for Radiation Effects and Defects in Solids – Taylor and Francis

- Reviewer for Macromolecular Research - Springer
- Reviewer for Physics and Chemistry of Solids – Elsevier

Ph D Thesis adjudicated: 04

#### Membership of Professional Organization/Association:

- Member - Department of Studies in Physics Mangalore University
- Life member - Indian Physics Association (IPA), Bhabha Atomic Research Center, Mumbai
- Life member - Indian Society for Radiation Physics (ISRP), Bhabha Atomic Research Center, Mumbai
- Member - Raichur Dist. Physics Teachers Association
- Member - Indian Science Congress Association (ISCA), Kolkata
- Member - Materials Research Society (MRS) – Singapore
- Member – Asian Polymer Association IIT New Delhi
- Member – BOS PG in Physics, Mangalore University
- Member – BOAE in Physics, Mangalore University
- Member – BOS, PG in Physics, Yuvarajas College, Univ. of Mysore
- Member – PURSE Lab Implementation Group, Mangalore University
- Member – PMB, Central University of Karnataka, Kalaburagi

#### Foreign Visits:

S.No	Name of the Country	Place	Purpose and Date	Financial Assistance
1	Malaysia	Malaysian Nuclear Agency, Kuala Lumpur	ICNX – 2009 Int. Conf. 28 <sup>th</sup> June -1 <sup>st</sup> July 2009	Mangalore University
2	Germany	University of Siegen, Siegen	POLYCHAR18, Int. Conference 06 <sup>th</sup> – 10 <sup>th</sup> April 2010	DST/INSA Govt. of India
3	Singapore	Materials Research Society	ICMAT, Int. Conf. 30 <sup>th</sup> June – 5 <sup>th</sup> July 2013	Mangalore University
4	USA	Georgia Institute of Technology Atlanta - GA	Post Doctoral Research Raman Post Doc Fellowship	UGC New Delhi

### Research Publications

**Books:** 1. **Micro-Structural Parameters of Polymers Using X-Ray Diffraction Method - Y Sangappa, R Somashekar,** Published by Scholars Press, United States (2015), ISBN 10: [3639717376](#) ISBN 13: [9783639717372](#)

#### Journals

1. Structure property relation in varieties of acid dye processed silk fibers Somashekarappa H, Annadurai, **Sangappa,** Subramanya and Somashekar R, **Materials Letters**, Vol.53, 415- 420, doi:10.1016/S0167-577X (01)00517-1, **2002**

2. Studies on drying of multi-voltine cocoons (IV) influence of stifling of cocoons on structural characteristics of Indian multi-biovoltine raw silk, Hariraj G, Annadurai V, [Sangappa](#) and Somashekar R, **Journal of Silk Science and Technology**, Japan, Vol. 11, 13-19, **2002**
3. Strain-tensor components crystallite shape and their effects on crystalline structure in Silk – I, [Sangappa](#), Kenji Okuyama and Somashekar R **Journal of Applied Polymer Science**, Vol.89, 3045-3053, DOI: 10.1002/app.13521, **2004**
4. Rate of recovery of long periodicity in stretched muscal specimen using SAXS data Annadurai, [Sangappa](#) and Somashekar R, **Journal of Polymer Materials**, Vol. 21, 439-444, **2004**
5. Analysis of diffraction line profile from silk fibers using various distribution functions, [Sangappa](#), Mahesh S S, Subramanya and Somashekar R, **Journal of Polymer Research**, Vol. 12, 465-472, DOI: 10.1007/s10965-005-4045-x, **2005**
6. Crystal structure of raw pure Mysore silk fiber based on (Ala-Gly) 2-Ser-Gly peptide sequence using LALS method, [Sangappa](#), Mahesh S S and Somashekar R, **Journal of Bio Science**, Vol. 30(2), 259-268, **2005**
7. Variation of crystallite shape ellipsoid in non-mulberry silk fibers, Somashekarappa H, [Sangappa](#) and Somashekar R, **Indian Journal of Fiber and Textile Research** Vol. 30, 309-314, **2005**
8. Role of crystallite size and shape in thermal stability Twaron fibers Anjan Jain, Abhishek S, [Sangappa](#), Mahesh S S and Somashekar R, **Journal of Applied Polymer Science**, Vol.100, 4910-4916, DOI: 10.1002/app.23557, **2006**
9. Crystallite size and shape in electron irradiated poly (vinylidene trifluoroethylene) copolymers using WAXS, [Sangappa](#), Manjunath A and Somashekar R, **The Bulletin on Physical Sciences**, Vol. III, 23-31, ISSN 0973-8150, **2007**
10. Microstructural parameters in Electron irradiated HPMC films using X-ray line profile analysis, [Sangappa](#), T Demappa, Mahadevaiah, Ganesh sanjeev, Divakar and R Somashekar, **Journal of Applied Polymer Science**, Vol. 109, Iss 6, 3983-3990, DOI: 10.1002/app.28495, **2008**
11. Physical and Thermal properties of 8 MeV EB irradiated HPMC polymer films, [Sangappa](#), T Demappa, Mahadevaiah, Ganesh sanjeev, S Divakar and R Somashekar, **Nuclear Instruments and Methods in Physics Research B**, Vol. 226, 3975-3980, doi: 10.1016/j.nimb.2008.06.021, **2008**
12. Polymerization of Acrylonitrile initiated by Ce(IV)- Sucrose Redox System: A kinetic Study, Mahadevaiah, T Demappa, [Sangappa](#) and Bibi Ahamadi Katoon **Journal of Applied Polymer Science**, Vol. 108, Issue 6, 3760-3768, DOI: 10.1002/app.27989, **2008**
13. Spectroscopic and thermal studies of 8 MeV electron beam irradiated HPMC films, [Sangappa](#), T Demappa, S Asha, Ganesh sanjeev, P Parameswara and R Somashekar, **Nuclear Instruments and Methods in Physics Research B**, Vol. 267, 2385-2389, doi: 10.1016/j.nimb.2009.04.007, **2009**
14. Microstructural Parameters in Microwave (MW) irradiated Indian Hemp fibers by wide angle X-ray scattering (WAXS) study, [Sangappa](#), S Asha, Parameswar P, Manjunatha Pattabi and R Somashekar, **Materials Science- An Indian Journal**, Vol 6(1) pp 1-6, ISSN 0947-7486, **2010**
15. Microstructural Parameters in 8 MeV Electron-irradiated *Bombyx mori* Silk Fibers by Wide-Angle X-ray Scattering Studies (WAXS), [Sangappa](#), S Asha, Ganesh Sanjeev, G Subramanya, P Parameswara, R Somashekar, **American Institute of Physics Conf. Proc.**, January 5, 2010 – Volume 1202, pp.32-39, ISSN: 0094243X, **2010**
16. Microstructural Parameters in Electron-Irradiated C108 Silk Fibers by Wide-Angle X-ray Scattering Studies (WAXS), [Sangappa](#), S Asha, Ganesh Sanjeev, G Subramanya, P Parameswara and R Somashekar, **Journal of Applied Polymer Science**, Vol.115, Iss. 4, 2183-2189, DOI: 10.1002/app.31312, **2010**

17. Physical and thermal properties of 8 MeV electron beam irradiated P31 *Bombyx mori* Silk fibers, [Sangappa](#), S Asha, Ganesh Sanjeev and R Somashekar- **Materials Science and Applications**, Vol. 2, 826-832, doi:10.4236/msa.2011.27112, **2011**
18. Microstructural Parameters of 8 MeV Electron Irradiated Poly (vinyl alcohol) Polymer Films, [Sangappa](#), S Asha, Ganesh Sanjeev, R Somashekar, DAE-SSPS doi:10.1063/1.3295605, **American Institute of Physics Conf. Proc.**, Vol. 1349, pp 565-566, **2011**
19. Microstructural parameters in electron-irradiated NB4D2 silk fibers by X-ray line profile analysis (LPA), [Sangappa](#), S Asha, Ganesh Sanjeev, P Parameswara and R Somashekar, **Bulletin of Materials Science** – Vol. 34, No. 7, 1583-1590, **2011**
20. A Study on the Microstructural Parameters of 550 keV Electron Irradiated Lexan Polymer Films, K. Hareesh, [Sangappa](#), R. Pramod, V. C. Petwal, Jishnu Dwivedi, Ganesh Sanjeev, **American Institute of Physics Conf. Proc.**, Vol. 1447 pp 586-587, **2012**
21. Quantification of degradation and surface morphology of NB7 silk fibers irradiated by 8 MeV electron beam using XRD and SEM techniques, [Sangappa](#), S Asha, Ganesh Sanjeev, P Parameswara and R Somashekar, **Journal of Fibers and Polymers**, Vol. 13 No. 2, pp 224-230, DOI 10.1007/s12221-012-0224-7, **2012**
22. Microstructural and Mechanical Properties of ZnO Nanoparticles Incorporated HPMC Films, B. Lakshmeesha Rao, [Sangappa](#), S. Asha, Mahadeviah, R. Somashekar, **International Journal of Science Research**, Volume 01, Issue 04, pp 219-223, ISSN: 2277-7989, **2012**
23. Physical Properties of Composite Films of PMMA with Fe<sub>2</sub>O<sub>3</sub>, Anita<sup>1</sup>, Sannakki Nagaraja, [Sangappa](#), S Ganesh and Basavaraja Sannakki, **International Journal of Science Research**, Vol. 01, Issue 04, pp 387-390, ISSN: 2277-7989, **2012**
24. Variation of Lexan Polycarbonate Properties by Electron Beam, K. Hareesh, C. Ranganathaiah, P. Ramya, R. Bhargavi, Geetha G. Nair, [Sangappa](#), Ganesh Sanjeev, **Journal of Applied Polymer Science**, Vol. 127 Iss.3, pp.2010-2018, **2013**
25. Microstructural Parameters in Electron Irradiated PVA Films by Wide Angle X-ray Scattering Studies (WAXS), B. Lakshmeesha Rao, Mahadevaiah, [Sangappa](#), S. Asha and R. Somashekar, **Advances in Materials Research**, Vol. 585, pp 532-536, **2012**
25. Effects of High Energy Electrons on the Physical and Mechanical Properties of Non-Mulberry Silk Fibers, [Sangappa](#), S. Asha, S. Ganesh, R. Somashekar, Timmareddy, Submitted to **Journal of Fibers and Polymers**, Vol. 14, Iss, 6, pp 1032-1039, **2013**
27. Changes in the properties of Lexan polycarbonate by UV irradiation, K. Hareesh, A.K. Pandey, [Sangappa](#), Ravishankar Bhat, A. Venkataraman, Ganesh Sanjeev, **Nucl. Instr. and Meth. in Phys. Res. B.**, Vol. 295, pp. 61-68, **2013**
28. Proton and alpha particle induced changes in thermal and mechanical properties of Lexan polycarbonate, K Hareesh, Pintu Sen, Ravishankar Bhat, Geeta G Nair, [Sangappa](#), Ganesh Sanjeev, **Vacuum – Sur. Engg. Sur. Inter. And Vac. Tech.**, Vol. 91, Iss., pp. 1-6, **2013**
29. Effect of Alkali Treatment on the Physical, Chemical and Surface Properties of Indian Hemp Fibers, [Sangappa](#), B Lakshmeesha Rao, S Asha, and R Somashekar, **American Institute of Physics Conf. Proc.**, Vol. 1512 pp.586-587, **2013**

30. Effect of ZnO Nanoparticles on Structural and Mechanical Properties of HPMC Polymer Films, B Lakshmeesha Rao, Mahadeviah, S Asha, R Somashekar and [Sangappa](#), **American Institute of Physics Conf. Proc.**, Vol. 1512 pp. 588-589, **2013**
31. Mechanical Properties of Composite Films of PMMA with Fe<sub>2</sub>O<sub>3</sub>, Anitha, [Sangappa](#), Ganesh S, Basavaraja Sannakki, **Indian Journal of Applied Research**, Vol. 3, Iss. 6, pp 457-459, ISSN: 2249-555X, **2013**
32. Physical, Chemical and Surface Properties of Alkali Treated Indian Hemp Fibers, [Sangappa](#), B Lakshmeesha Rao, S Asha, R Madhukumar and R Somashekar, **Composite Interfaces**, Vol. 21, Iss. 2, ISSN 1568 – 5543, pp 153-159, **2014**
33. Microstructural, Thermal and Antibacterial Properties of Electron Beam Irradiated *Bombyx mori* Silk Fibroin Films, S Asha, [Sangappa](#), Prashantha Naik, K. Sharat Chandra and Ganesh Sanjeev, **American Institute of Physics Conf. Proc.**, Vol. 1591 pp. 219-221, doi: 10.1063/1.4872550, **2014**
34. Structural, Surface Wettability and Antibacterial Properties of HPMC-ZnO nanocomposite, B Lakshmeesha Rao, Mahadeviah, S Asha, R Madhukumar, R Somashekar, Prashantha Naik, K Sharath Chandra and [Sangappa](#), **American Institute of Physics Conf. Proc.**, Vol. 1591 pp. 807-809, doi: 10.1063/1.4872763, **2014**
35. Interaction of Carbon Nanotubes Reinforced Hydroxyapatite Composite with *Bacillus subtilis*, *P. aeruginosa* and *C. albicans* P. Khalid, M. A. Hussain, P. D. Rekha, C. Sanal, S. Suraj, M. Rajashekhar, V. B. Suman, [Sangappa](#) and A. B. Arun, **Indian Journal of Science and Technology**, Vol 7(5), 678–684, ISSN (Print): 0974-6846, **2014**
36. The Preparation and Structural, Mechanical Characterization of Silk Fibroin/HPMC Blend Film, G. Rajesha Shetty, R. Madhu Kumar, B. Lakshmeesha Rao, S. Asha, [Sangappa](#), **American Institute of Physics Conf. Proc.**, Vol. 1665, 070023; doi: 10.1063/1.4917887, ISBN: 978-0-7354-1310-8, **2015**
37. Effect of Gamma Irradiation on HPMC/ZnO Nanocomposite Films, B Lakshmeesha Rao, S Asha, R Madhukumar, S Latha, Mahadeva Gowda, G Rajesha Shetty, C S Shivananda, K V Harish and [Sangappa](#), **American Institute of Physics Conf. Proc.**, Vol. 1665, 070020; doi: 10.1063/1.4917884, ISBN: 978-0-7354-1310-8, **2015**
38. Influence of Electron Irradiation on the Structural and Thermal Properties of Silk Fibroin Films, S Asha, [Sangappa](#), Ganesh Sanjeev, **American Institute of Physics Conf. Proc.**, Vol. 1665, 070024; doi: 10.1063/1.4917888, ISBN: 978-0-7354-1310-8, **2015**
39. Structural and Thermal Properties of  $\gamma$  – irradiated *Bombyx mori* Silk Fibroin Films, R. Madhukumar, S. Asha, B. K. Sarojini, R. Somashekar, B. Lakshmeesha Rao, C. S. Shivananda, K. V. Harish, [Sangappa](#), **American Institute of Physics Conf. Proc.**, Vol. 1665, 070025; doi: 10.1063/1.4917889, ISBN: 978-0-7354-1310-8, **2015**
40. Effect of gamma irradiation on HPMC/ZnO nanocomposite films, Lakshmeesha B. Rao, [Y. Sangappa](#), **Radiation Effects and Defects in Solids**, Vol. 172, Iss.06, 501-509, doi:10.1080/10420150.2015.1052432, ISSN: 1042-0150, **2015**
41. Physical, thermal, chemical and mechanical properties of high energy electron irradiated non-mulberry Tassar silk fibers, [Y. Sangappa](#), S. Asha, S. Ganesh, R. Somashekar, **Journal of Fashion Tech and Textile Engg.**, Vol. 3, Iss.2, 1-4, doi: 10.4172/2329-9568.1000119, ISSN: 2329-9568, **2015**
42. Mechanical and antibacterial properties of HPMC polymer films incorporated with ZnO nanoparticles, Lakshmeesha B. Rao, Mahadeviah, Asha Sangappa, Rajesha G. Shetty, Somashekar Rudrappa · Prashantha Naik, [Sangappa.Y](#), **Res. J. Pharm., Biol. Chem. Sci.**, Vol. 6, Iss. 3, pp 767-771, ISSN: 0975-8585, **2015**
43. Tuning the refractive index and optical band gap of silk fibroin films by electron irradiation, S. Asha, Ganesh Sanjeev, [Y. Sangappa](#), **Journal of Spectroscopy**, Hindawi, Volume 2015, Article ID 879296, 7 pages, <http://dx.doi.org/10.1155/2015/879296>, ISSN: 2314-4920, **2015**

44. Preparation and Characterization of Silk Fibroin/Hydrylpropyl Methyl Cellulose blend films, G Rajesha Shetty, S Asha, Lakshmeesha Rao B, Youjiang Wang, [Y. Sangappa](#), **Fibers and Polymers**, Vol. 16, Iss. 08 pp 375-382, DOI:10.1007/s12221-015-5223-z, **2015**
45. Gamma radiation assisted synthesis of Silver nanoparticles and their characterization, R Madhukumar, S Asha, B Lakshmeesha Rao, B Narayana, K Byrappa, Donggang Yao, Youjiang Wang, [Y. Sangappa](#), **Advanced Materials Letters**, ISSN: 0976-3961, Vol. 6 (12) pp 1088-1093, DOI:10.5185/amlett.2015.6002, **2015**
46. Optical properties of gamma – irradiated *Bombyx mori* silk fibroin films, R Madhu Kumar, S. Asha, B. Lakshmeesha Rao, B.K. Sarojini, K. Byrappa, Youjiang Wang and [Sangappa. Y.](#), **Radiation Effects and Defects in Solids**, Vol. **170 (11) pp 906-915, 2015**
47. Spectroscopic study of electron irradiated *Bombyx mori* silk fibroin films, S. Asha, Ganesh Sanjeev, [Y. Sangappa](#), **Journal of Optics** (Springer) – ISSN: 0972-8821, Vol. 45 Iss. 1 pp 66-72, DOI: 10.1007/s12596-015-0267-4, **2016**
48. Functional Data Analysis techniques for study of structural parameters in polymer composites, Thejas Urs G, Karthik Bharath, [Sangappa Yallappa](#) and Somashekar Rudrappa, **Journal of Applied Crystallography** – Vol. 49, dx.doi.org/10.1107/S160057671600113, pp 594-605, **2016**
49. Biosynthesis of Colloidal Silver Nanoparticles: Characterization and Their Antibacterial Activity, C S Shivananda, R Madhukumar, S Asha, B Lakshmeesha Rao, B Narayana, K Byrappa, S Satish, Youjiang Wang and [Y. Sangappa](#), **Biomedical Physics and Engineering Express** (IOP Journal), Vol. 2, Iss. 3, pp 035004, doi:10.1088/2057-1976/2/3/035004, **2016**
50. Biosynthesis of Colloidal Silver Nanoparticles: Characterization and Their Potential Antibacterial Activity, C S Shivananda, R Madhukumar, S Asha, B Lakshmeesha Rao, B Narayana, K Byrappa, S Satish, Youjiang Wang and [Y. Sangappa](#), **Macromolecular Research** (Springer), Vol. 24, Iss. 8, pp 684-690, **2016**
51. Influence of gamma irradiation on structural, thermal and antibacterial properties of HPMC/ZnO nanocomposites, B. Lakshmeesha Rao, R. Madhukumar, S. Latha, G. Rajesha Shetty, C. S. Shivananda, K. Sharath Chandra and [Y. Sangappa](#), **AIP Conf. Proc. 1731**, 070014; <http://dx.doi.org/10.1063/1.4947846>, **2016**
52. Silk fibroin/pullulan blend films: Preparation and characterization, C. S. Shivananda, B. Lakshmeesha Rao, R. Madhukumar, B. K. Sarojini, R. Somashekhar, S. Asha and [Y. Sangappa](#), **AIP Conf. Proc. 1731**, 070013 ; <http://dx.doi.org/10.1063/1.4947845>, **2016**
53. The gamma irradiation effects on structural and optical properties of silk fibroin/HPMC blend films, G. Rajesha Shetty, B. Lakshmeesha Rao, Mahadeva Gowda, C. S. Shivananda, S. Asha, K. Byrappa and [Y. Sangappa](#), **AIP Conf. Proc. 1731**, 070015; <http://dx.doi.org/10.1063/1.4947847>, **2016**
54. Stochastic analysis of experimentally determined physical parameters of HPMC:NiCl<sub>2</sub> polymer composites, Thejas Urs G., [Y. Sangappa](#) and R. Somashekar, **AIP Conf. Proc. 1731**, 040007 ; <http://dx.doi.org/10.1063/1.4947643>, **2016**
55. Determination of force constant and refractive index of a semiconducting polymer composite using UV-Visible spectroscopy, Tejas Urs G, Mahadevaiah, [Sangappa Y](#) and R Somashekar, **Indian Journal of Physics**, (Springer) doi:10.1007/s12648-016-0905-y, **2016**
56. Synthesis of silver nanoparticles using Bombyx mori silk fibroin: characterization and antibacterial activity, C S Shivananda, B Lakshmeesha Rao, A Pasha, [Y Sangappa](#), **IOP Conf. Ser.: Mater. Sci. Eng**, 149 pp012175 doi:10.1088/1757-899X/149/1/012175, **2016**
57. Determination of Crystallite Shape in Polymer Composites using X-ray Diffraction Results, Thejas G Urs, [Y. Sangappa](#), K Byrappa and R Somashekar, **AIP Conf. Proc.** Vol. 1832 Iss. 1, doi:10.1063/1.498014, **2017**

58. Effect of Gamma Irradiation on Physical and Antibacterial Properties of HPMC/ZnO BNC films, B Lakshmeesha Rao, R Madhukumar, G Rajesha Shetty, K Sharath Chandra, Youjiang Wang and [Y. Sangappa](#). Conf. Series: **Materials Today Elsevier**, 2017, In Press

59. Preparation and Characterization of Silk Fibroin/Silver Nano Composite Films, C S Shivananda, R Madhukumar, P Renu, B Narayana, K Byrappa, Youjiang Wang, [Y. Sangappa](#), **Materials Research Innovations (Taylor and Francis)**, Vol. 21, Iss. 4 pp. 210-214, <http://dx.doi.org/10.1080/14328917.2016.1200844>, 2017

60. Rapid synthesis of gold nanoparticles using silk fibroin: characterization, antibacterial activity, and anticancer properties, B. Lakshmeesha Rao, Mahadev Gowda, S. Asha, K. Byrappa, B. Narayana, R. Somashekar, Y. Wang, L. N. Madhu, [Y. Sangappa](#), **Gold Bulletin** (Springer), Vol. 50, doi: DOI 10.1007/s13404-017-0218-8, 2017

61. Synthesis of anisotropic silver nanoparticles using silk fibroin: characterization and antimicrobial properties, [Y. Sangappa](#), S. Latha, S. Asha, P. Sindhu, N. Parushuram, M. Shilpa, K. Byrappa, and B. Narayana, **Materials Research Innovations (Taylor and Francis)**, DOI:10.1080/14328917.1383680, 2017

62. The preparation and characterization of silk fibroin blended with low molecular weight HPMC, G Rajesha Shetty, B L Rao, Mahadev Gowda, C S Shivananda, and [Y. Sangappa](#), **AIP Conf. Proc.** (DAE-SSPS 2017) Accepted.

63. Structural, mechanical and antibacterial properties of HPMC/SF-AgNPs nanocomposite films, K V Harish, B L Rao, S Asha, C Vipin and [Y. Sangappa](#), **AIP Conf. Proc.** (DAE-SSPS 2017) Accepted

64. Influence of UV irradiation on HPMC polymer films, B L Rao, C S Shivananda, G Rajesha Shetty, K V Harish, R Madhukumar, and [Y. Sangappa](#), **AIP Conf. Proc.** (ICC-2017 Bikaner) Accepted.

65. Synthesis of Gold Nanoparticles using Silk Fibroin and Their Characterization, Mahadeva Gowda, Harisha K S, R. Ranjana, K V Harish, B. Narayana, K. Byrappa, and [Y. Sangappa](#), **AIP Conf. Proc.** (ICC-2017 Bikaner) Accepted.

#### **Conf./Symposia Proceedings/Books**

1. Variation of crystallite shape ellipsoid in non-mulberry silk fibers, Somashekarappa H, Gopalkrishne Urs, [Sangappa](#) and Somashekar R, **DAE - Solid State Physics Symposium**, Vol. 44, pp163-164, 2001

2. WAXS study of a new variety of silk fiber: C. nichii, [Sangappa](#), Somashekarappa H, and Somashekar R Proceedings of 45<sup>th</sup> **DAE - Solid State Physics**, Vol. 45, pp 223-224, 2002

3. Change in shape of the crystallite size with thermal aging of Twaron fibers, Anjana Jain, Annadurai V, [Sangappa](#) and Somashekar R, Proceedings of 46<sup>th</sup> **DAE - Solid State Physics Symposium**, Vol. 46, pp349-350, 2003

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