DOI: https://doi.org/10.46632/ces/1/1/2

Construction and Engineering Structures
Vol: 1(1), 2022
REST Publisher; ISBN: 978-81-956353-3-7
Website: http://restpublisher.com/book-series/ces/

Understanding Various Cement Compositions and Its Application

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Abstract. Cement is a binder used in construction to bond, harden and glue Together with other ingredients. Cement is rarely solitary Used, instead of sand and gravel Used to bind together. But cement is not a naturally occurring organic substance - it is made by the chemical composition of 8 key ingredients during the cement manufacturing process. These materials are generally extracted from limestone, clay, marl, shale, limestone, sand, bauxite and iron ore. Cement is, in general, an adhesive of all kinds, but, in a narrow sense, the Binding material used in This type of cement for building and civil engineering construction is a finely ground powder when mixed with water, forming a hard mass. Cement is made from closely controlled chemical composition of calcium, silicon, aluminum, iron and other raw required things. Used to make cement Lime in common materials Shells and lime or marl, shale, clay, slate, blast furnace sludge, silica Includes sand and iron ore.
Keywords: Cement production, Cement mortar, Portland cement, Cement asphalt mortar, Porous concrete.

1. Introduction

Cement preparation is a complex process involving grinding opium raw material, including mines and clay, which It is heated to a temperature of 1450 C in a cement kiln. To form a fine powder called raw food. There are four stages in Portland cement production: (1) crushing of raw materials, (2) mixing the materials in the correct proportions, (3) burning the prepared mixture Furnace and (4) grinding of combustible materials, known as "clinker", to control the time of about 5 percent gypsum (mortar). Used as a thick paste, it hardens during curing, forming a tight seal to prevent air and moisture from entering between the bricks and the blocks. , As well as masonry units and other precast products. C) Mass ratios. Asphalt based on cement based CA mortar or A / C ratio can be used instead of conventional concrete to reduce the amount of total flow out of a site, promoting and reducing the penetration of runoff into the ground. Helps reduce the amount and maximum flow velocity and volume of pollutants carried by storm drains or waterways

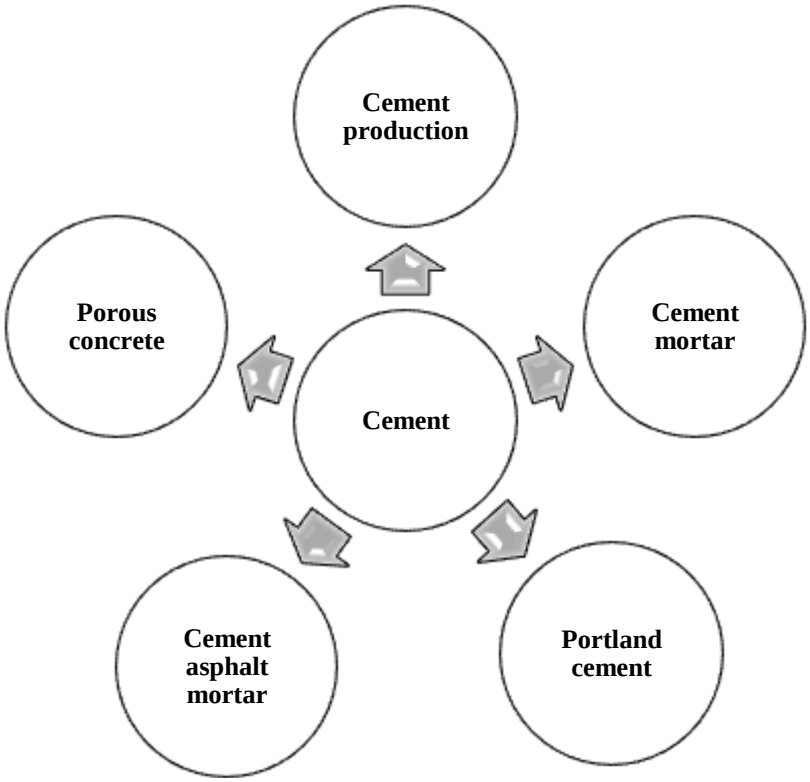

FIGURE 1. Cement

2. Cement Production

Cement production is related to gypsum. In addition to natural deposits, gypsum is a by-product of various industrial processes, e.g. Sulfurization plants from power generation. Typically, such synthetic gypsum contains traces of other materials that require adaptations in the manufacturing process. Again, OH&S and environmental requirements must be met in any individual case. [2]. Cement production ensures an inverse U-shaped relationship between individual GDP and cement production, although the factors that determine cement production vary from country to country. We argue that China's control of environmental impacts, uniqueness and vulnerabilities and the demand for excess cement. Very important. In particular, for large-scale cement production in China, we show a potential and significant reduction in CO2 emissions and local pollutants from this excess production. [3]. Cement production. Results are given between different five-year periods in calculating variations in the two parameters Their comparison with the variability of CO2 emissions over the same periods mainly shows that production evolution ultimately controls emissions. Technological advances did not allow for greater weight production variations during that period. These emissions can be compared to factor 4 perspectives [4]. Cement production is not feasible and, therefore, will not result in Actual net reduction in CO2 emissions. The overall impact score for cement production processes using carbon sorting in waste CKD is lower than the conventional process, the sorting only captures about 7% more carbon emissions than traditional Portland cement), and the pozzolanic cement sorting can provide a real reduction in net CO2 emissions. 7% higher carbon emissions than traditional Portland cement), and posolanic cement sorting can provide a real reduction in net CO2 emissions. [5]. Cement production. NSP cement production process is mainly raw mining and integration, cement production. Nisab Cement Manufacturing Process Manly raw material and integration, thermal insulation material includes front heater and calcareous.

3. Cement Mortar

In 28 days the cement mortar was reduced with an increase in the cement-sand ratio. W / c ratio and compressive strength and motor split tensile strength Cement-to-sand ratios on the influence of are provided by empirical equations. Exposure was performed to the optimum water content required to produce a working motor. As the cement content decreases more water is required for the motor to work. It is assumed that the law of Abrams also applies In the case of cement mortar with different parameters Predict stress Experiential equations have been developed and Cement mortar tensile strength for different cement-sand ratios based on w / c. Cement for masonry structures Motor combination These results will be helpful in designing [6].Amorphous or glass silica, the main The A component of pooling, silicates Calcium formed from hydration with calcium hydroxide Reacts. A poso posolanic reaction rate is proportional to the area the reaction. Therefore, nano-SiO2 was added with High purity (99.9%) and high air micro fluidic value is credible for improving the properties of cement motors [7]. Cement motors with diatomite were measured using 25 25 mm and 285 mm long cross-sectional specimens. The sulfate exposure testing process was carried out by immersion of the motor samples after specific initial healing by water bath with Sodium sulfate solution. After healing for 28 days in tap water, three samples 5% from each mixture For 8 weeks in sodium sulfate solution were drowned. Prepared by dissolving Regenerative Chemicals in tap water and test solutions that are renewed every two weeks. The test solution was maintained at 23 ± 2 C during the test period. The test solution was placed in plastic containers with gaps between the motor samples Test specimens were closed throughout the test period to reduce evaporation. The expansion of the motor models was measured as eight [8] each week. Cement mortar models are normal Made from Portland cement, this is the best package used for a motor models is river Quartzite sand. No. 4 before use The sand was passed through a sieve. In four water-cement ratios of, cement mortar was used. Related sand-cement Price of all cement motors Mix the mixture in a small frying pan. The performance ended in two layers compressed in a vibrating table. Cast iron sheets are Polyurethane Sheet and with a damp cloth Covered at room temperature of 20 ± 2 C and decomposed In 1 day. Strength and porosity for tests, Samples 20 saturated at 2C the condition was cured lime water for 7 to 28 days at the trial age [9]. [10] Subsequently, little research was VA / Viola in cement mortar Published on the use of powder, also this article is about VA / Verve powder in a cement mortar Evaluation and its properties Focuses on comparison with other polymer powders. Further disassembled modified motors were tested using the same method.

4. Portland Cement

Portland cements are usually added in small quantities as a set accelerator However, its Method of operation Not well understood C Ramachandran, T IA C, A reactions Accelerated when adding 0. I% or more but prolonged the Induction of silicates Period. Thus, excess tea Combinations can sometimes occur form a "flash set" In which the aluminates phase Get hydrated quickly Forming Cement Silicate at the same time The hydration of the phases lags and exhibits poor strength development after the cement is set. In these studies, phase C and A are generally considered to be the most reactive phase in the aluminate phase, which is generally considered to be the most susceptible phase to addition However TEA and other tertiary Alkanolamines Per rick Good soldering ability for nails Known to have. And aluminates and ferrite phase hydration by alkanola domain Acceleration. The whole question of the effect of these processes in the strength growth rate of Portland cements [11]. Portland cement extracted using DR-FTIR, SEM and Vicar Measurements The purpose of this study Fourier Transform Infrared Integrating Spectroscopy Is to add a part of the puzzle to the object. Transformation up to one minute fractions in the early stages of cement hydration. Should be mentioned and a method for monitoring material changes during initial hydration was proposed [13]. Comparative analysis I4 revealed that Portland cement was not originally used as a

retrograde material inwards and there was no significant difference between the various components that could be used for endodontic purpose [14].The Portland Cement Association or American Concrete Company is available for concrete mixes with normal mortar. If abnormal components such as polymer additives, fibers, iron scrap and other waste materials are present throughout the board, special arrangements will be required to design and manufacture them. Compounds.PCC Compounds assessing whether only the purpose of this study development of rubberized concrete composites and their basic engineering properties [15]. [16]Portland cement is very clear Does not have deviation peaks Mainly due to their semi-decomposition Besides, of hydrated and anhydrous compounds The peaks are unique to each other, and more following steps were performed in XRD forms of adhesives Hydration from Products to identify.

5. Cement Asphalt Mortar

Cement asphalt mortar Exposed to water Strength variations of CAM Strength variations of CAM at different water temperatures Vary and pressures. Also vary in microstructure. Evolution of Mercury Penetration Photometry and Electronic Scan Microscope Both temperature and pressure Cause decay of CAM The OP cam decreases with increasing water temperature and its extensive strength with water pressure Nationalizes by increasing [17].Extensive testing is carried out to study the high speed lines of the cement asphalt motor and to examine the contraction of the CA motor behavior as Temperature and loading rate change Temperature in mechanical properties and loading rate Integrated effects and the CA motor are analyzed for the pressure-strain relationship with the High elastic modulus Based on experimental observations Experiential equations of peak pressure and the corresponding axis strain of the CA motor Are obtained. Finally, the temperature and pressure- Integrated loading rate CA mortar under the effect CA Mortaring to describe abstract behavior [18].Cement asphalt mortar Of course, the estimated The results are tested in the literature The results are almost identical However, the predicted results are linear More with non-line [19]. [20]. Cement asphalt motor Is the slab pavement Used in the system A high-flow material. The CA motor should have an expansion rate of 1.0-3.0% after 24 hours, which guarantees the combining aluminum powder the article examines the CA motor size change under different AP conditions, temperature and asphalt / cement. The ratio, in the absence of AP, indicates shrinkage of 1.8–3.0% at 10–30C temperature and the volume expansion gradually decreases; Higher CA motor expansion rate, lower temperature and higher A / C.

6. Porous Concrete

Porous Concrete of its internal structure significantly affected by porosity. This article describes the abstract strength for micro-concrete by analyzing empirical conclusions and theoretical derivatives, and Between Porosity Mathematics for classifying relationships Describes the development of the model for microscopic concrete The relevance of the current equations was estimated Then a new model was proposed. New model derived from Griffith's theory Provides excellent agreement with test data for microscopic concrete. The proposed model has been demonstrated to be able to provide an excellent estimate of material porosity basically the compressive strength of micro-concrete the hole is the result of this study. On the other hand, porosity is considered to be the primary parameter of microscopic structures, as it is characterized by a number of parameters including pore structure, pore size, pore connection, pore surface hardness and pore size fraction. Therefore, porosity in this study was selected as an independent variable relative to material strength. The purpose of this study was to establish a correlation between the porosity and compressive strength of the microstructure [21]. Porous concrete. This does not require special vibration equipment and curing. Optimal mixing ratios were with high performance Microscopic Concrete Used in production with three-level coarse compounds, suitable Water-reduction and thickening agents. The tests performed on this concrete are as follows: slope, slope-flow, vacuum Penetration, compression and flexibility strength and the rate and coefficient of strength growth rate Also, of high performance porous concrete Excess water-reduction in self-contraction and an experiment was proposed to determine the effects of thickening. It is to evaluate its hardening properties in view of the practical application of micro-concrete. Commercially available SP and a thickening agent were used to produce porous concrete. SP low water-cement binder was added to make it work more, while [22]. The surface of microscopic concrete is indirectly examined by Dissolved of oxygen Consumption the water purification of microscopic concrete is estimated by removing the total phosphorus and total nitrogen. This is the pore large specification of concrete Surface is the cause. The results of this study show that the hole is concrete. Water can be efficiently purified using industrial by-products; micro-concretes have a wide specific surface area and are a surviving foil immersed in river water forms in internal continuous pores. Then, the strength characteristic of the microscopic concrete was estimated according to the particle size. Total and paste total ratio. [23]. Micro porous concrete Micro porous concrete requires microscopic concrete. This can be achieved by examining the change in theology due to the influence of the method and sequence of composition and contraction. The purpose of this study for the production of microscopic concretes to explore optimal conditions. The first part deals with the properties of the new paste and the second part deals with the shrinkage and vibration of the concrete. The hole is formed with a slightly lower vacuum in the upper part of the concrete, followed by the middle and lower parts, respectively. For concrete with an unsuitable vacuum ratio and paste flow, the obtained microscopic concrete has a low paste. And has too much vacuum as a result of too much paste and too little vacuum as a result of droplets during insufficient flow or vibration. [24]. the use of Recycled Aggregate for micro-concrete Normal bulk usage Was less than. However, due to the polymer change, the compressive strength of micro-concrete Micro porous concrete with relatively low water-cement ratio. Therefore, to increase the strength of micro-concrete using recycled aggregates, latex polymeric styrene is selected on the basis of butadiene rubber, reducing polymer powder and latex and incorporated into the concrete mix.

7. Conclusion

Industrial processes e.g. Sulfurization plants from power generation. Typically, such synthetic gypsum contains traces of other materials that require adaptations in the manufacturing process. Portland Cements, gypsum related cement production. In addition to natural deposits, gypsum is usually added as a set accelerator in small quantities as a result of multiple additions. However, the mechanism of its action is not well understood. When C Ramachandran, 0. I% or more was added, TEA accelerated the reactions of C, A, but extended the induction period of silicates. Thus, combinations of excess TEA can sometimes form a "flash set" in which the aluminates phase hydrates rapidly to form cement, while the hydration of the silicate phases reveals regression and poor strength development. The strength variations of CAM exposed to water vary at different water temperatures and pressures, and the porosity of the mercury penetration and the microstructure evolution of the scan electronic microscope whole concrete are significantly affected by the porosity of its internal structure. Abstract Strength for Micro-Concrete this article describes the development of a mathematical model by analyzing empirical results and theoretical derivations. The relevance of the current equations for micro-design was evaluated and then a new model was proposed. The new model, derived from Griffith's theory, offers a better deal with micro France experimental data

Reference

[1]. Schneider, Martin, Michael Romer, Markus Tschudin, and Hugo Bolio. "Sustainable cement production—present and future." Cement and concrete research 41, no. 7 (2011): 642-650.

[2]. Uwasu, Michinori, Keishiro Hara, and Helmut Yabar. "World cement production and environmental I mplications." Environmental Development 10 (2014): 36-47.

[3]. Sangeetha, S. Brilly, R. Sabitha, B. Dhiyanesh, G. Kiruthiga, N. Yuvaraj, and R. Arshath Raja. "Resource Management Framework Using Deep Neural Networks in Multi-Cloud Environment." In Operationalizing Multi-Cloud Environments, pp. 89-104. Springer, Cham, 2022.

[4]. Shuguang, Hu, Zhang Yunhua, and Wang Fazhou. "Effect of temperature and pressure on the degradation of cement asphalt mortar exposed to water." Construction and Building Materials 34 (2012): 570-574.

[5]. Malik, Ayasha, Siddharth Gautam, Shafiqul Abidin, and Bharat Bhushan. "Blockchain technology-future of IoT: including structure, limitations and various possible attacks." In 2019 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT), vol. 1, pp. 1100-1104. IEEE, 2019.

[6]. Bhutta, M. Aamer Rafique, K. Tsuruta, and J. Mirza. "Evaluation of high-performance porous concrete properties." Construction and Building Materials 31 (2012): 67-73.

[7]. Geetha, D., V. Kavitha, G. Manikandan, and D. Karunkuzhali. "Enhancement and Development of Next Generation Data Mining Photolithographic Mechanism." In Journal of Physics: Conference Series, vol. 1964, no. 4, p. 042092. IOP Publishing, 2021.

[8]. Lian, Chunqi, Y. Zhuge, and S. Beecham. "The relationship between porosity and strength for porous concrete." Construction and Building Materials 25, no. 11 (2011): 4294-4298.

[9]. Ahilan, A., Gunasekaran Manogaran, Chandrasekaran Raja, Seifedine Kadry, Subbiahpillai Neelakantapillai Kumar, C. Agees Kumar, T. Jarin et al. "Segmentation by fractional order darwinian particle swarm optimization based multilevel thresholding and improved lossless prediction based compression algorithm for medical images." Ieee Access 7 (2019): 89570-89580.

[10]. Habert, Guillaume, Catherine Billard, Pierre Rossi, Cong Chen, and Nicolas Roussel. "Cement production technology improvement compared to factor 4 objectives." Cement and Concrete Research 40, no. 5 (2010): 820-826.

[11]. Sasibhushana Rao, G., G. Vimala Kumari, and B. Prabhakara Rao. "Image compression using neural network for biomedical applications." In Soft computing for problem solving, pp. 107-119. Springer, Singapore, 2019.

[12]. Kumari, G. Vimala, G. Sasibhushana Rao, and B. Prabhakara Rao. "Flower pollination-based K-means algorithm for medical image compression." International Journal of Advanced Intelligence Paradigms 18, no. 2 (2021): 171-192.

[13]. Chindaprasirt, P., Shigemitsu Hatanaka, Thanudkij Chareerat, N. Mishima, and Yukihisa Yuasa. "Cement paste characteristics and porous concrete properties." Construction and Building materials 22, no. 5 (2008): 894-901.

[14]. Alessa, Nazek, K. Tamilvanan, K. Loganathan, T. S. Karthik, and John Michael Rassias. "Orthogonal stability and nonstability of a generalized quartic functional equation in quasi--normed spaces." Journal of Function Spaces 2021 (2021).

[15]. Mukherjee, Subhodeep, and Venkataiah Chittipaka. "Analysing the adoption of intelligent agent technology in food supply chain management: an empirical evidence." FIIB Business Review (2021): 23197145211059243.

[16]. Huntzinger, Deborah N., and Thomas D. Eatmon. "A life-cycle assessment of Portland cement manufacturing: comparing the traditional process with alternative technologies." Journal of cleaner production 17, no. 7 (2009): 668-675.

[17]. Kiruthiga, G., and M. Mohanapriya. "An adaptive signal strength based localization approach for wireless sensor networks." Cluster Computing 22, no. 5 (2019): 10439-10448.

[18]. Bhoopathy, V., Aradhana Behura, V. Lokeswara Reddy, Shafiqul Abidin, D. Vijendra Babu, and Anitha Juliette Albert. "WITHDRAWN: IOT-HARPSECA: A SECURE DESIGN AND DEVELOPMENT SYSTEM OF ROADMAP FOR DEVICES AND TECHNOLOGIES IN IOT SPACE." (2021): 104044.

[19]. Suhasini, S., J. M. SheelaLavanya, M. Parameswari, G. Manikandan, and S. Gracia Nissi. "Input Based Resource Allocation in Motion Estimation using Re-configurable Architecture." In 2021 Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC), pp. 1091-1095. IEEE, 2021.

[20]. Appathurai, Ahilan, J. Jerusalin Carol, C. Raja, S. N. Kumar, Ashy V. Daniel, A. Jasmine Gnana Malar, A. Lenin Fred, and Sujatha Krishnamoorthy. "A study on ECG signal characterization and practical implementation of some ECG characterization techniques." Measurement 147 (2019): 106384.

[21]. Wang, Huarong, Jinliang Xu, Xufei Yang, Zheng Miao, and Chao Yu. "Organic Rankine cycle saves energy and reduces gas emissions for cement production." Energy 86 (2015): 59-73.

[22]. Vikrant Sharma; M. Ramachandran; Sathiyaraj Chinnasamy; Vimala Saravanan, " A Review on Structural Equation Modeling and Its Classification" REST Journal on Emerging trends in Modelling and Manufacturing, 7(4), (2022): 135-142

[23]. Geethamani, R., T. S. Karthik, M. Deivakani, Vishal Jain, Anand Mohan, Meenu Chopra, Cosmena Mahapatra, and T. C. Manjunath. "Implementation of wireless home-based automation and safety arrangement using power electronic switches." Materials Today: Proceedings (2021).

[24]. Mukherjee, Subhodeep, Manish Mohan Baral, Venkataiah Chittipaka, Sharad Chandra Srivastava, and Surya Kant Pal. "Discussing the Impact of Industry 4.0 in Agriculture Supply Chain." In Recent Advances in Smart Manufacturing and Materials, pp. 301-307. Springer, Singapore, 2021.

[25]. Abidin, Shafiqul. "Greedy Approach for Optimizing 0-1 Knapsack Problem." Communications 7 (2017): 1-3.

[26]. Bhuvaneswari, G., and G. Manikandan. "A novel machine learning framework for diagnosing the type 2 diabetics using temporal fuzzy ant miner decision tree classifier with temporal weighted genetic algorithm." Computing 100, no. 8 (2018): 759-772.

[27]. Singh, S. B., Pankaj Munjal, and Nikesh Thammishetti. "Role of water/cement ratio on strength development of cement mortar." Journal of Building Engineering 4 (2015): 94-100.

[28]. Raja, C., and N. Gangatharan. "Optimal hyper analytic wavelet transform for glaucoma detection in fundal retinal images." Journal of Electrical Engineering and Technology 10, no. 4 (2015): 1899-1909.

[29]. Rao, P. Srinivasa, and S. Satyanarayana. "Privacy preserving data publishing based on sensitivity in context of Big Data using Hive." Journal of Big Data 5, no. 1 (2018): 1-20.

[30]. Sathiyaraj Chinnasamy, M. Ramachandran, Kurinjimalar Ramu, P. Anusuya "Study on Fuzzy ELECTRE Method with Various Methodologies" REST Journal on Emerging trends in Modelling and Manufacturing, 7(4), (2022):108-115.

[31]. Chitra, P., T. S. Karthik, S. Nithya, J. Jacinth Poornima, J. Srinivas Rao, Makarand Upadhyaya, K. Jayaram Kumar, R. Geethamani, and T. C. Manjunath. "Sentiment analysis of product feedback using natural language processing." Materials Today: Proceedings (2021).

[32]. Mukherjee, Subhodeep, Venkataiah Chittipaka, and Manish Mohan Baral. "Developing a Model to Highlight the Relation of Digital Trust With Privacy and Security for the Blockchain Technology." In Blockchain Technology and Applications for Digital Marketing, pp. 110-125. IGI Global, 2021.

[33]. Jo, Byung-Wan, Chang-Hyun Kim, Ghi-ho Tae, and Jong-Bin Park. "Characteristics of cement mortar with nano-SiO2 particles." Construction and building materials 21, no. 6 (2007): 1351-1355.

[34]. Kumari, G. Vimala, G. Sasibhushana Rao, and B. Prabhakara Rao. "New Artificial Neural Network Models for Bio Medical Image Compression: Bio Medical Image Compression." International Journal of Applied Metaheuristic Computing (IJAMC) 10, no. 4 (2019): 91-111.

[35]. Sasibhushana Rao, G., G. Vimala Kumari, and B. Prabhakara Rao. "New random noise denoising method for biomedical image processing applications." In International Conference on ISMAC in Computational Vision and Bio-Engineering, pp. 355-365. Springer, Cham, 2018.

[36]. Abidin, Shafiqul, Vikas Rao Vadi, and Ankur Rana. "On Confidentiality, Integrity, Authenticity, and Freshness (CIAF) in WSN." In Advances in Computer, Communication and Computational Sciences, pp. 87-97. Springer, Singapore, 2021.

[37]. Degirmenci, Nurhayat, and Arin Yilmaz. "Use of diatomite as partial replacement for Portland cement in cement mortars." Construction and Building Materials 23, no. 1 (2009): 284-288.

[38]. Soniya Sriram, M. Ramachandran, Sathiyaraj Chinnasamy, G. Mathivanan "A Review on Multi-Criteria Decision-Making and Its Application", REST Journal on Emerging trends in Modelling and Manufacturing, 7(4), (2022):101-107.

[39]. Sathish, E., G. Manikandan, and G. Bhuvaneswari. "Design and development of multi controlled smart bike." Materials Today: Proceedings (2021).

[40]. Raja, Chandrasekaran, and Narayanan Gangatharan. "A hybrid swarm algorithm for optimizing glaucoma diagnosis." Computers in biology and medicine 63 (2015): 196-207.

[41]. Bhutta, Muhammad Aamer Rafique, Nor Hasanah, Nur Farhayu, Mohd Warid Hussin, Mahmood bin Md Tahir, and J. Mirza. "Properties of porous concrete from waste crushed concrete (recycled aggregate)." Construction and building materials 47 (2013): 1243-1248.

[42]. Prakash, B., S. Jayashri, and T. S. Karthik. "A hybrid genetic artificial neural network (G-ANN) algorithm for optimization of energy component in a wireless mesh network toward green computing." Soft Computing 23, no. 8 (2019): 2789-2798.

[43]. Loganathan, K., Nazek Alessa, Ngawang Namgyel, and T. S. Karthik. "MHD flow of thermally radiative Maxwell fluid past a heated stretching sheet with Cattaneo–Christov dual diffusion." Journal of Mathematics 2021 (2021).
[44]. Degirmenci, Nurhayat, and Arin Yilmaz. "Use of diatomite as partial replacement for Portland cement in cement mortars." Construction and Building Materials 23, no. 1 (2009): 284-288.
[45]. Manikandan, G., and S. Srinivasan. "An efficient algorithm for mining spatially co-located moving objects." American Journal of Applied Sciences 10, no. 3 (2013): 195-208.
[46]. Raja, Chandrasekaran, and Narayanan Gangatharan. "Appropriate sub-band selection in wavelet packet decomposition for automated glaucoma diagnoses." International Journal of Automation and computing 12, no. 4 (2015): 393-401.
[47]. Gadde Mehar Chaitanya, M.P.Jenarthanan, C. Sathiyaraj, "A Review on Glass fibre Reinforced Composites with Different Matrix", REST Journal on Emerging trends in Modelling and Manufacturing, 7(1), (2021):18-24.
[48]. Wang, Fazhou, Zhichao Liu, and Shuguang Hu. "Early age volume change of cement asphalt mortar in the presence of aluminum powder." Materials and structures 43, no. 4 (2010): 493-498.
[49]. Rao, P. Srinivasa, K. Thammi Reddy, and MHM Krishna Prasad. "A novel and efficient method for protecting internet usage from unauthorized access using map reduce." International Journal of Information Technology and Computer Science 3 (2013): 49-55.
[50]. Wang, Ru, and Pei-Ming Wang. "Action of redispersible vinyl acetate and versatate copolymer powder in cement mortar." Construction and Building Materials 25, no. 11 (2011): 4210-4214.
[51]. Kumari, G. Vimala, G. Sasibhushana Rao, and B. Prabhakara Rao. "New bacteria foraging and particle swarm hybrid algorithm for medical image compression." Image Analysis & Stereology 37, no. 3 (2018): 249-275.
[52]. Mukherjee, Subhodeep, Venkataiah Chittipaka, Manish Mohan Baral, Sharad Chandra Srivastava, and Bhaswati Jana. "Analyzing the problems faced by fashion retail stores due to Covid-19 outbreak." Parikalpana: KIIT Journal of Management 17, no. 1 (2021): 206-217.
[53]. Gartner, Ellis, and David Myers. "Influence of tertiary alkanolamines on Portland cement hydration." Journal of the American Ceramic Society 76, no. 6 (1993): 1521-1530.
[54]. Abidin, Shafiqul. "Enhancing security in WSN by artificial intelligence." In International Conference on Intelligent Data Communication Technologies and Internet of Things, pp. 814-821. Springer, Cham, 2018.
[55]. Bhuvaneswari, G., and G. Manikandan. "An intelligent intrusion detection system for secure wireless communication using IPSO and negative selection classifier." Cluster Computing 22, no. 5 (2019): 12429-12441.
[56]. Rao, P. Srinivasa, K. Thammi Reddy, and MHM Krishna Prasad. "A novel approach for identification of hadoop cloud temporal patterns using map reduce." Published In IJITCS (MECS) Vol 6 (2014): 37-42.
[57]. Ylmén, Rikard, Ulf Jäglid, Britt-Marie Steenari, and Itai Panas. "Early hydration and setting of Portland cement monitored by IR, SEM and Vicat techniques." Cement and Concrete Research 39, no. 5 (2009): 433-439.
[58]. Mukherjee, Subhodeep, Venkataiah Chittipaka, Manish Mohan Baral, and Sharad Chandra Srivastava. "Integrating the Challenges of Cloud Computing in Supply Chain Management." In Recent Advances in Industrial Production, pp. 355-363. Springer, Singapore, 2022.
[59]. Park, Sung-Bum, and Mang Tia. "An experimental study on the water-purification properties of porous concrete." Cement and concrete research 34, no. 2 (2004): 177-184.
[60]. Rao, P. Srinivasa, MHM Krishna Prasad, and K. Thammi Reddy. "An efficient semantic ranked keyword search of big data using map reduce." International Journal of Database Theory and Application 8, no. 6 (2015): 47-56.
[61]. Pal, Surya Kant, Manish Mohan Baral, Subhodeep Mukherjee, Chittipaka Venkataiah, and Bhaswati Jana. "Analyzing the impact of supply chain innovation as a mediator for healthcare firms' performance." Materials Today: Proceedings 56 (2022): 2880-2887.
[62]. Funteas, Urania R., J. A. Wallace, and F. W. Fochtman. "A comparative analysis of mineral trioxide aggregate and Portland cement." Australian Endodontic Journal 29, no. 1 (2003): 43-44.
[63]. Manikandan, G., and S. Srinivasan. "Traffic control by bluetooth enabled mobile phone." International Journal of Computer and Communication Engineering 1, no. 1 (2012): 66.
[64]. Mukherjee, Subhodeep, Venkataiah Chittipaka, and Manish Mohan Baral. "Addressing and Modeling the Challenges Faced in the Implementation of Blockchain Technology in the Food and Agriculture Supply Chain: A Study Using TOE Framework." In Blockchain Technologies and Applications for Digital Governance, pp. 151-179. IGI Global, 2022.
[65]. Khatib, Zaher K., and Fouad M. Bayomy. "Rubberized Portland cement concrete." Journal of materials in civil engineering 11, no. 3 (1999): 206-213.
[66]. Kakali, G., S. Tsivilis, E. Aggeli, and M. Bati. "Hydration products of C3A, C3S and Portland cement in the presence of CaCO3." Cement and concrete Research 30, no. 7 (2000): 1073-1077.
[67]. Wang, Jin-feng, Xi Wu, Xing-lang Fan, and Yi-ri Chen. "Stress–strain model of cement asphalt mortar subjected to temperature and loading rate." Construction and Building Materials 111 (2016): 164-174.
[68]. Qiu, Kechao, Huisu Chen, Haiping Ye, Jinxiang Hong, Wei Sun, and Jinyang Jiang. "Thermo-mechanical coupling effect on fatigue behavior of cement asphalt mortar." International journal of fatigue 51 (2013): 116-120.

