## **Civil Engineering**



Winter 2016

## Editor-in-Chief: Abolhassan Vafai

This Journal is published under the auspices of Sharif University of technology, Office of the Vice-Chancellor-in-Charge of Research.

The Journal is published quarterly in Farsi language, aims at establishing a relationship between scientists active in different branches of science and technology and, in particular, at providing a forum for exchange of knowledge between scientists and technologists related to scientific problems prevailing in contemporary society. The journal also strives to present practical and theoretical analyses of these issues and facilitates the circulation of modern scientific findings by scientists and researchers for practical application. In addition, "Sharif" publishes original papers focusing on issues of specific concern to universities, including research, technological advancements, and topics related to matters of higher education.

P.O.BOX 11155-8639 AZADI AVENUE, TEHRAN, I.R. IRAN Phone: (98-21) 66005419 - 66164093 Fax: (98-21) 66012983 Web: http://journal.sharif.ir/ http:// www. globalsciencejournals.com E-mail: pajouhesh@sharif.edu

## CONTENTS

- 3 ASSESSMENT OF EQUIVALENT STATIC EARTHQUAKE LOADINGS ON DLG AND THEIR VERSATILITY S. Ahmadzadeh and A. Sadeghi
- 13 EFFECT OF BIOGROUTING IN REDUCING THE EROSION RATE OF SAND
  - M. Amin and S.M.A. Zomorodian
- 21 ULTIMATE SHEAR STRENGTH OF STEEL-CONCRETE COMPOSITE PLATE GIRDER WITH LONGITUDINAL STIFFENERS LOADED IN SHEAR

A.A. Hayat-Davoodi, A. Dehghani and M. Ghasemi

- 33 SYNTHESIS OF BIMETALLIC NANOPARTICLES FE-NI AND INVESTIGATION OF THEIR PERFORMANCE IN AR14 DYE REMOVAL FROM AQUEOUS SOLUTIONS M. Niksefat and B. Ayati
- 45 USE OF CLOSELY SPACED HEADED BARS IN BEAM-COLUMN JOINTS SUBJECTED TO CYCLIC LOADING A. Pourhassan and M. Reza Esfahani
- 53 A COMPARISON BETWEEN SEISMIC BEHAVIOR AND ECONOMY OF STEEL SHEAR WALLS WITH COMMON LATERAL BEARING SYSTEMS IN STEEL STRUCTURES S. Poulaki, J. Keyvani and A. Massumi
- 63 MODELING OF CYCLIC PERFORMANCE OF STRUCTURES CONSIDERING PINCHING, STIFFNESS DEGRADATION, STRENGTH DETERIORATION, AND SLIDING PHENOMENA M. Zeynalian, M. Mokhtari and H. Tajmir Riahi
- 73 ROAD USER DELAY ESTIMATION MODEL USING SOFTWARE SIMULATION M. R. Ahadi, M. Nasrollahi and P. Gholamin
- 81 NONLINEAR ANALYSIS OF REINFORCED CONCRETE STRUCTURES UNDER MONOTONIC AND REVERSED CYCLIC LOADING USING THE FINITE ELEMENT METHOD B. Amiri and A. Houshang Akhaveissy

RESEARCH NOTES:

89 LABORATORY ASSESSMENT OF EFFECTING WATER CONTENT AND FOAM INJECTION RATIO ON SOIL CONDITIONING FOR EPB-TBM TUNNELING

S. T. Azali, M. Ghafoori, G.R. Lashkaripour and Jafar Hassanpour

- 99 STUDY OF PELLEVATION GEOMETRY EFFECTS ON IMPROVING SEISMIC PERFORMANCE OF SINGLE LAYER DIAMATIC DOMES M. Daei, R. Haghani and M. Hejazi
- 111 ANALYSING WINDOWS-BASED DELAY ANALYSIS METHODS IN THE EASY PLAN PROGRAM AND OFFERING A FRAMEWORK IN SELECTING THE BEST DELAY ANALYSIS METHOD M. P. Jalal, M. Golabchi and E. Yousefi
- 123 A SURVEY OF CONCRETE SLUMP EFFECTS ON THE COMPRESSIVE CAPACITY OF DRILLED SHAFTS (CASE STUDY: SORKHROOD SITE) E. Shooshpasha, R. Noorzad, M.H. Khashipour and S.J. Jalali
- 131 COMPARISON OF DIFFERENT CODES FOR DETERMINATION OF THE AXIAL BEARING CAPACITY OF PILES M.M. Ahmadi and E. Keshmiri

APPENDIX

150 ABSTRACTS OF PAPERS IN ENGLISH