International Conference on Civil Engineering and Infrastructural Issues in Emerging Economics (ICCIEE 2017)

IOP Conference Series: Earth and Environmental Science Volume 80

Thanjavur, India 17 – 18 March 2017

ISBN: 978-1-5108-4718-7 ISSN: 1755-1307 Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics All rights reserved. The material featured in this book is subject to IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2633 Email: curran@proceedings.com Web: www.proceedings.com

Table of contents

Volume 80

International Conference on Civil Engineering and Infrastructural Issues in Emerging Economies (ICCIEE 2017)

17-18 March 2017, Tirumalaisamudram, Thanjavur, India

Accepted papers received: 20 July 2017 Published online: 9 August 2017

Preface

011001 OPEN ACCESS International Conference on Civil Engineering and Infrastructural Issues in Emerging Economies (ICCIEE 2017)

011002 OPEN ACCESS International Conference on Civil Engineering and Infrastructural Issues in Emerging Economies (ICCIEE 2017)

011003 OPEN ACCESS International Conference on Civil Engineering and Infrastructural Issues in Emerging Economies (ICCIEE 2017)

011004 OPEN ACCESS International Conference on Civil Engineering and Infrastructural Issues in Emerging Economies (ICCIEE 2017)

011005 OPEN ACCESS Peer review statement

Papers

012001 OPEN ACCESS Bond characteristics of reinforcing steel embedded in geopolymer concrete

Parthiban Kathirvel, Manju Thangavelu, Rashmi Gopalan and Saravana Raja Mohan Kaliyaperumal....1

012002 OPEN ACCESS Study on compressive strength of self compacting mortar cubes under normal & electric oven curing methods

G J Prasanna Venkatesh, S S Vivek and G Dhinakaran.....8

012003 OPEN ACCESS Strength characteristics of light weight concrete blocks using mineral admixtures

P Bhuvaneshwari, U Priyadharshini, S Gurucharan and B Mithunram....17

012004 OPEN ACCESS Influence of Glass Fiber on Fresh and Hardened Properties of Self Compacting Concrete

R Bharathi Murugan, M K Haridharan, C Natarajan and R Jayasankar.....26

012005 OPEN ACCESS <u>Characteristics of Cement Concrete with Nano Alumina Particles</u>

P Jaishankar and C Karthikeyan.....34

012006 OPEN ACCESS Study of Bond Characteristics of Reinforced Waste Glass Aggregate Concrete

P Rajagopalan, V Balaji, N Unnikrishnan, T Jainul Haq and P Bhuvaneshwari.....44

012007 OPEN ACCESS Utilisation of Waste Marble Dust as Fine Aggregate in Concrete

G V Vigneshpandian, E Aparna Shruthi, C Venkatasubramanian and D Muthu.....51

012008 OPEN ACCESS Experimental and Theoretical Investigations on Bond Strength of GFRP Rebars in Normal and High Strength Concrete

P Eswanth and G Dhinakaran.....57

012009 OPEN ACCESS Impact of Micro Silca on the mechanical properties of high volume Fly Ash Concrete

R Sripagadeesh, K Ramakrishnan, G Pugazhmani, S Ramasundram, D Muthu and C Venkatasubramanian.....63

012010 OPEN ACCESS Study on the strength characteristics of High strength concrete with Micro steel fibers

K Gowdham, A Sumathi and K Saravana Raja Mohan.....71

012011 OPEN ACCESS Effect of Molarity of Sodium Hydroxide and Curing Method on the Compressive Strength of Ternary Blend Geopolymer Concrete

V Sathish Kumar, N Ganesan and P V Indira.....77

012012 OPEN ACCESS Experimental studies on effect of cow dung ash (pozzolanic binder) and coconut fiber on strengthproperties of concrete

C Venkatasubramanian, D Muthu, G Aswini, G Nandhini and K Muhilini.....83

012013

OPEN ACCESS

Optimization and influence of parameter affecting the compressive strength of geopolymer concrete containing recycled concrete aggregate: using full factorial design approach

Thulasirajan Krishnan and Revathi Purushothaman.....89

012014 OPEN ACCESS Influence of Waste Tyre Crumb Rubber on Compressive Strength, Static Modulus of Elasticity and Flexural Strength of Concrete

M K Haridharan, R Bharathi Murugan, C Natarajan and M Muthukannan.....97

012015 OPEN ACCESS Experimental studies on effect of Date Seed Ash (DSA) on strength properties of cement sand mortar

G I Gunarani and S P Chakkravarthy.....103

012016 OPEN ACCESS Study on Mechanical Properties of Concrete Using Plastic Waste as an Aggregate

B Jaivignesh and A Sofi.....111

012017 OPEN ACCESS <u>Papercrete brick as an alternate building material to control Environmental Pollution</u>

J S Sudarsan, S Ramesh, M Jothilingam, Vishalatchi Ramasamy and Rajitha J Rajan.....117

012018 OPEN ACCESS Strength and durability studies on concrete with partial replacement over burnt brick bat waste

S Kanchidurai, G Bharani and K Saravana Raja Mohan.....125

012019 OPEN ACCESS An Experimental Evaluation of Mechanical Properties of Hybrid Reinforcements

A Sai Kumar, G Ganesan and K Karthikeyan....134

012020 OPEN ACCESS Properties of concrete modified with waste Low Density Polyethylene and saw dust ash

P Srimanikandan and S Sreenath.....141

012021 OPEN ACCESS Experimental study on the strength parameter of Quarry Dust mixed Coconut Shell Concrete adding Coconut Fibre

Victor Matangulu Shrestha, S Anandh and S Sindhu Nachiar....150

012022 OPEN ACCESS Study on Strength and Durability Characteristics of Concrete with Ternary Blend

C Nissi Joy, K Ramakrishnan, M Snega, S Ramasundram, C Venkatasubramanian and D Muthu....157

012023 OPEN ACCESS Analysis of Flexural Fatigue Strength of Self Compacting Fibre Reinforced Concrete Beams

G Murali, J P Arul Sudar Celestina, N Subhashini and M Vigneshwari.....169

012024 OPEN ACCESS Failure analysis of lattice tower like structures

Raghavan Ramalingam.....174

012025 OPEN ACCESS Behaviour of wrapped cold-formed steel columns under different loading conditions

B Hari Baabu and S Sreenath.....182

012026 OPEN ACCESS Study on Flexural Behaviour of Ternary Blended Reinforced Self Compacting Concrete Beam with Conventional RCC Beam

M Marshaline Seles, R Suryanarayanan, S S Vivek and G Dhinakaran.....189

012027 OPEN ACCESS Experimental Study On Flexural Behaviour Of Beams Reinforced With GFRP Rebars

G Naveen Kumar and Karthik Sundaravadivelu.....198

012028 OPEN ACCESS Behaviour of Nano Silica in Tension Zone of High Performance Concrete Beams

P Jaishankar and D Vivek.....209

012029 OPEN ACCESS Experimental investigations on steel-concrete composite columns for varying parameters

V Aparna, D Vivek, Kancharla Neelima and B Karthikeyan.....216

012030 OPEN ACCESS Behaviour of axially and eccentrically loaded short columns reinforced with GFRP bars

S Sreenath, S Balaji and K Saravana Raja Mohan.....225

012031 OPEN ACCESS Experimental Study on Voided Reinforced Concrete Beams with Polythene Balls

P Sivaneshan and S Harishankar.....235

012032

OPEN ACCESS

Experimental investigation on different patterned bolted/welded structural connection in steel and GFRP plates

S Kanchidurai and P Vivek.....243

012033 OPEN ACCESS A review of inducing compressive residual stress – shot peening; on structural metal and welded connection

S Kanchidurai, P A Krishanan, K Baskar and K Saravana Raja Mohan.....250

012034 OPEN ACCESS Study and Behaviour of Prefabricated Composite Cladding

P Sai Avinash, N Thiagarajan and A S Santhi.....261

012035 OPEN ACCESS <u>Ultimate Strength of Ferro-Geopolymer Composite Built-Up I Joist</u>

K T Vipin, N Ganesan and P V Indira.....267

012036 OPEN ACCESS Effects of slag on flexural strength of slurry infiltrated fibrous concrete

D Elavarasi, K Saravana Raja Mohan, P Parthasarathy and T Dinesh.....274

012037 OPEN ACCESS <u>A Study on Hybrid Precast walls</u>

S Rohith, C R Chidambaram, K Karthikeyan and M Helen Santhi.....283

012038 OPEN ACCESS Retrofitting of Reinforced Concrete Beams using Reactive Powder Concrete (RPC)

S Karthik and Karthik Sundaravadivelu.....289

012040 OPEN ACCESS Strengthening of beam - column joint with steel fibre reinforced concrete under seismic loading

K Prasanna, R Ramasubramani, K S Anandh, Saisabarish and Vijay Krupaker Maddu.....298

012041 OPEN ACCESS Bamboo as a substitute for steel in reinforced concrete wall panels

P R Himasree, N Ganesan and P V Indira.....309

012042 OPEN ACCESS Numerical investigation into thermal load responses of steel railway bridge

K Saravana Raja Mohan, J R Sreemathy and U Saravanan.....317

012043 OPEN ACCESS Flexural behaviour of RCC beams with externally bonded FRP

S Arun Vignesh, A Sumathi and K Saravana Raja Mohan.....333

012044 OPEN ACCESS Ranking the Project Management Success Factors for Construction Project in South India

K Aneesha and M K Haridharan.....347

012045 OPEN ACCESS Examining the Challenging Hindrances facing in the Construction Projects: South India's Perspective

K Subramanyam and M K Haridharan.....358

012046 OPEN ACCESS Improving Thermal Performance of a Residential Building, Related to Its Orientations -A Case Study

S Akshaya, S Harish, R Arthy, D Muthu and C Venkatasubramanian.....368

012047 OPEN ACCESS Perception of Construction Participants in Construction delays: A case study in Tamilnadu, India.

V Rathinakumar, T Vignesh and K Dhivagar.....374

012048 OPEN ACCESS Cost benefit analysis on different configurations of berthing structure

G Rajesh, R Saravanan, Vijaya Ravichandran, S Parameswara Pandian and Evangelin Ramani Sujatha.....384

012049 OPEN ACCESS <u>A computer based approach for Material, Manpower and Equipment managementin the</u> <u>Construction Projects</u>

Jaladanki Sasidhar, D Muthu, C Venkatasubramanian and K Ramakrishnan.....392

012050 OPEN ACCESS Implementation and implication of total quality management on client- contractor relationship in residential projects

Swetha Murali and V Ponmalar.....402

012051 OPEN ACCESS Biodegradation of paper waste using Eisenia foetida by vermicomposting Technology

Mahalakshmi Mathivanan, G Aravind Vishnu Saravanan, Aravindh Baji and J Manoj kumar.....410

012052 OPEN ACCESS Comprehensive study on the detrimental effects of fossil fuel exploration and pipe laying in deltaic region

L Sandeep Khanna, K Ramnath, J Monica, D Muthu and C Venkatasubramanian.....417

012053 OPEN ACCESS Analysis of noise pollution level in a University campus in South India

D Thattai, J S Sudarsan, R Sathyanathan and Visalatchi Ramasamy.....426

012054 OPEN ACCESS Natural disaster management in India with focus on floods and cyclones

Deeptha V Thattai, R Sathyanathan, R Dinesh and L Harshit Kumar.....433

012055 OPEN ACCESS Production of Biogas from wastes Blended with CowDung for Electricity generation-A Case study

D Muthu, C Venkatasubramanian, K Ramakrishnan and Jaladanki Sasidhar.....441

012056 OPEN ACCESS Influence of Random Inclusion of Coconut Fibres on the Short term Strength of Highly Compressible Clay

Evangelin Ramani Sujatha, S SaiSree, C Prabalini and Z Aysha Farsana.....449

012057 OPEN ACCESS Hazardous E-waste and its impact on soil structure

K Dharini, J Bernadette Cynthia, B Kamalambikai, J P Arul Sudar Celestina and D Muthu....455

012058 OPEN ACCESS Laboratory study on subgrade soil stabilization using RBI grade 81

J Bernadette Cynthia, B Kamalambikai, R Prasanna Kumar and K Dharini.....459

012059 OPEN ACCESS Improving pedestrian facilities in congested urban areas: a case study of Chennai city

B Subramanyam and R Prasanna Kumar.....462

012060 OPEN ACCESS Effect of addition of GGBS and lime in soil stabilisation for stabilising local village roads in Thanjavur region

R Saravanan, T Udhayakumar, S Dinesh, C Venkatasubramanian and D Muthu.....468

012061 OPEN ACCESS Deflection Control in Rigid Pavements

Nulu Varunkrishna and R Jayasankar.....476

012062 OPEN ACCESS Evaluation and Recalibration of Empirical Constant for Estimation of Reference Crop Evapotranspiration against the Modified Penman Method

K Sasireka, C Jagan Mohan Reddy, C Charan Reddy and K Ramakrishnan.....483

012063 OPEN ACCESS Delineation of Groundwater Potential Zone in Sengipatti for Thanjavur District using Analytical Hierarchy Process

G Siva, N Nasir and R Selvakumar.....492

012064 OPEN ACCESS Water supply pipe dimensioning using hydraulic power dissipation

J R Sreemathy, G Rashmi and C R Suribabu.....505

012065 OPEN ACCESS Assessing Performance of Multipurpose Reservoir System Using Two-Point Linear Hedging Rule

K Sasireka and T R Neelakantan.....519

012066 OPEN ACCESS Rainfall Analyses of Coonoor Hill Station of Nilgiris District for Landslide Studies

Evangelin Ramani Sujatha and C R Suribabu.....527

012067 OPEN ACCESS Statistical Analysis of 30 Years Rainfall Data: A Case Study

G Arvind, P Ashok Kumar, S Girish Karthi and C R Suribabu.....538

012068 OPEN ACCESS Protection of Urban Water body Infrastructure – Policy Requirements

T R Neelakantan and K Ramakrishnan.....547

012069 OPEN ACCESS Time Series Forecasting of Daily Reference Evapotranspiration by Neural Network Ensemble Learning for Irrigation System

N Manikumari, A Murugappan and G Vinodhini.....554

012070 OPEN ACCESS Technical and Sociological Investigation of Impacts in Using Lignite Mine Drainage for Irrigation – A Case Study

A Murugappan, A Manoharan, G Senthilkumar and J Krishnamurthy.....564

012071 OPEN ACCESS Application of Geoelectrical Resistivity Technique for Groundwater Explorationin Lower Ponnaiyar Sub-Watershed, Tamilnadu, India

S Poongothai and N Sridhar.....574

012072 OPEN ACCESS Sustainable Irrigation Allocation Model for Dry and Wet Periods using Reservoir Storage and Inflow

S Surianarayanan, C R Suribabu and K Ramakrishnan.....584