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पेटेंट कार्यालय का एक प्रकाशन
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(54) Title of the invention : ENHANCED CONCRETE COMPOSITES WITH OPTIMIZED RECYCLED CONCRETE AGGREGATE FOR IMPROVED MECHANICAL PROPERTIES USING A LINEAR REGRESSION MODEL

(51) International classification :C04B0028020000, C04B0111000000, C04B0020100000, C04B0014480000, C04B0028000000 (86) International Application No :NA Filing Date :NA (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)Name of Applicant : 1)Chethan Kumar N T Address of Applicant :Chethan Kumar N T Assistant Professor Department of Civil Engineering Malnad college of engineering Hassan 573202 ----- 2)Bhavya S 3)Ruchira S N 4)Pallavi H J 5)Karthik M 6)Amrutha D S 7)Supriya M J 8)Indumathi C 9)Brunda B N 10)Ravikumar B S Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Chethan Kumar N T Address of Applicant :Assistant Professor Department of Civil Engineering Malnad College of Engineering, Hassan – 573 202 Hassan ----- 2)Bhavya S Address of Applicant :Assistant Professor Department of Civil Engineering SJC Institute of Technology Chikkaballapur – 562101 Chikkaballapur ----- 3)Ruchira S N Address of Applicant :M.Tech Research Scholar D/o H K Nagesh, #21, Bhagath Singh Road, Jayanagar 2nd Stage, Hassan – 573202 Hassan ----- 4)Pallavi H J Address of Applicant :Assistant Professor Department of Civil Engineering Global Academy of Technology Bangalore – 560098 Bangalore ----- 5)Karthik M Address of Applicant :Assistant Professor Department of Civil Engineering Dayanand Sagar College of Engineering Bangalore – 560 111 Bangalore ----- 6)Amrutha D S Address of Applicant :Assistant Professor Department of Civil Engineering Malnad College of Engineering, Hassan – 573 202 Hassan ----- 7)Supriya M J Address of Applicant :Assistant Professor Department of Civil Engineering Malnad College of Engineering, Hassan – 573 202 Hassan ----- 8)Indumathi C Address of Applicant :Assistant Professor Department of Civil Engineering Malnad College of Engineering, Hassan – 573 202 Hassan ----- 9)Brunda B N Address of Applicant :Assistant Professor Department of Civil Engineering Malnad College of Engineering, Hassan – 573 202 Hassan ----- 10)Ravikumar B S Address of Applicant :Assistant Professor Department of Civil Engineering Mysuru Royal Institute of Technology Mandya – 571606 Mandya -----
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(57) Abstract :
This invention introduces an innovative approach to reinforcing cement concrete with recycled concrete aggregates, aimed at enhancing its mechanical properties for broader application in construction. By optimizing recycled concrete aggregates within the concrete matrix, the invention achieves significant improvements in compressive strength, contributing to more durable, sustainable, and economically viable construction materials. This invention introduces a cement concrete composite material incorporating strategically oriented recycled concrete aggregates as coarse aggregates to enhance mechanical properties significantly. Through rigorous testing, it was demonstrated that cement concrete reinforced with recycled concrete aggregates achieved a 12 % increase in compressive strength at 28 days of curing, reaching 36.9 N/mm², compared to 33.5 N/mm² for conventional concrete. These empirical enhancements, underpinned by detailed graphical analyses, establish this invention's potential to revolutionize concrete reinforcement with a focus on sustainability, durability, and mechanical performance.