

Dr. Ganesh Shanmugam
Principal Scientist
Organic and Bioorganic Chemistry Lab
Central Leather Research Institute
Chennai

List of publications (2015-2020)

2020

- Visalatchi M, Madhan B, Shanmugam G. N-Vanillylnonanamide, a natural product from capsicum oleoresin, as potential inhibitor of collagen fibrillation. Int J Biol Macromol. 2020 Aug 1;156:1146-1152. doi: 10.1016/j.ijbiomac.2019.11.148. Epub 2019 Nov 19. PMID: 31756481.
- Ilamaran M, Sundarapandian A, Aarthi M, et al. Growth factor-mimicking 3,4-dihydroxyphenylalanine-encoded bioartificial extracellular matrix like protein promotes wound closure and angiogenesis. Biomaterials Science. 2020 Nov. DOI: 10.1039/d0bm01379j.
- Aini Flora Arokianathan, Koduvayur A Ramya, Asuma Janeena, Abhijit P. Deshpande, Niraikulam Ayyadurai, Ambrose Leemarose, Ganesh Shanmugam, Non-proteinogenic amino acid based supramolecular hydrogel material for enhanced cell proliferation, Colloids and Surfaces B: Biointerfaces, Volume 185, 2020, 110581.

2019

- Murali, D. M.; Shanmugam, G.*; Aromaticity of phenyl ring imports thermal stability to supramolecular hydrogels formed by Low Molecular Mass Compound. New J Chem. 2019, 43, 12396-12409. (DOI: 10.1039/C9NJ01781J)
- Augustine, G.; Raghavan, S.; NumbiRamudu, K.; Easwaramoorthi, S.; Shanmugam, G.; Murugaiyan, J. S.; Gunasekaran, K.; Govind, C.; Karunakaran, V.; Ayyadurai, N.; Excited State Electronic Interconversion and Structural Transformation of Engineered

Red Emitting Green Fluorescent Protein Mutant. *J Phys Chem B*. 2019, 10, 2316-2324. (DOI: 10.1021/acs.jpcb.8b10516)

- Meganathan, I.; Janeena, A.; Valappil, S.; Ramudu, K. N.; Shanmugam, G.; and Ayyadurai, N.; Self-assembly and Higher Order Structure Forming Triple Helical Polyproline-II like Protein as a Novel Biomaterial for Cell Proliferation. *Biomater Sci* 2019, 7, 2191-2199. (DOI: 10.1039/C9BM00186G)
- Panduranganae, S.; Meganathana, I.; Ragavan, S.; Ramudua, K. N.; Shanmugam, E.; Shanmugam, G.; and Ayyadurai, N.; Rational and Xenobiology based Directed Evolution for Green Leather Processing: Creating Stable Enzyme for Sulphide-free Leather Beam House Operation. *Green Chem* 2019, 21, 2070-2081 (DOI: 10.1039/C8GC03479F)

2018

- Jayamani, J.; Naisini, A.; Madhan, B.; Shanmugam, G.*; Ferulic acid, a natural phenolic compound, as a potential inhibitor for collagen fibril formation and its propagation associated with fibrosis. *Int J Biol. Macromol.* 2018, 113, 277-284.
- Reddy, R. R.; Shanmugam, G.*; Madhan, B.; Phani Kumar, B. V. N.; Selective binding and dynamics of imidazole alkyl sulfate ionic liquids with human serum albumin and collagen –A detailed NMR investigation. *Phys Chem Chem Phys* . 2018, 20, 9256-9268.
- Reddy, S. M. M.; George, A.; Ayyadurai, N.; Shanmugam, G.*; Biocytin based pH-stimuli responsive supramolecular multivariant hydrogelator for potential applications. *ACS Applied Bio Materials*, 2018, 1, 1382-1388. (DOI: 10.1021/acsabm.8b00340).
- Jayamani, J.; Reddy, R. R.; Madhan, B.; Shanmugam, G.*; Disintegration of collagen fibrils by Glucono- δ -lactone: An implied lead for disintegration of fibrosis. *Int J Biol. Macromol.* 2018, 107, 175-185.

2017

- Reddy, S. M. M.; Pramod, D.; George, A.; Deshpande, A.P.; Ayyadurai, N.; Shanmugam, G.*; A hybrid low molecular weight gelator composed of pyrene and fluorene moieties

for effective charge transfer in supramolecular ambidextrous gel. *Langmuir*. 2017, 33, 13504-13514.

- Jayamani, J.; Shanmugam, G*. Diameter of the vial plays a crucial role in the amyloid fibril formation: Role of interface area between hydrophilic-hydrophobic surfaces. *Int J Biol. Macromol.* 2017, 101, 290-298
- Gopinath, A.; Shanmugam, G; * Madhan, B.; * Rao, J. R. Differential behavior of native and denatured collagen in the presence of alcoholic solvents: A gateway to instant structural analysis. *Int J Biol. Macromol.* 2017, 102, 1156-1165
- George A.; Krishna priya, G.; Ilamaram,.; Kamini N.R.; Gowthaman, M.K.; Shanmugam, G; Easwaramoorthi, S.; Ayyadurai, N. Accelerated strain-promoted oxidation controlled cyclooctyne–quinone cycloaddition for bioorthogonal labeling. *Chemistry Select.* 2017, 2, 7117-7122

2016

- Reddy, S. M. M.; Pramod, D.; Deshpande, A.P.; Shanmugam, G.*; Hydrogelation induced by change in the hydrophobicity of amino acid side chain in Fmoc-functionalized amino acid: Significance of sulfur on hydrogelation. *ChemPhysChem*. 2016, 17, 2170-2180.
- Reddy, S. M. M.; Shanmugam, G.*; The Role of an Intramolecular Aromatic π – π Interactions on the Self-Assembly of Di-L-Phenylalanine Dipeptide driven by Intermolecular Interactions: Effect of Alanine Substitution. *ChemPhysChem*. 2016, 17, 2897-2907.
- Masilamani, D.; Madhan, B.; Shanmugam, G.; Saravanan, P.; Narayan, B. Extraction of collagen from raw trimming wastes of tannery: a waste to wealth approach. *J Clean Prod.* 2016, 113, 338-344.
- Priya, G. K.; Mohammed Abu, J. M.; George, A.; Aarthi, M.; Durai, A. S.; Kamini, N. R.; Gowthaman, M. K.; Aravindhan, R.; Ganesh, S.; Chandrasekar, R.; Ayyadurai, N. Next generation greener leather dyeing process through recombinant green fluorescent protein *J Clean Prod.* 2016, 126, 698-706

- Lakshmi, S.S.; Geetha, K.; Gayathri, M.; Shanmugam, G. Synthesis, crystal structures, spectroscopic characterization and in vitro antidiabetic studies of new schiff base copper(II) complexes. *J Chem Sci.* 2016, 128, 1095-1102
- Jayamani, J.; Shanmugam, G*. Gelatin as a Potential Inhibitor of Insulin Amyloid Fibril Formation. *ChemistrySelect.* 2016, 1, 4463-4471
- Kakkar, P.; Madhan, B.; Shanmugam, G. Transient structures of Keratins from Hoof and Horn influence their self-association and supramolecular assemblies. *Int J Biol. Macromol.* 2016, 93, 172-178

2015

- Reddy, S. M. M.; Shanmugam, G.* Duraipondi, N.; Kiran, M. S.; Mandal, A. B. Additional Fluorenylmethoxycarbonyl (Fmoc) Moiety in di-Fmoc-functionalized L-Lysine induces ambidextrous gelation with significant advantages. *Soft Matter* 2015 11, 8126-8140.
- Reddy, S. M. M.; Shanmugam, G.* Mandal, A.B. Cross-linked Fibrous Spherulites from a Low Molecular Weight Compound, Fmoc-functionalized phenolic amino acid. *Soft Matter*, 2015, 11, 4154-4157.
- Perumal, S.; Ramadass, S. K.; Gopinath, A.; Madhan, B.; Shanmugam, G.; Rajadas, J.; Mandal, A. B. Altering the Concentration of Silica Tunes the Functional Properties of Collagen-Silica Composite Scaffolds to Suit Various Clinical Requirements. *J Mech Behav Biomed Mater.* 2015, 52, 131-138.
- Saravanan, M.; Jayamani, J.; Shanmugam, G.* Madhan, B. High concentration of propanol does not significantly alter the triple helical structure of Type I collagen. *Colloid & Poly. Sci.* 2015, 293, 2655-2662.
- Reddy, R.R.; Phani Kumar, B. V. N.; Shanmugam, G.; Madhan, B.; Mandal, A. B. , *J Phys Chem B* 2015, 119, 14076-14085.