

**NAME:** R.SELVA KUMAR

**DESIGNATION:** ASSOCIATE PROFESSOR

**DEPARTMENT:** Nanobiotechnology

**NAME OF THE ORGANIZATION:** PSG Institute of Advanced Studies

**PLACE:** Coimbatore

**PINCODE:** 641004

**MOBILE:** 9944920032

**E-MAIL:** rsk@psgias.ac.in

**AREA OF SPECIALIZATION:**

- Molecular Sciences
- Water Purification
- Nanomaterials
- Nanotechnology
- Meniscal Tissue Engineering

**PUBLICATIONS:**

1. “Recent advances in traditional medicinal plant research and nanocarriers for arthritis treatment and management: A review”,V Elakkiya, K Krishnan, A Bhattacharyya, **R Selvakumar**,Journal of Herbal Medicine,2020
2. Mesoporous ferromagnetic manganese ferrite nanoparticles for enhanced visible light mineralisation of azoic dye into nontoxic by-products”,R Govindarajan, **R Selvakumar**, SP Suriyaraj, S Ramachandran, P Arivalagan, ...Science of the Total Environment, 2020
3. Mesoporous Mg-doped Hydroxyapatite Nanorods Prepared from Bio-waste Blue Mussel Shells for Implant Applications,K Gopalu, EB Cho, **R Selvakumar**, GS Kumar, E Kolesnikov, G Janarthanan, MM Pillai, ...,Cermic International, 2020
4. Influence of secondary oxide phases in enhancing the photocatalytic properties of alkaline earth elements doped LaFeO<sub>3</sub> nanocomposites,T Vijayaraghavan, M Bradha, B

Pradeepta, P Kulamani, G Ramadoss, ... **R Selvakumar** ,Journal of Physics and Chemistry of Solids, 2020

5. Elucidating the role of microstructural modification on stress corrosion cracking of biodegradable Mg-4Zn alloy in simulated body fluid,D Prabhu, J Nampoothiri, E V, N R, S R, G P, **R Selvakumar**, Sivasubramanian R,Material Science and Engineering C 106, 110164,2020
6. Biodegradable cellulosic sanitary napkins from waste cotton and natural extract based anti-bacterial nanocolorants,G Sathiskumar, A Manisekaran, S R, S R, A Bhattacharyya,, **R Selvakumar** journal of the Indian Institute of Science 99 (3), 519,2019
7. Knee Meniscus Injury: Insights on Tissue engineering Strategies Through Retrospective Analysis and In Silico Modeling,MM Pillai, J Gopinathan, E V, **R Selvakumar**, SSR Sathishkumar M, S Sahanand, ...,Journal of Indian Institute of Sciences 99 (3), 429,2019
8. One pot facile green synthesis of crystalline Bio-ZrO<sub>2</sub> nanoparticles using Acinetobacter sp. KCSI1 under room temperature,SP Suriyaraj, G Ramadoss, K Chandraraj, **R Selvakumar**,Material Science and Engineering C 105, 110021,2019
9. Engineered knee meniscus construct: understanding the structure and impact of functionalization in 3D environmenG Janarthanan, MM Pillai, SS Kulasekaran, S Rajendran, **R Selvakumar** ...Polimer Bulletin, DOI: 10.1007/s00289-019-02874,2019
10. Electrospun PCL nanofibers blended with Wattakaka volubilis active phytochemicals for bone and cartilage tissue engineering,V Elakkiya, K Santosh Sahanand, A Bhattacharyya, **R Selvakumar**,Nanomedicine: Nanotechnology, Biology, and Medicine 21, 102044,2019
11. Sodium dodecyl sulfate mediated microwave synthesis of biocompatible superparamagnetic mesoporous hydroxyapatite nanoparticles using black Chlamys varia seashell as a calcium ...,K Gopal, EB Cho, KG Suresh, E Kolesnikov, **R Selvakumar** ,DY Karpenkov, ...,Ceramic International 45 (12), 15143-15155,2019

12. Ascorbic Acid-Assisted Microwave Synthesis of Mesoporous Ag-doped Hydroxyapatite Nanorods from Bio-Waste Seashells for Implant Applications, K Gopal, EB Cho, KG Suresh, **R Selvakumar**, E Kolesnikov, G Janarthanan, MM Pillai, ACS Applied Bio Materials 2 (5), 2280-2293,2019
13. Surface functionalized diatomaceous earth for effective adsorption of strontium from aqueous solution,R Dhanapal, R Ravindran, N Seethalakshmi, **R Selvakumar**,Journal of Radioanalytical and Nuclear Chemistry 319 (3), 1301-1306,2019
14. In vitro evaluation of phytochemical loaded electrospun gelatin nanofibers for application in bone and cartilage tissue engineering,E Venugopal, N Rajeswaran, K Sahanand, A Bhattacharyya, S Rajendran,, **R Selvakumar** Biomedical Materials 14, 015004,2019
15. Characterization Methods of Nanotechnology-Based Smart Textiles,MM Pillai, R Senthilkumar, **R Selvakumar**, A Bhattacharyya,Smart Textiles: Wearable Nanotechnology 1, 347-77,2018
16. Challenges and complexities in remediation of uranium contaminated soils: A review. **R Selvakumar**, G Ramadoss, MP Menon, KK Rajendran, P Thavamani, Journal of Environmental Radioactivity 192, 592-603
17. Tissue engineering of human knee meniscus using functionalized and reinforced Silk-PVA composite 3D scaffolds: understanding the in vitro and in vivo behaviour,MM Pillai, J Gopinathan, R Senthil Kumar, G Sathish Kumar, **R Selvakumar**, ...,Journal of Biomedical Materials Research: Part A 106 (6), 1722-1731,2018
18. Carbon nanofiber amalgamated 3D poly-ε-caprolactone scaffold functionalized porous-nanoarchitectures for human meniscal tissue engineering: In vitro and in vivo ...,J Gopinathan, MM Pillai, shanthakumari, **R Selvakumar**, S Kothai, D Rai, S Sahanand,Nanomedicine: Nanotechnology, Biology, and Medicine 14, 2247-2258,2018
19. Human knee meniscus regeneration strategies: a review on recent advances, MM Pillai, J Gopinathan, **R Selvakumar**, A Bhattacharyya, Current Osteoporosis reports 16 (3), 224-

235,2018

20. A Novel method to develop three dimensional (3D) silk-PVA microenvironments for bone tissue engineering – an in vitro study, M Pillai, E Venugopal, L H, J Gopinathan, S Rajendran, A Bhattacharyya, **R Selvakumar**, Biomedical Physics & Engineering Express 4 (2), 027006, 2018
21. Green synthesis of lignin based fluorescent nanocolorants for live cell imaging, MM Pillai, K Jothi, Roshinabegham, S R, **R Selvakumar**, A Bhattacharyya, Materials letters 212, 78-81, 2018
22. Hydroxyapatite particle (HAp) reinforced biodegradable Mg-Zn- Ca metallic glass composite for bio-implant application, M Ramya, M Pillai, B Raj, R K R, **R Selvakumar**, Biomedical Physics & Engineering Express 4 (2), 025039, 2018
23. Phase competition induced bio-electrochemical resistance and bio-compatibility effect in nano-crystalline Zrx-Cu100-x thin films, B Geetha Priyadarshini, V N, M V, V Priya L, S B, E V, S R, **R Selvakumar**, A P C, Journal of Nanoscience and Nanotechnology 18 (7), 4534-4543, 2017
24. DEVELOPMENT AND EVALUATION OF FINASTERIDE LOADED ETHOSOMES FOR TARGETING TO THE PILOSEBACEOUS UNIT, V Wilson, K Siram, S Rajendran, V Sankar, **R Selvakumar**, Artificial Cells Nanomedicine and Biotechnology, 2017
25. Extraction and modification of cellulose nanofibers derived from biomass for environmental application, MP Menon, **R Selvakumar**, S Ramakrishna, RSC Advances 7 (68), 42750-42773, 2017
26. Stimulation of human osteoblast cells (MG63) proliferation using decanoic acid and isopropyl amine fractions of Wattakaka volubilis leaves, E Venugopal, G Ramadoss, K

Krishnan, SS Eranezhath, A Bhattacharyya, **R Selvakumar** ..., Journal of Pharmacy and Pharmacology 69 (11), 1578-1591, 2017

27. Synergistic effect of electrical conductivity and biomolecules on human meniscal cell attachment, growth and proliferation in poly- $\epsilon$ -caprolactone nanocomposite scaffolds, G Janarthanan, M Pillai, S K, D BK, S Rajendran, A Bhattacharyya, Biomedical Materials 12, 065001, 2017
28. An in vitro 3D model using collagen coated gelatin nanofibers for studying breast cancer metastasis, J Guru, M Pillai, S Rajendran, A Bhattacharyya, S Chandrasekharan Biofabrication 9, 015016, 2017
29. A Facile and Efficient Single Step Ball Milling Process for Synthesis of Partially Amorphous Mg-Zn-Ca alloy Powders for Dye Degradation, M Ramya, M Karthika, R Selvakumar, Baldevraj, KR Ravi, Journal of Alloys and Compounds 696, 185-192, 2017
30. Optical Detection of CA 15.3 Breast Cancer Antigen using CdS Quantum Dot, V Elakkiya, D Nataraj, P Biji, R Selvakumar, IET nanobiotechnology 11 (3), 268-276, 2017
31. Facile synthesis of yeast cross-linked Fe<sub>3</sub>O<sub>4</sub> nanoadsorbents for efficient removal of aquatic environment contaminated with As(V), S Rajesh Kumar, V Jayavignesh, R Selvakumar, K Swaminathan, ..., Journal of Colloid and Interface Science 484 (15), 183–195, 2016
32. Functionalization of scaffolds with biomolecules for various types of tissue engineering applications, **R Selvakumar**, A Bhattacharyya, J Gopinathan, R Sournaveni, MM Pillai, Nanomedicine and Tissue Engineering: State of the Art and Recent Trends 1, 2016
33. Advances in nanomaterial based approaches for enhanced fluoride and nitrate removal from contaminated water SP Suriyaraj, **R Selvakumar**, RSC Advances, 10565-10583, 2016
34. Silk-PVA hybrid nanofibrous scaffolds for enhanced primary human meniscal cell proliferation, MM Pillai, J Gopinathan, B Indumathi, **R Selvakumar**, YR Manjoosha,

...,The Journal of Membrane Biology 249 (6), 813-822,2016

35. Cation doped hydroxyapatite nanoparticles enhance strontium adsorption from aqueous system: a comparative study with and without calcination,R Poorvisha, N Seethalakshmi, T Vijayaraghavan, P Thavamani, **R Selvakumar** ,R Naidu, ...Applied Clay Science 134 (2), 136-144,2016
36. Ultrathin hexagonal MgO nanoflakes coated medical textiles and their enhanced antibacterial activity,VP Dinesh, S Aravindh, SP Suriyaraj, **R Selvakumar**, P Biji,Materials Research Express 3, 105005 (1-11),2016
37. Rapid and efficient visible light photocatalytic dye degradation using AFe<sub>2</sub>O<sub>4</sub> (A = Ba, Ca and Sr) complex oxides,T Vijayaraghavan, SP Suriyaraj, **R Selvakumar**, R Venkateswaran, ...,Materials Science and Engineering B 210, 43-50,2016
38. A combination of biomolecules enhances expression of E-cadherin and peroxisome proliferator-activated receptor gene leading to increased cell proliferation in primary human ...MM Pillai, V Elakkiya, J Gopinathan, **R Selvakumar** C Sabarinath, S Shanthakumari, ...Cytotechnology 68 (5), 1747-61,2016
39. Carbon nanofillers incorporated electrically conducting poly  $\epsilon$ -caprolactone nanocomposite films and their biocompatibility studies using MG-63 cell line,J Gopinathan, MM Pillai, V Elakkiya, **R Selvakumar**, A Bhattacharyya,Polymer Bulletin 73 (4), 1037-53,2016
40. Synthesis and characterisation of 3-dimensional hydroxyapatite nanostructures using thermoplastic polyurethane nanofiber sacrificial template, **R Selvakumar** R Poorvisha, SP Suriyaraj, P Thavamani, R Naidu, M Megharaj, ...,RSC Advances 5, 97773–97780,2015
41. Scavenging of nitrate ions from water using Hybrid Al<sub>2</sub>O<sub>3</sub>/bio-TiO<sub>2</sub> nanocomposite impregnated thermoplastic polyurethane nanofibrous membrane,SP Suriyaraj, P Mamatha M, A Bhattacharyya, **R Selvakumar**,RSC Advances 5, 68420-68429,2015

42. Investigation of porous silica nanostructures in diatoms isolated from Kurichi and Sulur lakes of Coimbatore, India using Field Emission Scanning Electron Microscopy, N Seethalakshmi, R **Selvakumar**, Micron 79, 24-28, 2015
43. Impact of silk fibroin based scaffold structures on human osteoblast MG63 cell attachment and proliferation V Aneesia, V Elakkiya, S PonJanani, J Gopinathan, M, R **Selvakumar** M Pillai, ...International Journal of nanomedicine 10 (Suppl 1), 43-51, 2015
44. Hybrid Al<sub>2</sub>O<sub>3</sub>/Bio-TiO<sub>2</sub> Nanocomposite impregnated Thermoplastic polyurethane (TPU) nanofibrous membrane for Fluoride removal from aqueous solution, SP Suriyaraj, B Amitava, S Rajendran, R **Selvakumar**, RSC Advances 5, 26905-26912, 2015
45. Egg shell membrane – a potential natural scaffold for human meniscal tissue engineering: an in vitro study, Mamatha M. Pillai, T. R. Akshaya, R **Selvakumar**, V. Elakkiya, J. Gopinathan, K. Santosh ..., RSC Advances 5, 76019-76025, 2015
46. Biomolecule Incorporated Poly-ε-Caprolactone Nanofibrous Scaffolds for Enhanced Human Meniscal Cell Attachment and Proliferation, J Gopinathan, M Steffie, V Elakkiya, MP Mamatha, K Santosh Sahanand, .. R **Selvakumar**, RSC Advances 5, 73552-61, 2015
47. Enhanced Cell-Wall Damage Mediated, Antibacterial Activity of Core-Shell ZnO@Ag Heterojunction Nanorods against Staphylococcus aureus and Pseudomonas aeruginosa, VP Dinesh, SP Suriyaraj, T Vijayaraghavan, R **Selvakumar**, P Biji, Journal of Materials Science: Materials in Medicine. 26, 204, 2015
48. Extremophilic Bacillus cereus MVK04 isolated from thorium ore sample possesses Self Assemblable Surface Layer Protein On Cell Wall to Resist extreme environments, S Aravindh, R **Selvakumar**, J Ravichandran, U Kamachi Mudali, Geomicrobiology 32 (5), 445-452, 2015
49. Synthesis of photo catalytic La (1-x) A<sub>x</sub>TiO<sub>3.5</sub>- <math>\delta</math> (A= Ba, Sr, Ca) nano perovskites and their application for photo catalytic oxidation of congo red dye in aqueous solution, M Bradha, T Vijayaraghavan, SP Suriyaraj, R **Selvakumar**, A

Anuradha, Journal of Rare Earths 33 (2), 160-167,2015