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**Adjunct Professor:**
**Inter University Centre for Nanomaterials and Devices (IUCND),**
Cochin University of Science and Technology,
Cochin-682022, Kerala, India
**Centre for Excellence in Advanced Materials,**
Cochin University of Science and Technology,
Cochin-682022, Kerala, India

| **Research areas** | |
|---|---|
| Biomaterials | Combinatorial approaches in Tissue Engineering and Regenerative Medicine,<br>Bioinspired Bone and Neuronal Tissue Engineering ( Natural and synthetic)<br>Radiopaque Biomaterials<br>Injectable Biomaterials |
| Nanomedicine &<br>Theranostic Materials | Magnetic Nanomedicine with Hyperthermia potential for Cancer Therapy<br>Targeted Therapy (pH responsive and Magnetic targeting)<br>Quantum dots<br>Bioactive Metal Organic Frameworks (MOFs)<br>Fluorescent materials for Cancer Theranostics |
| Antibacterial Formulations<br>& Products | Development of antibacterial formulations for biomedical products |
| Energy | Membranes and Catalysts for Solid state Alkaline Fuel cells |

| **Educational Qualifications** | |
|---|---|
| July 2008<br>Ph.D. Biomaterials | Biomedical Technology Wing<br>Sree Chitra Tirunal Institute for Medical Sciences and Technology<br>Thiruvananthapuram, India |
| June 2001<br>M.Tech. Polymer Technology | Department of Polymer Science and Rubber Technology<br>Cochin University Of Science And Technology<br>India (First Rank) |
| June 1999<br>B. Tech. Polymer Science &<br>Engineering | Department of Polymer Science and Rubber Technology<br>Cochin University of Science and Technology<br>India |
| June 1995 BSc. Chemistry | University of Kerala<br>India |

**Professional Experience**

| | |
|---|---|
| 2018 Oct 12 - Present | **Professor**<br>Department of Polymer Science and Rubber Technology,<br>Cochin University of Science and Technology (CUSAT)<br>Cochin 682022 Kerala |
| 31/7/2015 -11/10/2018 | **Associate Professor**<br>Department of Polymer Science and Rubber Technology,<br>Cochin University of Science and Technology (CUSAT)<br>Cochin 682022 Kerala |
| 2014- 2015 | Project Scientist (Indo-Japan project)<br>Functional Materials Division<br>National Institute for Inter Disciplinary Science & Technology (NIIST)<br>Council of Scientific and Industrial Research (CSIR);Trivandrum-695019, **India** |
| 2012-2014 | Postdoctoral Research Associate<br>Institute of Innovative Research<br>Tokyo Institute of Technology, R1-17,4259 Nagatsuta; Midori-ku, Yokohama 2268503, **Japan** |
| 2010-2012 | Postdoctoral Research Associate<br>Department of Cancer Biology and Pharmocology,<br>University of Illinois College of Medicine, IL, **USA** |
| 2009-2010 | Lecturer (adhoc)<br>Department of Polymer Science and Rubber Technology,<br>Cochin University of Science and Technology, Cochin 682022, **India** |
| 2008 (Jan) -2008 (Nov) | Researcher<br>Nanochemistry Research Institute,<br>Department of Applied Chemistry,<br>Curtin University, **Australia** |

**Publications**

1. K.R. Sneha and G.**S. Sailaja*** Intrinsically radiopaque biomaterial assortments: A short review on the physical principles, X-ray imageability and state-of-the-art developments, **Journal of Materials Chemistry B,** 2021; DOI: 10.1039/D1TB01513C

2. Praseetha R.Nair, S.Sreeja and **G.S.Sailaja***, In vitro Biomineralization and Osteogenesis of Cissus quadrangularis Stem Extracts: An Osteogenic Regulator for Bone Tissue engineering**, Journal of Biosciences**, volume 46, 2021

3. N. S. Sumitha, S. Sreeja, P. J. G. Varghese, **G. S. Sailaja**, A dual functional superparamagnetic system with pH-dependent drug release and hyperthermia potential for chemotherapeutic applications, **Materials Chemistry and Physics,** Volume 273, 2021, https://doi.org/10.1016/j.matchemphys.2021.125108

4. N. S. Sumitha, Prabha Prakash, Balagopal N. Nair, **G. S. Sailaja**, Degradation-Dependent Controlled Delivery of Doxorubicin by Glyoxal Cross-Linked Magnetic and Porous Chitosan Microspheres, **ACS Omega**, 6(33), 21472–21484,2021, DOI: https://doi.org/10.1021/acsomega.1c02303

5. Irthasa Aazem, Prasanth Rathinam, Saju Pillai, Gopinathan Honey, A. Vengellur, S. G. Bhat, **G. S. Sailaja**, Active Bayerite Underpinned Ag2O/Ag: An Efficient Antibacterial Nanohybrid Combating Microbial Contamination, **Metallomics**, Volume 13, Issue 8, 2021, mfab049, https://doi.org/10.1093/mtomcs/mfab049

6. P. Sirajunnisa, L. H George, N. Manoj, S. Prathapan and **G. S. Sailaja**, Lawsone Derived Zn (II) and Fe (III) Metal Organic Frameworks with pH Dependent Emission for Controlled Drug Delivery, **New Journal of Chemistry,** 2021 DOI: 10.1039/D1NJ01913A

7. K.R. Sneha, S.Sreeja, **G.S. Sailaja***, Radiopacity endowed magnetic nanocomposite with hyperthermia and in vitro mineralization potential: a combinatorial therapeutic system for osteosarcoma, **Biomed. Mater,** 16(4). 2021, doi: 10.1088/1748-605X/ac01af

8. K.R. Sneha, K. R. Sneha, Neenu Benny, Balagopal N. Nair and **G. S. Sailaja***, Natural Rubber Latex Assisted Shape-Attuned Synthesis of Intrinsically Radiopaque and Magnetic Bioceramic Nanocomposite with Hyperthermia Potential for Cancer Therapeutics, DOI: 10.1039/D1NJ01262B, **New Journal of Chemistry,** 2021

9. S. Sreeja, P. Ramesh, P. R. Harikrishna Varma, **G.S. Sailaja*,** Hirarchially porous osteoinductive Poly(hydroxyethyl methacrylate-co-methyl methacrylate) scaffold with sustined Doxorubicin delivery for consolidated osteosarcoma treatment and bone defect repair", **ACS Biomaterials science and engineering**, 2021, 7, 2, 701–717

10. Aswin A., I. Aazem, Honey G. A. Vengellur, Sarita G.Bhat and **G.S. Sailaja*,** Antibacterial Polyelectrolytic chitosan derivatives conjugated natural rubber latex films with minimized bacterial adhesion**, J Appl Polym Sci,** 2021;138:e49608

11. K. Shijina, R. Ilathuvalappil, S. Nisa, **G.S. Sailaja***, P. Mohamed, B.N.Nair, G.M.Anilkumar, K.Sreekumar, T.Yamaguchi and U.S.Hareesh, $Fe^{3+}$ stabilized 3D cross-linked glycine-melamine formaldehyde networks as precursor for highly efficient oxygen reduction catalyst in alkaline media, **Materials Letters**, Volume 264, April 2020, 127365

12. Praseetha R. Nair; **G.S. Sailaja *.** Biomimetic Bone grafts for Bone Tissue Engineering – From Concept to Design. **Teresian International Journal of Chemical Science**, 2020

13. Ananjana K, Swetha S, P. Prakash, Nishad T, Manoj Komath, B.N.Nair and **G.S. Sailaja ***., Amino acid inspired tunable superparamagnetic iron oxide (SPION) nanostructures with high magnetic hyperthermia potential for biofunctional applications, **New Journal of Chemistry**,2020, DOI: 10.1039/C9NJ05343C

14. S.Sreeja, C.V. Muraleedharan, P.R.H.K.Varma, **G.S. Sailaja ***, Surface transformed osteoinductive polyethylene terephthalate scaffold as a dual system for bone tissue regeneration, **Materials Science and Engineering C**, 109, 2020

15. S. Sasidharan, W, Naoto, G. M. Anilkumar, B. N. Balagopal, **G. S. Sailaja**, T. Takanori; T. Yamaguchi, Electro-oxidation competency of palladium nanocatalysts over ceria–carbon composite supports during alkaline ethylene glycol oxidation, **Catalysis Science & Technology**, 2018, 493-501
16. K. Shijina, R. Illathvalappil, N. S. Sumitha, **G.S. Sailaja ***, Kurungot, B. N. Nair, A. P. Mohamed, G. M. Anilkumar, T. Yamaguchi, U. S. Hareesh, Melamine Formaldehyde - Metal Organic Gel Interpenetrating Polymer Network Derived Intrinsic Fe-N- Doped Porous Graphitic Carbon Electrocatalysts for Oxygen Reduction Reaction, **New Journal of Chemistry**, 2018, 18690-18701

17. K. Shijina, R. Illathvalappil, S. Kurungot, B N. Nair, A. P.Mohamed, T Yamaguchi, G. M. Anilkumar, U. S. Hareesh, **G.S. Sailaja ***, Chitosan Intercalated Metal Organic Gel as a Green Precursor of Fe Entrenched and Fe Distributed N-Doped Mesoporous Graphitic Carbon for Oxygen Reduction Reaction, **Chemistry Select**, 2017, 8762–8770
18. **G.S. Sailaja ***, P. Ramesh, S. Vellappally, S. Anil, H. K. Varma, Biomimetic approches with smart interfaces for Bone regeneration, **J Biomed Sci**, 2016 Nov 5;23(1):77 (doi: 10.1186/s12929-016-0284-x)

19. **G. S. Sailaja**, S. Miyanishi, T. Yamaguchi, A durable anion-conducting membrane with packed anion-exchange sites and an aromatic backbone for solid-state alkaline fuel cells, **Polymer Chemistry**, 2015,7964-7973

20. **G. S. Sailaja**, P. Zhang, G. M. Anilkumar, T. Yamaguchi, Anisotropically organised LDH on PVDF: A geometrically templated electrospun substrate for advanced anion conducting membranes, **ACS Appl. Mater Interfaces**, 2015, 7 (12), pp 6397-6401

21. **G. S. Sailaja**, Balagopal. N. Nair, Julian D. Gale and Yamaguchi; Amino acid inspired microscale organization of metallic nanocrystals; **J. Mater. Chem. A,** 2014, 2, 100-106

22. **G. S. Sailaja**, Praveen Bhoopathi, Bharthi Gorantla, Chandramu Chetty,Venkateswara Rao Gogineni, Kiran Kumar Velpula, Christoper S. Gondi, Jasti S. Rao, The secreated protein acidic and rich in cysteine (SPARC) induces endoplasmic reticulam stress leading to autophagy-mediated apoptosis in neuroblastoma, **Int Journal of Oncology**, 42(1), 2013,188-196

23. B.Gorantla, P. Bhoopathi, C. S. Gondi, **G. S. Sailaja**, J. S. RAO, Notch signalling regulates tumor- induced angigogenisis in SPARC- over expresed neuro blastoma, **Angiogenisis**, 16(1), 2013, 85

24. **G. S. Sailaja**, P. Ramesh and H. K. Varma, Effect of surface functionalisation on the physico mechanical properties of a novel bio functional copolymer, **J. Aplied polym sci,** 121(6), 2011, 3509-3511
25. **G. S. Sailaja**, P. Ramesh and H. K. Varma, Ultrastructural evaluation of in vitro in mineralised calcium phosphate on surface phosphorylated poly (hydroxy ethyl meth acrylate-co-methyl methacrylate), **J Mat sci: Mater Med**, 21(4); 2010, 1183-1193.

26. **G. S. Sailaja**, M. Mohanty, P. V. Mohanan, T. V. Kumari, P. Ramesh and H. K. Varma, Surface phosphorylated copolymer promotes direct bone bonding, **Tissue Engineering Part A,** 15(10); 2009, 3061-3069

27. **G. S. Sailaja**, K.Sreenivasan, Y.Yokogawa, T.V. Kumary, H K Varma, Bioinspired mineralization and cell adhesion on surface functionalized poly(vinly alcohol) films, **Acta Biomaterialia**, 5(5) 2009, 1647-1655
28. **G. S. Sailaja**, P. Ramesh, H. K.Varma, Hydroxyapatite mouldable formulations using natural rubber latex as a binder, **J Biomed Mater Res Part B, Appl Biomater**, 82B, 2007, 231-238
29. **G. S. Sailaja**, P.Ramesh, T. V. Kumary, H. K. Varma, Human osteosarcoma cell adhesion behaviour on hydroxyapatite integrated chitosn-poly(acrylic acid) polyelectrolyte complexes, **Acta Biomaterialia**, 2, 2006, 651-657(listed in top 25 hottest articles-2006)
30. **G. S. Sailaja**, T. V. Kumary, H. K. Varma, Biomimetically modified poly(2-hydroxy ethyl methacrylate-co-methyl methacrylate) microspheres for bone augmentation, **Trends Biomater. Artif. Organs**, 20, 2006, 3-6
31. **G. S. Sailaja**, T. V. Kumary, H. K. Varma, In vitro mineralization and cell adhesion on surface modified poly(2-hydroxy ethyl methacrylate-co-methyl methacrylate), **Key Eng Mater**, 309, 2006, 493-496
32. **G. S. Sailaja**, P. Ramesh, H. K. Varma, Swelling behaviour of hydroxyapatite filled chitosn-poly(acrylic polyelectrolyte complexes, **J. Applied Polym Sci.,** 100, 2006, 4716-4722
33. **G. S. Sailaja**, S. Velayudhan, M. C. Sunny, K. Sreenivasan, H. K. Varma, P. Ramesh, Hydroxyapatite chitosan-poly(acrylic acid) polyelectrolyte complexes, **J. Mater. Sci.,** 38, 2003

**Details of patents**

| Sl. No | **Patent Title** | **Name of Applicant** | **Inventors** | **Patent No.** | **Award Date** | **Agency/ Country** | **Status** |
|---|---|---|---|---|---|---|---|
| 1 | Porous Biodegradable Scaffolds for Regenerative Bone Tissue Engineering. | Cochin University of Science and Technology | G.S. Sailaja, Praseetha R. Nair, S. Sreeja | 202141026897 | 16-06-2021 | India | Filed |
| 2 | A radiopaque surgical suture and method of preparation thereof. | Cochin University of Science and Technology | G. S. Sailaja, K. R. Sneha | 202141026896 | 16-06-2021 | India | Filed |
| 3 | Natural Rubber Latex Compound With Layered Double Hydroxide Nano Gel Non-Black Reinforcing Filler. | Cochin University of Science and Technology | G.S. Sailaja, Ananjana K., Irthasa azem | 202141030341 | 06-07-2021 | India | Filed |
| 4 | In situ exfoliated magnetic Layered double hydroxide (LDH) with enhanced magnetic hyperthermia potential for biomedical applications. | Cochin University of Science and Technology | G.S. Sailaja Ananjana K., Manoj Raama Varma | 202041024102 | 09-06-2020 | India | Filed |
| 5 | Long-Lived Photoluminescent PMMA Silver Terephthalate Polymer Composite Films with antibacterial activity. | Cochin University of Science and Technology | G.S. Sailaja, Liz Hannah George | 202041003122 | 23-01-2020 | India | Filed |
| 6 | Anion conducting membrane from Layered Double Hydroxide. | Tokyo Institute of Technology and Noritake Co. Ltd | G.M. Anilkumar, G.S. Sailaja, P. Zhang, T. Yamaguchi | 6243312 | 17-11-2017 | Japanese | Granted |
| 7 | Metallic nano- materials made from metallic nanoparticles and method of processing the same. | Noritake Co. Ltd and Curtin university | Balagopal N. Nair and G.S Sailaja | 5325037 | 26.7. 2013 | Japanese | Granted |
| 8 | Platinum nanoparticles and method of processing the same. | Noritake Co.Ltd and Curtin University | Balagopal N. Nair and G.S. Sailaja | 5197518 | 15.2.2013 | Japanese | Granted |
| 9 | Silver nanoparticles and method of processing the same. | NoritakeCo.Ltd (JAPAN) and Curtin University | Balagopal N. Nair and G.S. Sailaja | 5190420 | 1.2.2013 | Japanese | Granted |
| Patents submitted For filing | | 2 | | | | | |

**Conference presentations**

1. Sneha K.R. and G.S.Sailaja, Intrinsically radiopaque biofunctional nanohybrid for osteosarcoma, APT 21, 2021
2. Sneha K R and Sumitha N S, G. S Sailaja. Single source derived nanocellulose, a potential biomedical material for diverse applications, World Biomaterials Congress WBC, Glasgow, Scotland, December 19-24, 2020
3. Sreeja S. Sumitha N S and G. S Sailaja World Biomaterials Congress WBC, Glasgow, Scotland, December 19-24, 2020
4. Ananjana K. Radhika N and G. S Sailaja World Biomaterials Congress WBC, Glasgow, Scotland, December 19-24, 2020
5. Liz Hannah George and G. S Sailaja. World Biomaterials Congress WBC, Glasgow, Scotland, December 19-24, 2020
6. Sneha K. R. and G. S Sailaja World Biomaterials Congress WBC, Glasgow, Scotland, December 19-24, 2020
7. Sreelakshmi Sadanandan, Sreeja S. Md Simnan Raza, Bins K. C., B. Chakrapani P. S., A. Vengellur, G. S Sailaja, Biofunctional analysis of Poly (Hydoroxyethyl methacrylate-co- styrene) hydrogel for neuronal regeneration, Current trends in Polymer Science- CTPS 2020, FEB 28th, 2020. (**Best poster Award**)
8. Pradeep Kumar P. Joy, Parseetha R. Nair and G. S Sailaja Organic Filler Modified Latex Foam-A Green Alternative to Expand Polystyrene Based Packing Material, Current trends in Polymer Science- CTPS 2020, FEB 28th, 2020.
9. Irthasa Aazem V. S., Aswin A , Ajith Vengellur, Sarita G. Bhat, G. S Sailaja Antibacterial formulation of Quaternized Chitosan anionic clay fillers for preventing urinary catheter associated infections, National seminar on New Fronteirs in Material and Environmental Sciences, Jan 28-29 2020, SH College Thevara ( **Best Paper Award**)
10. Praseetha R. Nair, Pradeep Kumar P. Joy, G. S Sailaja A Biodegradable Packaging Material from Natural Rubber Latex Foam with Newspaper Waste as Filler– An Green Alternative to Expanded Polystyrene, National seminar on New Fronteirs in Material and Environmental Sciences, Jan 28-29 2020, SH College Thevara (oral Presentation)
11. Sirajunnisa P., Liz Hannah George, sailaja G. S., pH Dependent fluorescent Metal Organic Frameworks for cellular imaging, National seminar on New Fronteirs in Material and Environmental Sciences, Jan 28-29 2020, SH College Thevara (oral Presentation)
12. Aswin A. , Ajith Vengellur , Sarita G. Bhatt , Sailaja G. S., Chitosan : An effective antibacterial agent for Natural rubber products, National seminar on New Fronteirs in Material and Environmental Sciences, Jan 28-29 2020, SH College Thevara (oral Presentation)
13. Md Simnan Raza, Sreeja S, Sreelakshmi Sadanandan, Ajith Vengellur, Sailaja G. S., Polyaniline coated Poly(hydroxyethyl methacrylate-co-styrene) Hydrogel for Neural Cell Regeneration, 32nd Kerala Science Congress, 25-27 th January 2020 (oral Presentation)
14. Pradeep Kumar P. Joy a , Praseetha R. Nair a and Sailaja G.S., Natural Rubber Latex Flock Based Packaging Material – A Green Alternative to Expanded Polystyrene, 32nd Kerala Science Congress, 25-27 th January 2020 (oral Presentation)
15. Mohammed Haris, Liz Hannah George, Sailaja G. S., Biodegradable printable polymer material for textile packaging from renewable resources, Kerala Science Congress 25-27 th January 2020, (oral Presentation)
16. Sneha K. R., Neenu Benny, Sailaja G. S., Inherently radiopaque magnetic ternary systems with hyperthermia potential for cancer therapeutics, 32nd Kerala Science Congress, 25-27 th January 2020 (oral Presentation)
17. Irthasa Aazem V. S., Aswin A., Sarita G. Bhat, Sailaja G. S., Antibacterial Natural Rubber latex Formulation with Melanin intercalated anionic clay for Urenary Catheters, 32nd Kerala Science Congress, 25-27 th January 2020
18. Liz Hannah George, Manoj N, Sailaja G. S. Long-lived Photoluminiscent Silver Carboxylate For Optical And Biological Applications, 32nd Kerala Science Congress, 25-27 th January 2020, (oral Presentation)
19. Sneha K. R., Sailaja G. S., Radiopacity endowed hydroxyapatite based magnetic systems for bone cancer therapeutics, 3rd International Conference on Advance Functional Materials ICAFM 2019, NIIST Trivadrum 9-10 Dec, 2019, (oral Presentation)
20. Sneha K. R. and Sailaja G.S., 3rd International Conference on Advance Functional Materials, ICAFM CSIR-NIIST, Thiruvananthapuram, Dec 9-10, 2019
21. Sumitha N. S. Ananjana K and Sailaja G.S, 3rd International Conference on Advance Functional Materials, ICAFM CSIR-NIIST, Thiruvananthapuram, Dec 9-10, 2019
22. Arathy Madhu and Sailaja G.S 3rd International Conference on Advance Functional Materials, Dec 9-10, ICAFM, CSIR-NIIST, Thiruvananthapuram, 2019
23. Ananjana K., Sailaja G. S., Layered double hydroxide with tunable interlayer space for theranostic applications, International Conference on Nanoscience and Nanotechnology, ICNAN -2019, VIT Vellore, Tamil Nadu, 4th – 6th Dec 2019
24. Sreeja S., Nandhini M., Sailaja G.S., Surface-engineered fluorescent graphene quantum dots for cellular imaging, International Conference on Nanoscience and Nanotechnology, ICNAN -2019, VIT Vellore, Tamil Nadu, 4th – 6th Dec 2019
25. Ananjana K., Manoj Raama Varma, Sailaja G. S., Magnetic anionic clay for targeted delivery and cancer theranostics, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019
26. Liz Hannah George, Aswin A., Sailaja G. S., Polyelectrolyte Complex/Hydroxyapatite Osteoconductive Injectable Scaffold For Bone Tissue Regeneration, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019 (**Best Poster Award**)

27. Sreeja S., Muraleedharan C. V., Harikrishna Varma P.R., Sailaja G.S., Bifunctional antibiotic delivery system with intrinsic bone regeneration potential, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019
28. Aswin A., Irthasa Aazem, Ajith Vengellur, Honey G, Sarita G Bhatt, Sailaja G. S., Chitosan based water soluble antibacterial agents for biomedical formulations, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019
29. Irthasa Aazem, Aswin A., Ajith Vengellur, Sarita G Bhatt, Sailaja G. S., Antibactrial formulations ofquaternised chiosan intercalated layer double hydroxide nanoparticles for preventing nosocomial infection, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019
30. Praseetha R. Nair, Sneha K. R., Sailaja G. S., Cissus Quadrangularis Derived Nanofiber Incorporated Biodegradable Scaffold for Bone Regeneration, International Conference on Biomaterials, "BIOTerm-2019", IIT Kanpur, 28th Nov -1st Dec 2019
31. Bins T, Ananjana K, Sreeja S, Ajith Vengellur, Chakrapani B and Sailaja G.S., TERMIS, Sydney, Australia, Oct 17-21, 2019
32. Sirajunnisa P., Liz Hannah George, Manoj N. and Sailaja G. S., Metal Organic Frameworks For Drug Delivery And Cellular Imaging: Lawsone As An Organic Linker, World Congress on Biotechnology Healthcare Summit- 2019, IISC Banglore, 27-28th Aug 2019
33. Praseetha R. Nair, Sreeja S., Sailaja G. S., Bone Regeneration Potential of Natural Fiber Derived from Cissus quadrangularis plant, World Congress on Biotechnology Healthcare Summit- 2019, IISC Banglore, 27-28th Aug 2019 (**Best Poster Award**)
34. Liz Hannah George, Aswin A., Priyanka V. B., Sailaja G. S., Nanohydroxyapatite Encapsulated Bioactive Polymer Conjugated System for Controlled Delivery of Ciprofloxacin, International conference on Materials for Millenium MATCON 2019, CUSAT, Cochin, March 14-16, 2019.
35. Sumitha N. S., Ananjana K., Sailaja G. S., Magnetic nanofibers for targeted drug delivery, International conference on Materials for Millenium MATCON 2019, CUSAT, Cochin, March 14-16, 2019
36. Sreeja S., Harikrishna Varma P. R., Muraleedharan C. V., Sailaja G. S., Antimicrobial drug loaded osseinductive polymeric scaffold for the treatment of osteomyelitis, International conference on Materials for Millenium MATCON 2019, CUSAT, Cochin, March 14-16, 2019
37. Irthasa Aazem V. S., Sailaja G. S., Green anionic conducting membrane from Natural rubber latex for solid state alkaline fuel cells, National seminar on sustainable development and Climate change, Sacred Heart College, Thevara, 19th – 20th February 2019
38. Kottarathil Shijina, Rajith Illathvalappil, N. S. Sumitha, G. S. Sailaja, Sreekumar Kurungot, Balagopal N. Nair, A. Peer Mohamed, Gopinathan M. Anilkumar, Takeo Yamaguchi and U. S. Hareesh, Fe, N doped porous carbon derived from metal organic gel-melamine formaldehyde interpenetrating networks as highly efficient and durable electrocatalyst for fuel cells, International cinference on recent trends in materials science and technology, ICMST, Thiruvananthapuram, Kerala, October 10-13, 2018 (**Best Poster Award**)
39. Ananjana K., F. B. Fernandez. ,P. Ramesh, H. K. Varma, Sailaja G. S., Biomimetically mineralized ethylene vinyl acetate porous membranes for bone regeneration, National Seminar on Current Trends in Polymer Science (CTPS), Feb 9, 2018
40. Bins K. C., Dhanya V., Najilae S., Ananjana K., Baby Chakrapani, Ajith Vengellur, Sailaja G. S, A Novel Conducting Hydrogel Tissue Engineering Scaffold with Enhanced Mechanical Stability for Neuroregeneration after Axotomy, Molecular and cellular cognition society meeting MCCS - Asia, Singapore, August 01-03, 2017
41. K Shijina, B. N. Nair, S. Kurungot, A. P. Mohamed, G. M. Anil kumar, U. S. Hareesh, G. S. Sailaja, Chitosan intercalated metal organic gel as a green precursor of Fe- N- Doped mesoporous graphitic carbon for oxygen reduction reaction, International conference on expanding horizons of technological applications of ceramics and glasses, PUNE, December 14-16, 2017
42. Sneha K. R., Sailaja G. S., Smitha V. S., Liz Hannah George, Magnetic core-shell dual targeting system with superparamagnetic iron oxidenamoparticle (SPION)-mesoporousbioglass (MBG) nanohybrids for bone cancer therapeutics, International conference on expanding horizons of technological applications of ceramics and glasses, PUNE , December 14-16, 2017
43. Liz Hannah George, Sailaja G. S., P. Ramesh, H. K. Varma, Poly(Lactic Acid)/chitosan coated hierarchically biodegradablehydroxyapatite microspheres with highly interconnecting porosity for controlled drug delivery applications, International conference on expanding horizons of technological applications of ceramics and glasses, PUNE , December 14-16, 2017.
44. Sailaja G. S., Magnetic nanomedicine for cancer theranostics; microarchitectonics and nanofunctional probes, The 6th Asian Biomaterial Congress" Trivandrum, October 25-27, 2017
45. Liz Hannah George, Sailaja G. S., Aminoacid inspired supramolecular assembled structures of silver for bioimaging applications, The 6th Asian Biomaterial Congress" Trivandrum, October 25-27, 2017.
46. Sumitha N. S., Sailaja G. S, Magnetic chitosan microspheres with tunable degree of degradation for cancer therapy , The 6th Asian Biomaterial Congress" Trivandrum, October 25-27, 2017

47. Ananjana K., Sailaja G. S., Tunable magnetic nanostructures of SPIONS as biofunctionalprobes "The 6th Asian Biomaterial Congress" Trivandrum October 25-27 2017
48. Sailaja G. S., Amalgamating Tissue Engineering with Nanomedicine: Prospects Towards Next generationBiomaterials, , Department of Biochemistry, University of Kerala, National Seminar on Recent Biochemical Approaches in Therapeutics III (RBAT III) RBAT, February 16, 2017.
49. N. S. Sumitha, G. S. Sailaja, K. Shijina, U. S. Hareesh , G. M. Anilkumar, Balagopal N. Nair , I. V. Rajith, K. Sreekumar, Fe-N integrated metal organic gel- melamine formaldehyde derived porous carbon structures- a novel catalyst system for alkaline fuel cells, MACRO 2017 International Conference On Polymer Science Technology, 8-11 January 2017.
50. Sneha K. R., Sumitha N. S., Mohammed Mustafa C. P., Anie Y., Sailaja G. S., Biofunctional cellulose nanofibres from Agave sisalana: A potential precursor for biomedical applications, CUSAT-NUS Joint International conference on "Biotechnology and Neuroscience" (CUSBAN-2016) Cochin, India, December 19 - 21, 2016.
51. Sirajunnisa P., Anjali S. B., Anie Y. Sobhi Danial, Yamuna A., Sailaja G. S., Synthesis of Novel Biocompatible Fluorophore-Conjugated Polymer Derivatives for Bioimaging applications, CUSAT-NUS Joint International conference on "Biotechnology and Neuroscience" (CUSBAN-2016) Cochin, India, December 19 - 21, 2016.
52. Sumitha N. S., Veena V. , Anie Y., Sailaja G. S., Magnetic Biodegradable Microspheres for Targeted Therapy, CUSAT-NUS Joint International conference on "Biotechnology and Neuroscience" (CUSBAN-2016) Cochin, India, December 19 - 21, 2016.
53. Sailaja G. S., Magnetic Nanomedicine for Cancer Therapy: Design considerations and Evaluation of Therapeutic Efficacy, CUSAT-NUS Joint International conference on "Biotechnology and Neuroscience" (CUSBAN-2016) Cochin, India, December 19 - 21, 2016.
54. Gopinathan M. Anilkumar, G. S. Sailaja, Keita Miyajima, Takeo Yamaguchi, Development of Hybrid, PVDF-Layered Double Hydroxide (LDH) Substrate for Anion Conducting Pore-filling Membranes, 10th Conference of Aseanian Membrane Society (AMS10), Japan, July 26-29, 2016.
55. G. S. Sailaja, Ramesh P, Francis B fernandez, Muraleedharan C V, Harikrishna Varma, Surface phosphorylated polyethylene terephthalate fibrous matrix: An efficient scaffold with biomineralization potential for bone tissue engineering applications, 10th World Biomaterials Conference, Montreal, Canada, May 17-22, 2016.
56. G. S. Sailaja,Therapeutically Active Bone Grafts-From concept to Clinical applications, National conference on biopolymers and green composities, Cochin, India, Sept 29, 2016
57. G. S. Sailaja, Biomimetic approaches for bone tissue engineering: Role of smart interface, Fourth International Conference on Nanomedicine and Tissue Engineering (ICNT2016, MG University, Kottayam, Kerala, India, 12-14, August2016
58. G. S. Sailaja, Aminoacid Induced Microarchitectonics of Metal and Metal Oxide Nanocrystals, World Congress on Microscopy: Instrumentation, Techniques and Applications in Life Sciences and Materials Sciences (WCM 2015 ), MG University, India, October 7-9, 2015.
59. T.Yamaguchi, G. S. Sailaja, S. Miyanishi, An Anion-conducting membrane with Highly Cross linked, Packed iron exchange Sites and Aromatic Backbone for Solid state Alkaline Fuel cells. Nanocrystals, Aseanasian membrane conference, July, 2015
60. S. Miyanishi, G. S. Sailaja, T.Yamaguchi, Synthesis and characterization of highly cross-linked anion exchange pore-filling membrane for high performance solid state alkaline fuel cells, Cancun, Mexico, October 2014
61. G. S Sailaja, Praveen Bhoopathi, Bharathi Gorantla, Andrew J. Tsung and Jasti S.Rao, SPARC over expression Induces ER stress leading to autophagy-mediated apoptosis in neuroblastoma, American Association of Cancer Research, April 1-4, 2012, Chicago, USA
62. G. S. Sailaja, P. Ramesh, K Sreenivisan, T. V. Kumary and H. K. Varma, In vitro calcium phosphate coating on surface functionalized polymer: Ultra structural and cell adhesion study, Indo-Australian Conference on bio Materials, Implant Devices, Tissue Engineering and Regenerative Medicine, BITE- 2007 Jan.11-13, 2007, Thiruvanathapuram, India ( **best poster award**)
63. G. S. Sailaja, T. V. Kumary, H. K, Varma, Biomimetically modified poly(2-hydroxy ethyl methcrylate-co-methyl methcrylate) bone augmentation National Conference on Ceramic Materials for Medical Applications, Indian Institute of Technology-Chennai, India Sept 16-17, 2005 (**best paper award**)
64. G.S. Sailaja and B.N. Nair, Platinum nanoparticles for thin films and devices; Control of structure through surfactant selection, IUMRS-ICEM 2008, International conference on electronic materials, Sydney, Australia,2008.
65. G.S. Sailaja, and B.N. Nair, Processing of platinum nanoparticles and nano-slurries, 10th InternationalConference on Ceramic Processing Science (ICCPS-10), Inuyama, Aichi, Japan, May 25-28, 2008
66. B. Baker , W. Richmond , G.S. Sailaja , and B.N. Nair, Processing of alumina supported platinum nanoparticle catalysts 10th International Conference on Ceramic Processing Science (ICCPS-10), Aichi, Japan, May 25-28, 2008

67. G.S. Sailaja, T.V.Kumary, Y. Yokogawa, H.K. Varma, In vitro mineralization and cell adhesion on surface modified poly(2-hydroxy ethyl methacrylate-co-methyl methacrylate), International conference on ceramics in medicine (Bioceramics-18, Oral presentation), Dec-6-8, 2005, Kyoto, Japan.
68. G.S. Sailaja, P. Ramesh, K. Sreenivasan, T.V. Kumary and H.K. Varma, Biomimetic growth of hydroxyapatite on a novel functionally modified poly(2-hydroxy ethyl methacrylate-co-methyl methacrylate), pp. 94-97, Indo- Australian Conference on Biomaterials, Implant devices and Tissue engineering, BITE-2005, Jan.19-21, 2005, Thiruvananthapuram, India (received the **best poster award** in BITE-2005)
69. G.S. Sailaja, P. Ramesh, T. V. Kumary, H. K. Varma, Hydroxyapatite integrated polyelectrolyte complexes for bone regeneration, page: 321, 7th World Biomaterials Congress, 17-21, May 2004, Sydney, Australia (Oral)
70. G .S. Sailaja, P. Ramesh, H. K. Varma, A novel biodegradable composite system for bone regeneration, 16th session of Kerala Science Congress, January 29-31, 2004, CWRDM, Kozhikode, India (**best paper award**, in the Health science section)
71. G. S. Sailaja, P. Ramesh, H. K. Varma, Biomimetically modified poly (2-hydroxy ethyl methacrylate-co-methyl methacrylate) for hard tissue regeneration, MACRO-2004, International Conference on Polymers for Advanced Technologies, Thiruvananthapuram, India, Dec. 15-17, 2004
72. G S Sailaja, P. Ramesh and H. K. Varma, Synthesis of novel hydroxyapatite microspheres with interconnecting porosity for controlled drug delivery' by in the International Seminar on Advances in Polymer Technology – (APT-04) held at Cochin university of science and Technology, Cochin, India during January 16- 17, 2004
73. G.S. sailaja, P Ramesh, H.K. Varma, Natural rubber latex as a binder for the processing of hydroxyapatite implant materials, Indian Science Congress, Bangalore, India Jan 3-7, 2003
74. G.S. Sailaja, P. Ramesh, H.K. Varma, Porous hydroxyapatite microspheres prepared using natural rubber latex as binder, Macro-2002, IIT Kharagpur, India, December 9-11, 2002

**Invited Talks/Session Chair**

1. G.S.Sailaja, Polyelectrolyte membranes for Solid state Alkaline Fuel Cells: Design and Challenges, DTE Sponsored Six Day FDP on 'Fuel Cell Technology: Progress, Challenges and Future Prospects', organized by FSDTC GEC Kozhikode, during 22nd March to 27th March 2021 (Expert Lecture)
2. G.S. Sailaja, MATCON 2021, Organized by Dept Applied Chemistry, CUSAT March 2021 ( Session Chair)
3. G.S.Sailaja, CIPET Kochi- Skill training programme, Chitosan and its derivatives- Biomedical applications, Feb 11, 2021(Expert Lecture)
4. G.S.Sailaja, 'Sastrapadham', Samagra Sikhsha Kerala, Directorate of Higher Education, 19 Nov, 2020 (Invited Talk)
5. G. S. Sailaja. 3rd International Conference on Advance Functional Materials, CSIR-NIIST Trivandrum, Dec 9-10, ICAFM 2019 (Invited talk)
6. G. S. Sailaja, International Conference on Natural Polymers, M G University, ICNP Dec 6-8, 2019 (Invited talk)
7. G. S. Sailaja, Toxicity of nanoparticle and applied polymers, National conference on Toxicity-Current Perspectives, Bioradiance 19, July 6, 2019 (Invited talk)
8. G. S. Sailaja, International Conference on Optoelectronics and Nanomaterials for Advanced Technology, January 3-5, 2019 (Session chair).
9. G. S. Sailaja, National Seminar on Green composites, CIPET Cochin, January 17, 2019 ( Plenary Session Chair)
10. G. S. Sailaja, International Symposium Jan 14-15, 2019, S.H College Thevara ( Poster evaluation chair)
11. G. S. Sailaja, Biomedical Technology Developments For Illuminating Lives of People, S.H.College, Thevara, on 7th March, 2017, Cochin, India (Invited talk)
12. G. S. Sailaja, Amalgamating Tissue Engineering with Nanomedicine: Prospects Towards Next generation Biomaterials, National Seminar on Recent Biochemical Approaches in Therapeutics III (RBAT III) RBAT, Department of Biochemistry, University of Kerala, February 16, 2017, Thiruvananthapuram, India (Invited talk)
13. G. S. Sailaja, National Seminar on 'Advances in Polymer Science and Technology', St. Tresa's College, Ernakulam Cochin, January 24-25, 2017, India (Session Chair)
14. G. S. Sailaja, Magnetic Nanomedicine for Cancer Therapy: Design considerations and Evaluation of Therapeutic Efficacy, CUSAT-NUS Joint International conference on "Biotechnology and Neuroscience" (CUSBAN-2016) December 19 - 21, 2016 Cochin, India(Invited talk)
15. G. S. Sailaja, Polymers for Biomedical Applications: Prerequisites and Design considerations, One Week Training on Polymer Technology, at Asset Summer Suites, Kalamassery, 12-17, 2016 (Invited talk)

16. G. S. Sailaja, Biomedical Applications of Polymers, Koratty Polytechnique, Thrissur, December 9, 2016

17. G. S. Sailaja, Therapeutically Active Bone Grafts- From concept to Clinical Applications, National conference on Biopolymers and Green composites, Cochin, India, Sept 29, 2016, (Plenary talk)
18. G. S. Sailaja, Biomimetic approaches for Bone Tissue Engineering: Role of smart interfaceFourth International Conference on Nanomedicine and Tissue Engineering (ICNT 2016, Kerala, India, 12-14 August 2016, MG University, Kottayam, (invited talk)
19. G. S. Sailaja, Fourth International Conference on Nanomedicine and Tissue Engineering (ICNT 2016, Kerala, India, 12-14 August 2016, MG University, Kottayam on Biomimetic approaches for Bone Tissue Engineering: Role of smart interface (Plenary Session Chair)
20. G. S. Sailaja, Department of Chemistry, Sree Sankara College, Kalady on the topic, 'Biomaterials -from concept to Clinical applications' March 2, 2016 (invited talk)
21. G. S. Sailaja, Advances in Applied Mathematics, Material Science and Nanotechnology for Engineering Applications" (IC-AMMN-2K16) at Federal Institute of Science and Technology (FISAT), Angamaly on January 7, 8 & 9th, 2016 (Invited talk)

22. G. S. Sailaja, Department of Chemistry, Sree Sankara College, Kalady on the topic, 'Biomaterials -from concept to Clinical applications' March 2, 2016 (invited talk)
23. G. S. Sailaja, Centre for Biopolymer Science & Technology (CBPST) , A unit of Centre for Plastics Engineering and Technology, Govt of India in the Workshop for Faculty members of Govt. Polytechniques, Kerala, on the topic Polymeric nanocomposites, March 2016 (invited talk)
24. G. S. Sailaja, World Congress on Microscopy: Instrumentation, Techniques and Applications in Life Sciences and Materials Sciences (WCM 2015), MG University during October 7-9 2015 (invited talk)
25. G. S. Sailaja, World Congress on Microscopy: Instrumentation, Techniques and Applications in Life Sciences and Materials Sciences (WCM 2015 ), MG University during October 7-9 2015 (invited talk and session chair)
26. G. S. Sailaja, National conference on NANO-BIO, February, 2015, Department of Polymer Science and Rubber Technology, Cochin University of Science and Technology (invited talk)

**Awards and Honours**

- **SPSI Gold Medal** (Society of Polymer Science, India), **2009**
- Listed in **top 25 hottest articles**, Sciverse Science Direct (G.S.Sailaja, P. Ramesh T V Kumary, H K Varma, Human osteosarcoma cell adhesion behaviour on hydroxy apatitate integrated chitosan- poly(acrylic acid) poly electrolyte complexes, acta biomaterialia, 2, 2006,651-657
- **Best paper award**; Indian Institute of Technology Madras, India **2005**
- **Young Scientist Award**, Govt of Kerala, 2004
- **Travel Awards** from Department of Science and Technology (Govt India) Bioceramics-18, Japan **2005** and from Council of Scientific and Industrial Research ( Govt India) 7th World Biomaterial Congress, Sydney, Australia **2004**
- **Best Poster Awards** : Indo- Australian Conference on Biomaterials: **2005 & 2007**
- **Honorary associate membership**, Society of Biomaterials and Artifical Organs, India **2005**
- Senior Research Fellowship, Council of Scientific and Industrial Research, Govt of India (CSIR) 2002
- **SCTIMST Fellowship**, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Govt of India **2002**
- **University First,** M.Tech. polymer Technology, Cochin University of Science and Technology, India **2001**

**Funded Research (Completed and Ongoing)**

1. Development of Magnetically modulated therapeutically active layered double hydroxide as a nanomedicine with hyperthermia potential for cancer theranostics, DST SERB, 33 lakhs, **Principal Investigator** (completed) 2016-2019

2. Development of antibacterial formulations for preventing nosocomial infections from therapeutically modulated natural rubber latex formulations, DBT, 48 lakhs; **Principal Investigator** (completed) 2017-2021

3. Preparation and characterization of Cissus Quandrangularis Linn plant extract incorporated chitosan collagen scaffold for bone regeneration, KSCSTE, 22 lakhs; **Scientist mentor**, (completed) 2017-2020

4. Biocompatible 3D Scaffolding through Femtosecond Laser Photo- polymerization for Tissue Engineering and Regenerative Medicine **Chancellors Award Project** - **CUSAT 2020**, **5 Cr** (***One among the 7 investigators***) Ongoing 2020-2023

5. Development of an inherently radiopaque, biodegradable and cost effective TACE system with liver regenration potential for the treatment of Hepatocellular carcinoma, RUSA- Component 10, 5425000/- **PI- Dr. Sailaja G. S.** (Principal Investigator) (sanctioned)

**Projects Under Review**

Biomimetic design of an antibacterial osteogenic periosteum composed of BMC embedded Mg-Al- layered double hydroxide templated piezoelectic β -PVDF electrospun membrane for enhanced bone regeneration, **MHRD (SPARC), Submitted along with Prof. Takeo Yamaguchi, Tokyo University of Technology Japan and Dr. Hidenori Ohashi, Tokyo Agricultural University, Japan**

**Membership in Professional Bodies**

1. Honorary Associate member, Society of Biomaterials and Artificial Organs, India
2. Life member, Society of Polymer Science, India
3. Life member, Materials Research Society, India
4. Member, ACS Rubber chapter, India

**Reviewer:** ACS, RSC, IOP, Elsevier, Springer, etc.

**Research Guidance:**

- **Ph. D.**: **10** (ongoing)
- **Postdoc -3** (ongoing)
- **Project Fellow** (SRF) 1 (completed):
- **M Phil: 2; M. Tech: 3; MSc: 21 B. Tech: 4; summer intern: 4** ( completed)
- **Student Awards- 5**
- **NPDF-1**

**Administrative positions:** Institutional Animal ethics committee expert, DST-PURSE committee member, Academic committee ( B Tech) member, Academic Bulletin -member, Department Alumni Secretary (past) Joint secretary -Alumni PSRT (present), PRC research committee advisor, Biosafety committee member, Anti-ragging committee member, Board of studies ( Polymer Technology) member etc.

**Conferences/Workshop Organized**

- International Conferences on Advances Polymer Technology, APT : May 2021 (Organising Secretary)
- National Seminar on Current Trends in Polymer Science 2020, February 28, Department of PS&RT, CUSAT (Organising Secretary)
- Epoch 2019-National Workshop 1 March 2019, Department of PS&RT, CUSAT (coordinator)
- National Workshop-Innovations in Nanoworld: Neoteric Visions and Emerging Nanotechnologies (INNVENT-2017), 13-15 December 2017, IUCND CUSAT (Coordinator)