Name: *Dr. Soumya Sheela Aravind*

Designation: *Post-Doctoral Research Associate, University of Sharjah*

Email*: saravind@sharjah.ac.ae*

Motivation: *A Proactive, self-motivated and adaptable researcher, with a broad and keen interest in bioengineering to developing innovative and inexpensive strategies for tissue regeneration and repair. I particularly enjoy teaming up with scientists from different disciplines to build up new skills and resolve new challenges.*

Education:	***Year***
PhD, Nano Bioengineering	*2014*
Amrita University	

Research Experience

Research Associate II *January 2017- January2018*
SCTIMST, Trivandrum

- *Experience in maintenance of quality system, in vitro cytotoxicity and cytocompatibility evaluation of medical devices and biomaterials based on ISO-10993.*
- *Experience in in vitro cytotoxicity test accredited by international accreditation committee (COFRAC).*

Teaching Experience

Experience in teaching graduate and post graduate students (Immunology, Cell and Molecular Biology and Biochemistry).

Technical Skills

Nanotechnology: *Nanomodification of biomaterials (Titanium, Titanium alloys), surface modification of medical devices- orthopaedic implants, dental implants, hydrothermal processing of materials for nanostructuring, electrospinning, Utilization of different biopolymers for hydrogel preparation.*

Cellular biology:

- *Isolation and maintenance of primary cells- including human Mesenchymal Stem cells from umbilical cord blood, adipose derived stem cells from lipoaspirate, adipose tissue and human umbilical cord derived endothelial (HUVEC), its isolation, maintenance and differentiation into different cell lineages.*
- *Explant culture: Vascular smooth muscle cells (VSMC), Dental Pulp Stem cells, Periodontal ligament cells.*
- *Cell lines: Mouse fibroblasts (L929), osteosarcoma cell lines MG-63, Murine osteoblast-like cell line MC3T3-E1.*

Microscopy: *light microscopy, fluorescence and confocal for cell imaging*

***Molecular biology**: RNA extraction, reverse transcription, PCR, gel analysis, Real time PCR.*
***Biochemistry:** Cell based assays for proliferation, cytotoxicity, blood plasma analysis, Protein quantification (BCA), Western blotting, immunocytochemistry, immunohistochemistry, enzymatic assays, FACS based cellular assays, cytoskeletal staining, H&E staining.*

***Animal models:** Handling, feeding, in vivo implantation studies of rabbit models for implantation of orthopaedic implants.*

***Analytical methods:** spectrophotometry, chromatography (thin layer), theoretical knowledge and experience in preparation of solvents and samples for HPLC, Flow cytometry, DLS, XRD, XPS and SEM.*

List of Publications

1. *V.K. Gopinath, **S Soumya**, M.G. Mohammad (2020). Ror β expression in Activated macrophages and Dental pulp stem cells. International Endodontic Journal. 10.1111/iej.13431. . (IF: 3.8-Q1)*

2. *VK Gopinath, **S Soumya**, VY Chakrapani, TSS Kumar. Odontogenic differentiation of inflamed dental pulp stem cells (IDPSCs) on polycaprolactone (PCL) nanofiber blended with hydroxyapatite (2020). Dental Materials Journal.10.4012/dmj.2020-005.https://doi.org/10.4012/dmj.2020-005, https://www.jstage.jst.go.jp/article/dmj/advpub/0/advpub_2020-005/_article/-char/jA.(IF: 1.55-Q2)*

3. *Hatem M. El-Damanhoury, Nesrine A. Elsahn, **Soumya Sheela**, Maria D. Gaintantzopoulou. Adhesive luting to hybrid ceramic and resin composite CAD/CAM Blocks:Er:YAG Laser versus chemical etching and micro-abrasion pretreatment., Journal of Prosthodontic Research, Article ID JPOR_2020_50, [Advance publication] Released September 26, 2020, Online ISSN 1883-9207, Print ISSN 1883-1958,* https://doi.org/10.2186/jpr.JPOR_2020_50 (*IF: 2.99-Q1)*

4. *Vellore Kannan Gopinath, **S. Soumya**, Manju Nidagodu Jayakumar. Osteogenic and odontogenic differentiation potential of dental pulp stem cells isolated from inflamed dental pulp tissues (I-DPSCs) by two different methods, Acta Odontologica Scandinavica, 2020;78(4):281-289. doi: 10.1080/00016357.2019.1702716.(IF: 1.67-Q1)*

5. *Hatem M. El-Damanhoury, Nesrine Ali Elsahn, **Soumya Sheela**, Talal Bastaty. In vitro Enamel Remineralization Efficacy of Calcium Silicate–Sodium Phosphate–Fluoride Salts vs NovaMin Bioactive Glass, Following Tooth Whitening. European Journal of Dentistry.*

6. *Odontogenic Differentiation of IDPSC Isolated Through Two Different Methods". Gopinath, Vellore, **Sheela, Soumya**, Jayakumar, Manju Nidagodu. Journal of Dental Research Vol 98> (A): 2843, (*www.iadr.org*)*

7. ***S. Soumya**, P. R. Sreerekha, Deepthy Menon, Shantikumar V. Nair, Krishna Prasad Chennazhi. Generation of a biomimetic 3D microporous nano-fibrous scaffold on Titanium surfaces for better osteointegration of orthopaedic implants. Journal of Material Chemistry 2012: 22: 1904-1915. (IF: 6.6)*

8. ***S Soumya**, K.M. Sajesh, R Jayakumar, S.V. Nair, K.P. Chennazhi. Development of a phytochemical scaffold for bone tissue engineering. Carbohydrate Polymers 2012: 87: 1787–1795. (IF: 7.18)*

9. *Mathew Peter, N. S. Binulal, **S. Soumya**, S. V. Nair, H. Tamura R. Jayakumar. Nanocomposite Scaffolds of Bioactive Glass Ceramic Nanoparticles Disseminated Chitosan Matrix for Tissue Engineering Applications, Carbohydrate Polymers, 2010, 79, 284-289. (IF: 7.18)*

10. *Jaikumar D, Sajesh KM, **Soumya S**, Nimal TR, Chennazhi KP, Nair SV, Jayakumar R. Injectable alginate-O-carboxymethyl chitosan/nano fibrin composite hydrogels for adipose tissue engineering. Int J Biol Macromol. 2014 Dec 25; 74C:318-326. (IF: 5.16)*

Conference proceedings:

1. *Best oral presentation award for the research work titled "Phenotypic Characterization of Dental Pulp Stem Cells Isolated from Irreversible Pulpitis with Dental Pulp Stem Cells from Impacted Teeth" at ICSCRM 2018: 20th International Conference on Stem Cells and Regenerative Medicine held in Dubai, UAE during Dec 20- 21, 2018.*

2. ***Soumya S**, Sreerekha PR, Shantikumar V.Nair, Krishna PrasadChennazhi.Generation of a 3D Micro-Porous Nano-Fibrous scaffold on Titanium for orthopaedic applications- International Conference on Nano Science and Technology (ICONSAT) held at IIT Bombay, Mumbai, India, during Feb 17-20, 2010 (Poster).*

3. ***Soumya S**, Swarnalatha B, Shantikumar V.Nair, Krishna Prasad Chennazhi, K. S. Subramanyam, C.N. R. Rao. A novel nano-scale hydrogel based injectable scaffold containing graphene nanoparticles for cartilage regeneration-International Conference on Nano Science and Technology (ICONSAT) held at IIT Bombay, Mumbai, India, during Feb 17-20, 2010 (Poster).*

4. ***Soumya S**, Mridula Sreedharan, Shantikumar.V.Nair, Krishna Prasad Chennazhi. Injectable systems using alginate hydrogel functionalized with Growth Factor loaded protein nanoparticles for cartilage regeneration- 3rd Bangalore Nano conference held at Hotel Lalith Ashok, Bangalore during Dec 8-9, 2010 (Poster).*

5. ***Soumya S**, Sreerekha P.R, Deepthy Menon, Shantikumar V.Nair, Krishna Prasad Chennazhi. Fabrication of 3D biomimetic architecture on metallic Titanium: A novel biochemical approach for enhanced osteointegration- ICONSAT 2012 held at Hyderabad during Jan 20-23, 2012 (Selected for free participation).*

6. ***Soumya S**, Mridula Sreedharan, Praveen G, ShantikumarV.Nair, KrishnaPrasad Chennazhi. Development of TGF-β loaded injectable fibrin alginate composite hydrogel system for cartilage tissue regeneration- NANOBIO 2012, held at Amrita Centre for Nanosciences and Molecular Medicine during Feb 21-23, 2012 (Poster).*

7. ***Soumya S**, Deepthy Menon, Shantikumar V.Nair, Krishna Prasad Chennazhi. Fabrication of a novel 3D biopolymeric scaffolding on metallic Titanium and its effect on bone specific matrix protein expression- International Conference on Design of Biomaterials& XXIII Annual Meeting of Society of Biomaterials and Artificial Organs (SBAOI) held at IISC from Dec 9-11, 2012 (Poster).*

8. ***Soumya S**, Deepthy Menon, Shantikumar V.Nair, Krishna Prasad Chennazhi. Hemocompatibility studies of fibrin/alginate scaffolding on metallic Ti- Amrita Bioquest - International Conference on Biotechnology for Innovative Applications held at Amritapuri during Aug 10-14, 2013 (Poster).*