

## 5.7 Research and Development

Table 5.7.1(a) Faculty Publications

| Academic Year       | CAY<br>(2022-2023) | CAY<br>(2021-2022) | CAYm1<br>(2020-2021) | CAYm2<br>(2019-2020) | CAYm3<br>(2018-2019) |
|---------------------|--------------------|--------------------|----------------------|----------------------|----------------------|
| No. of Publications | 9                  | 11                 | 10                   | 16                   | 4                    |

Table 5.7.1 b. Faculty Publications - SCOPUS/SCI/Others

| Academic Year | Total Publication | Total SCOPUS/SCI | Book Chapter | Total UGC | Others Total |
|---------------|-------------------|------------------|--------------|-----------|--------------|
| 2022 - 2023   | 9                 | 3                | 1            | -         | 5            |
| 2021 - 2022   | 11                | 1                | 3            | -         | 7            |
| 2020 - 2021   | 10                | 7                | 2            | -         | 1            |
| 2019 - 2020   | 16                | 5                | -            | -         | 11           |
| 2018 - 2019   | 4                 | 3                | -            | -         | 1            |

Table 5.7.1 Faculty Publications - Academic Year 2022-2023

| Sl. No | Name of Faculty   | Publication Details                                                                                                                                                                                                                                                                                | SCOPUS/SCI/UGC | DOI                                                                                                           | Year of Publication |
|--------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------|---------------------|
| 1      | Dr.Sija Arun      | Arun S, Xin L, Gaonkar O, Neppolian B, Zhang G, Chakraborty P. Antibiotics in sewage treatment plants, receiving waters and groundwater of Chennai city and the suburbs, South India: Occurrence, removal efficiencies, and risk assessment. Science of The Total Environment. 2022 Aug 20:158195. | SCI            | <a href="https://doi.org/10.1016/j.scitotenv.2022.158195">https://doi.org/10.1016/j.scitotenv.2022.158195</a> | 2022                |
| 2      | Dr. Daniel Paul T | Paul Thanaraj D, Kiran T, Kanagaraj B, Nammalvar A, Andrushia AD, Gurupatham BGA, Roy K. Influence of Heating-Cooling Regime on the Engineering Properties of Structural Concrete Subjected to Elevated Temperature. Buildings. 2023; 13(2):295.                                                   | SCI            | <a href="https://doi.org/10.3390/buildings13020295">https://doi.org/10.3390/buildings13020295</a>             | 2023                |
| 3      | Dr. Daniel Paul T | Anand, N., Thanaraj, D.P., Andrushia, D. et al. Microstructure investigation, strength assessment, and thermal modelling of concrete exposed to different heating cooling regimes. J Therm Anal Calorim 148, 3221–3247 (2023).                                                                     | SCI            | <a href="https://doi.org/10.1007/s10973-023-11998-5">https://doi.org/10.1007/s10973-023-11998-5</a>           | 2023                |
| 4      | Ms.Fazna Nazim    | Fazna Nazim and Renu Pawels, "Treatment of commercial kitchen wastewater using protease enzymes", Recent Advances in Civil Engineering, March 2023.                                                                                                                                                | Book Chapter   | Accepted                                                                                                      | 2023                |
| 5      | Ms.Fathima S T    | Binoy R and Fathima S Thaikudiyil, "Performance analysis of double-plate connected CFST Composite columns", International Research Journal of Modernization in Engineering Technology and Science, May 2023.                                                                                       | Others         | e-ISSN: 2582-5208                                                                                             | 2023                |
| 6      | Ms.Husaiba N.M    | Thansiya T K and Husaiba N.M, "Performance analysis of lipped channel with corrugation and web opening", International Research Journal of Modernization in Engineering Technology and Science, Volume:05/Issue: 05/May-2023.                                                                      | Others         | e-ISSN: 2582-5208                                                                                             | 2023                |
| 7      | Ms.Husaiba N.M    | Soja A S and Husaiba N.M, "Static and Dynamic investigation of plants inspired bio-mimick column structure", International Research Journal of Modernization in Engineering Technology and Science, Volume:05/Issue: 05/May-2023.                                                                  | Others         | e-ISSN: 2582-5208                                                                                             | 2023                |
| 8      | Ms.Lakshmy E.G    | Roshni Prasad and Lakshmy E.G, "The performance analysis of channel beams with web openings of different diameters", International Research Journal of Modernization in Engineering Technology and Science, Volume:05/Issue:05/May-2023.                                                           | Others         | e-ISSN: 2582-5208                                                                                             | 2023                |
| 9      | Ms.Lakshmi S Anil | Hiba Jabbar & Lakshmi S Anil, "Integration of combined CFS and CFRP as an internal shear and tension reinforcement in reinforced concrete beams", International Research Journal of Modernization in Engineering Technology and Science, Volume:05/Issue:05/May-2023                               | Others         | e-ISSN: 2582-5208                                                                                             | 2023                |

Table 5.7.1 c. Faculty Publications - Academic Year 2021-2022

| Sl. No | Name of Faculty   | Publication Details                                                                                                                                                                                                                                                                                       | SCOPUS/SCI/UGC | DOI                                                                                                     | Year of Publication |
|--------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------|---------------------|
| 1      | Dr.Sija Arun      | Giri S, Arun S. Comparative Statistical Analysis to Determine the Impact of COVID-19 Lockdown on PM 2.5 Concentration in Chennai City, India. Advances in Construction Management, Lecture Notes in Civil Engineering, 2022 (pp. 267-278). Springer, Singapore                                            | Book chapter   | <a href="https://doi.org/10.1007/978-981-16-5839-6_24">https://doi.org/10.1007/978-981-16-5839-6_24</a> | 2022                |
| 2      | Dr.Sija Arun      | Arun S, Anand U, Bhattacharjee P. Planning, Analysis, and Design of Smog-Free Tower with Louvers in Kolkata. advances in Construction Management, Lecture Notes in Civil Engineering 2022 (pp. 3-11). Springer, Singapore                                                                                 | Book chapter   | <a href="https://doi.org/10.1007/978-981-16-5839-6_1">https://doi.org/10.1007/978-981-16-5839-6_1</a>   | 2022                |
| 3      | Dr. Daniel Paul T | Diana, A.A., Anand, N., Walls, R., Daniel, P.T. and Arulraj, P., 2022. Automatic Detection of Surface Thermal Cracks in Structural Concrete with Numerical Correlation Analysis. In Leveraging Artificial Intelligence in Engineering, Management, and Safety of Infrastructure (pp. 120-139). CRC Press. | Book chapter   | ISBN: 9780367823467                                                                                     | 2022                |
| 4      | Dr. Daniel Paul T | Anand, N., Andrushia, D., Paul, D. and Arulraj, P., 2021. Condition assessment and analysis of a reinforced concrete building in India: a case study. Proceedings of the Institution of Civil Engineers-Forensic Engineering, 174(4), pp.89-104.                                                          | SCOPUS         | <a href="https://doi.org/10.1680/jfoen.20.00007">https://doi.org/10.1680/jfoen.20.00007</a>             | 2021                |
| 5      | Benoy Benjamin    | Seismic Optimisation of an I shaped Shear link damper in EBF and CBF systems, International Research Journal of Engineering and Technology, Vol. 09, Issue 06, June 2022, pp 1937-1940.                                                                                                                   | Others         | e-ISSN: 2395-0056                                                                                       | 2022                |

|   |                |                                                                                                                                                                                                                             |        |                                      |      |
|---|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------|------|
| 6 | Ms.Husaiba N.M | Seismic and progressive collapse mitigation of shear energy dissipation beam in dual braced moment frames, International Research Journal of Engineering and Technology, Volume: 09 Issue: 06   Jun 2022, p-ISSN: 2395-0072 | Others | e-ISSN: 2395-0056, p-ISSN: 2395-0072 | 2022 |
|---|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------|------|

**Table 5.7.1 d. Faculty Publications - Academic Year 2020-2021**

| Sl. No | Name of Faculty           | Publication Details                                                                                                                                                                                                                                                                                                                                | SCOPUS/SCI/UGC | DOI                                                                                                                                                       | Year of Publication |
|--------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1      | Dr.Chithra V S            | Shiva Nagendra S.M., Chithra V.S. (2021) Indoor Air Quality. In: Shiva Nagendra S.M., Schlink U., Müller A., Khare M. (eds) Urban Air Quality Monitoring, Modelling and Human Exposure Assessment. Springer Transactions in Civil and Environmental Engineering. Springer, Singapore.                                                              | Book Chapter   | <a href="https://content-e-bookshelf.de/media/reading/L-14461066-3fb190b94.pdf">https://content-e-bookshelf.de/media/reading/L-14461066-3fb190b94.pdf</a> | 2021                |
| 2      | Dr.Chithra V S            | Shiva Nagendra S.M., Schlink U., Müller A., Menon J.S., Chithra V.S. (2021) Personal Exposure and Health Risk Assessment. In: Shiva Nagendra S.M., Schlink U., Müller A., Khare M. (eds) Urban Air Quality Monitoring, Modelling and Human Exposure Assessment. Springer Transactions in Civil and Environmental Engineering. Springer, Singapore. | Book Chapter   | <a href="https://doi.org/https://doi.org/10.1007/978-981-15-5511-4_6">https://doi.org/https://doi.org/10.1007/978-981-15-5511-4_6</a>                     | 2021                |
| 3      | Dr. Biji Chinnamma Thomas | Biji Chinnamma Thomas, Shivashankar R., Sarah Jacob and Meera Susan Varghese (2020), "Erosion Studies on Lithomargic Clays", Indian Geotechnical Journal, Springer, 50, 142–156                                                                                                                                                                    | SCOPUS         | <a href="https://doi.org/10.1007/s40098-019-00364-8">https://doi.org/10.1007/s40098-019-00364-8</a>                                                       | 2020                |
| 4      | Dr. Biji Chinnamma Thomas | Shivashankar, R. and Thomas, Biji Chinnamma Thomas (2020) "Laterites And Lateritic Soils: Geology, Engineering Properties And Problems", Lowland Technology International Journal. 21(4, March), 205-214.                                                                                                                                          | SCOPUS         | <a href="https://cot.unhas.ac.id/journals/index.php/jalt_lti/article/view/719">https://cot.unhas.ac.id/journals/index.php/jalt_lti/article/view/719</a>   | 2020                |
| 5      | Dr.Sija Arun              | Sija Arun, R. Mohan Kumar, Jairaj Ruppa, Moitrayee Mukhopadhyay, K. Ilango, and Paromita Chakraborty. "Occurrence, sources and risk assessment of fluoroquinolones in dumpsite soil and sewage sludge from Chennai, India." Environmental Toxicology and Pharmacology 79 (2020): 103410                                                            | SCI            | DOI: 10.1016/j.etap.2020.103410                                                                                                                           | 2020                |
| 6      | Dr.Sija Arun              | Kumaravel, R., J. S. Sudarsan, Vemu Kumari Jyothirmal, and Sija Arun.(2020) "Water quality index estimation using fuzzy optimization technique." In AIP Conference Proceedings, vol. 2277, no. 1, p. 090013. AIP Publishing LLC.                                                                                                                   | SCOPUS         | <a href="https://doi.org/10.1063/5.0025405">https://doi.org/10.1063/5.0025405</a>                                                                         | 2020                |
| 7      | Dr.Sija Arun              | Jyothirmal, V. K., S. Mary Rebekah Sharmila, and Sija Arun.(2020) "Degradation Of Ciprofloxacin Using Fenton Process And Its Effect On Biodegradability." Rasayan Journal of Chemistry; Vol. 13, No. 4, 2274-2280.                                                                                                                                 | SCOPUS         | <a href="http://dx.doi.org/10.31788/RJC.2020.1346074">http://dx.doi.org/10.31788/RJC.2020.1346074</a>                                                     | 2020                |
| 8      | Dr. Daniel Paul T         | Thanaraj, D.P., Anand, N., Arulraj, P. and Al-Jabri, K., 2020. Investigation on structural and thermal performance of reinforced concrete beams exposed to standard fire. Journal of Building Engineering, 32, p.101764.                                                                                                                           | SCI            | <a href="https://doi.org/10.1016/j.jobbe.2020.101764">https://doi.org/10.1016/j.jobbe.2020.101764</a>                                                     | 2020                |
| 9      | Dr. Daniel Paul T         | Thanaraj, D.P., Anand, N. and Arulraj, P., 2020. Strength and microstructure characteristics of concrete with different grade exposed to standard fire. Journal of Structural Fire Engineering.                                                                                                                                                    | Scopus         | <a href="https://doi.org/10.1108/JSE-09-2018-0021">https://doi.org/10.1108/JSE-09-2018-0021</a>                                                           | 2020                |
| 10     | Benoy Benjamin            | Influence of Lateral Bracings in the Static Behaviour of Composite Box Girder Bridges, <i>International Research Journal of Engineering and Technology</i> , Vol 07, Issue 06, June 2020                                                                                                                                                           | Others         | e-ISSN: 2395-0056                                                                                                                                         | 2020                |

**Table 5.7.1 e. Faculty Publications - Academic Year 2019-2020**

| Sl. No | Name of Faculty           | Publication Details                                                                                                                                                                                                                                                                                          | SCOPUS/SCI/UGC | DOI                                                                                               | Year of Publication |
|--------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------|---------------------|
| 1      | Dr.Sija Arun              | Mary Rebekah Sharmila, Austin T. Sabu, Sija Arun; Experimental Study on the Stabilization of Soil using Eggshell Powder and Coir Fibres as a Sustainable Alternative ; Journal of Green Engineering (JGE) Volume-9, Issue-2, August 2019.                                                                    | SCOPUS         |                                                                                                   | 2019                |
| 2      | Dr. Biji Chinnamma Thomas | 1) Shivashankar R., Biji Chinnamma Thomas, Krishnanunni K.T., Reddy D.V. (2019) Slope Stability Studies of Excavated Slopes in Lateritic Formations. In: I.V. A., Maji V. (eds) Geotechnical Applications. Lecture Notes in Civil Engineering, vol 13. Springer, Singapore. doi:10.1007/978-981-13-0368-5_14 | SCOPUS         | doi:10.1007/978-981-13-0368-5_14                                                                  | 2019                |
| 3      | Dr.Sija Arun              | S Mary Rebekah Sharmila ,K Shankar Narayanan , Sija Arun; Experimental investigation of soil reinforced with human hair fibre and chloride compounds; Engineering Research Express; August 2019,                                                                                                             | SCI            | <a href="https://doi.org/10.1088/2631-8695/ab3166">https://doi.org/10.1088/2631-8695/ab3166</a>   | 2019                |
| 4      | Dr. Daniel Paul T         | Thanaraj, D.P., Anand, N.G.P.A., Prince Arulraj, G. and Zalok, E., 2020. Post-fire damage assessment and capacity based modeling of concrete exposed to elevated temperature. International Journal of Damage Mechanics, 29(5), pp.748-779.                                                                  | SCI            | <a href="https://doi.org/10.1177/1056789519881484">https://doi.org/10.1177/1056789519881484</a>   | 2019                |
| 5      | Dr. Daniel Paul T         | Thanaraj, D.P., Anand, N. and Arulraj, P., 2019. Experimental investigation of mechanical properties and physical characteristics of concrete under standard fire exposure. Journal of Engineering, Design and Technology.                                                                                   | Scopus         | <a href="https://doi.org/10.1108/JEDT-09-2018-0159">https://doi.org/10.1108/JEDT-09-2018-0159</a> | 2019                |
| 6      | Ms.Lakshmy E.G            | "Partial replacement of coarse aggregate with coconut shell and using pulp black liquor as admixture" , International Journal for Research in Applied Science and Engineering Technology, Vol 8, Issue V, May 2020.                                                                                          | Others         | ISSN NO. 2321-9653                                                                                | 2020                |
| 7      | Ms. Rajitha N             | "Use of Plant based Coagulants for Water treatment", International Journal of Advance Research and Innovative Ideas In Education (IJARIIE), Volume 6, Issue 3, May 2020, Pp 231-242                                                                                                                          | Others         | ISSN(O) NO. 2395-4396                                                                             | 2020                |
| 8      | Ms.Fazna Nazim            | "Treatment of synthetic greywater using corn cob", International journal of Creative Research and thoughts, Vol 8, Issue 5, May 2020                                                                                                                                                                         | Others         | ISSN 2320-2882                                                                                    | 2020                |

|    |                   |                                                                                                                                                                                                             |        |                                |      |
|----|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------|------|
| 9  | Ms.Fazna Nazim    | "Treatment of wastewater using woven and non woven coir geo textiles", International journal of Creative Research and thoughts,,Vol 8, Issue 5,May 2020.                                                    | Others | ISSN 2320-2882                 | 2020 |
| 10 | Ms. Aswathy K V   | "Use of Sea water in Concrete",International Journal of Creative Research Thoughts (IJCRT), Volume 8, Issue 5, May 2020                                                                                     | Others | ISSN 2320-2882                 | 2020 |
| 11 | Ms. Aswathy K V   | "Pedestrian Level of Service and Junction Improvement", International Journal of Creative Research Thoughts (IJCRT), Volume 8, Issue 5, May 2020                                                            | Others | ISSN 2320-2882                 | 2020 |
| 12 | Ms.Binciya Beeran | "Flex Reinforced Concrete", International Journal of Advance Research and Innovative Ideas In Education (IJARIIIE), Volume 6, Issue 2, May 2020                                                             | Others | ISSN 2320-6710                 | 2020 |
| 13 | Ms.Fathima S T    | "Study of Strength of 3D printable concrete by Partial Replacement of Quartz Powder by Steel Slag", International Journal for Research in Engineering Application and Management, Vol. 6, Issue 2, May 2020 | Others | <a href="#">ISSN 2454-9150</a> | 2020 |
| 14 | Ms.Husaiba N.M    | ' Experimental Study of Modified Self Cleaning Concrete using Silicon Dioxide ", International Journal of Innovative Research in Science, Engineering and Technology Volume 9, – Issue 5,May 2020           | Others | <a href="#">ISSN 2320-6710</a> | 2020 |
| 15 | Ms. Soni Syed     | "Carbon Upcycling :An Experimental Study", International Journal of Advance Research and Innovative Ideas In Education (IJARIIIE), Volume 6, Issue 3, May 2020                                              | Others | <a href="#">ISSN 2395-4396</a> | 2020 |
| 16 | Ms.Aysha Rasheed  | "FEM Modelling of Mitigation of Rain Triggered Landslide", International Journal for Research In Applied Science and Engineering Technology (IJRASET), Volume 8, Issue V, May 2020                          | Others | ISSN 2321-9653                 | 2020 |

**Table 5.7.1 f. Faculty Publications - Academic Year 2018-2019**

| Sl. No | Name of Faculty | Publication Details                                                                                                                                                                                                                                        | SCOPUS/SCI/UGC | DOI                                                                                                   | Year of Publication |
|--------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------|---------------------|
| 1      | Dr.Sija Arun    | J.S. Sudarsan, Rajitha J Rajan, Sija Arun , N.Balaji, Statistical Interpretation of The Experimental Output to Identify Better Performing Treatment Units of Constructed Wetland for Wastewater Treatment; AIP Conference Proceedings 2112, 020015 (2019); | SCOPUS         | <a href="https://doi.org/10.1063/1.5112200">https://doi.org/10.1063/1.5112200</a>                     | 2019                |
| 2      | Dr.Sija Arun    | Sija Arun and Payal Maharathi ,(June 2019) Characterisation of Biochar Obtained from Organic Material and Its Application for Removal of Ciprofloxacin; Oriental journal of chemistry; vol.35, No.3., pp.1086-1093.                                        | SCOPUS         | <a href="http://dx.doi.org/10.13005/ojc/350323">DOI : http://dx.doi.org/10.13005/ojc/350323</a>       | 2019                |
| 3      | Dr.Sija Arun    | Sija Arun, Krithiga.S,Paromita Chakraborty, Qualitative Evaluation of Antibiotics from Various Water Resources in and Around Perungudi Dumpsite, Chennai, Rasayan journal of Chemistry, Vol. 12, No. 2 , April - June 2019, pp.915 – 920.                  | SCOPUS         | <a href="http://dx.doi.org/10.31788/RJC.2019.1225161">http://dx.doi.org/10.31788/RJC.2019.1225161</a> | 2019                |
| 4      | Mithun Mohan    | "Bitumen Modification Using Crumb Rubber and Replacement of Fine Aggregates Using Coconut Shell Charcoal" Vol 4,Issue 5, March 2019                                                                                                                        | Others         | ISSN NO. 2456-0448                                                                                    | 2019                |