

International Journal of GEOMATE

(Geotechnique, Construction Materials and Environment)



THE GEOMATE INTERNATIONAL SOCIETY

https://www.geomatejournal.com

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

<u>International Journal of GEOMATE is Abstracted/Indexed in</u>: SCOPUS, Web of Science Emerging Sources Citation Index (ESCI), EBSCO, Global Impact Factor (GIF), Gale (a Cengage Learning Company), Ulrichsweb, Global Serials Directory, etc.

Impact Factor by SCOPUS (SJR)	Paper Acceptance Rate
2020: 0.270	2020: 53.84%
2019: 0.300	2019: 43.45%
2018: 0.302	2018: 46.60%
2017: 0.251	2017: 41.09%
2016: 0.284	2016: 41.31%
2015: 0.250	2015: 35.28%
2014: 0.248 2013: 0.143 2012: 0.115	2014: 37.50% 2013: 38.71% 2012: 46.66% 2011: 61.53%

Editor-in-Chief:

Prof. Dr. Zakaria Hossain, Mie University, Japan

Associate Editors:

Prof. Dr. Fumio Tatsuoka, Tokyo University of Science, Japan

Prof. Dr. Sai Vanapalli, University of Ottawa, Canada

Prof. Dr. Ian Jefferson, University of Birmingham, United Kingdom

Prof. Dr. Mounir Bouassida, National School of Engineering of Tunis

Prof. Dr. Bujang B.K. Huat, University Putra Malaysia, Malaysia

Prof. Dr. Nemy Banthia, University of British Columbia, Canada

Prof. Dr. Toshinori Sakai, Mie University, Japan

Prof. Dr. Valeriy Perminov, Tomsk Polytechnic University, Russia

Prof. Dr. Jing-Cai Jiang, University of Tokushima, Japan

Prof. Dr. Lilia Robles Austriaco, Angles University Foundation, Philippines

Prof. Dr. Muhammad Ibn Ibrahimy, International Islamic University, Malaysia

Prof. Dr. Shamsul I. Chowdhury, Roosevelt University, USA

Prof. Dr. Isabel Pinto, University of Coimbra, Portugal

Prof. Dr. Mark Jaksa, University of Adelaide, Australia

Prof. Dr. Kaneco Satoshi, Mie University, Japan

Prof. Dr. Junichiro Takeuchi, Kyoto University, Japan

Prof. Dr. Ranjith Pathegama Gamage, Monash University, Australia

Prof. Dr. Kingshuk Roy, Nihon University, Japan

Prof. Dr. Md. Shahin Hossain, Islamic University of Technology, Bangladesh

Prof. Dr. Pedro Arrua, Universidad Tecnológica Nacional, Argentina

Prof. Dr. Miguel A. Pando, University of North Carolina, USA

Prof. Dr. Suksun Horpibulsuk, Suranaree University of Technology, Thailand

Prof. Dr. Musharraf Zaman, University of Oklahama, USA

Prof. Dr. Rafiqul Tarefder, University of New Mexico, USA

A/Prof. Dr. John Victor Smith, RMIT University, Australia

Prof. Dr. Basir Mir, National Institute of Technology Srinagar, India

Prof. Dr. Lily Surayya Eka, State Islamic University Syarif Hidayatullah Jakarta, Indonesia

A full list of sub-editors and editorial assistants are given in the web page.

Copyright @ International Journal of GEOMATE
All rights reserved. In principle, no part of this publication or the information contained herein may be reproduced in any form or by any means, translated in any language, stored in any database or retrieval system, or transmitted in any form or by any means without prior permission in writing from the publisher.

Disclaimer: The editors and the publisher have tried their best effort to ensure integration and the quality of this publication and information herein. However, they give no warranty of any kind, expressed or implied with regard to the material contained in this journal, and will not be liable in any event for the consequences of its use.

Publisher: The GEOMATE International Society

Place of publication: Tsu city, Mie, Japan

Contact: Editor-in-Chief, Dr. Zakaria Hossain, Professor, Graduate School of Bioresources,

Mie University, 1577 Kurimamachiya, Tsu city, Mie 514-8507, Japan

E-mail: editor@geomatejournal.com, URL: http://www.geomatejournal.com/

Tel & Fax: +81-59-231-9578

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

Founded in 2011, *The "International Journal of GEOMATE*" is a Scientific Journal of the GEOMATE International Society that encompasses a broad area in Geotechnique, Construction Materials, and Environment. The key objective of this journal is to promote interdisciplinary research from various regions of the globe. The editorial board of the journal is comprised of extensively qualified researchers, academicians, scientists from Japan and other countries of the world. It is a peer-reviewed journal that is published quarterly. All articles published in this journal are available online. Contributors may download the manuscript preparation template for submitting paper or contact to the Editors-in-Chief [editor@geomatejournal.com].

Aims and Scopes:

The journal aims to become an efficient mean of publishing and distributing high-quality information from the researchers, scientists, and engineers. The main scopes are as follows:

- Advances in Composite Materials
- Computational Mechanics
- Foundation and Retaining Walls
- Slope Stability
- Soil Dynamics
- Soil-Structure Interaction
- Pavement Technology
- Tunnels and Anchors
- Site Investigation and Rehabilitation
- Ecology and Land Development
- Water Resources Planning
- Environmental Management
- Earthquake and Tsunami Issues
- Safety and Reliability
- Geo-Hazard Mitigation
- Case History and Practical Experience
- Others

Review Policy:

- The paper which meets the editorial criteria will be assigned to at least two anonymous reviewers for peer-review.
- Authors may recommend some reviewers however, Editors are entitled to consider them or not.
- The Editorial Board consists of an outstanding group that is responsible for the review process of the submitted manuscripts and will guarantee the quality of the publication.
- The manuscript will be published as soon as it is accepted and all the modifications recommended by the reviewers are made.
- The review procedure is as strict as in the most prestigious journals, but publication time is minimized.
- Based on the reviewers' comments, the Editors will make a decision on a paper as one of the following four conditions:
- 1. Accept without revision
- 2. Accept with minor revision
- 3. Encourage to resubmit with major revision
- 4. Reject

In case of acceptance with either minor or major revisions, the authors will be advised to revise the manuscript according to the reviewers' comments.

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

Instruction to Author:

The manuscript to be submitted should be prepared using the manuscripts submission template.

Download the manuscript formatting template from download files menu.

The manuscript to be submitted adheres to the rules and guidelines given in manuscript template.

The manuscript should be written in English. List of references must be translated into English if other languages (both should be written).

The page limit is 8 pages for ordinary manuscript and 10 pages for the invited manuscript.

The references inside the text and in the bibliographic list should follow the formats as per the manuscript template.

All figures, graphs, and tables must follow the font-style of the text. Ensure clear and good quality picture in the first submission.

Selected manuscript from "GEOMATE Conference Presentation" will be reprinted in the journal with nominal charges (40% discount of regular fees) based on the agreement of the authors.

Accepted papers which were not presented in "GEOMATE Conference" need publication charges of 800 USD as regular fees. Any page or fraction thereof exceeding page limit will be charged 100 USD per page. Extra author fee is 100 USD/author if exceeding 5 authors.

This is required for its maintenance such as managing article submission and peer review, typesetting, tagging and indexing of articles, hosting articles on dedicated servers, supporting sales and marketing costs to ensure global dissemination via different databases, and permanently preserving the published journal article.

Copyright: GEOMATE required to obtain copyright of papers from authors for the term of copyright by signing and returning the publishing agreement.

Submission Method:

Submit full manuscript online using "Submission" menu. We accept online submission only.

Copyright release form to be e-mailed separately along with the manuscript submission. Download it from the "Download Files Menu".

Abolition of printed version: Considering environmental conservation, the paper version has been discontinued since June 2016.

For any questions: Contact us [editor@geomatejournal.com].

Membership Fees: Regular Member 100USD/year; Life Member 900USD only.

Membership Benefits:

- Receive Membership ID/Card
- Use M.G. or L.M.G. after your name (M=Member, G=Geomate, L=Life)
- Be involved in GEOMATE technical committees and activities
- Be up-to-date on the current development in the field
- Priority right to participate in international conferences with 20% discount
- 20% discount for Journal paper publication
- Vote in the election of GEOMATE officers
- Access to the Journal webpage

Membership Application (send the related items below using online form):

- Full Name:
- Title/Position (check one): \Box Prof. \Box A/Prof. \Box Dr. \Box Mr. \Box Ms.
- Membership Category (check one): □ Regular Member □ Life Member □ Others
- Address:
- Tel & Fax:
- E-mail (co-authors email separated by comma):
- Research Area (check one): □ Geotechnique □ Construction Materials □ Environment □ Others

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

STATEMENT ON PUBLICATION ETHICS AND PUBLICATION MALPRACTICE (1/2)

The International Journal of GEOMATE is a double-blind peer-reviewed journal. All parties involved in the act of publishing an article for this journal, i.e.: the editors, the author, the peer-reviewers and the publisher must follow the ethical behavior indicated in the COPE's Best Practice Guidelines for Journal Editors. In order to warrant high-quality scientific publications, public trust in scientific findings, and that people receive credit for their ideas, the ethical standards for publication are followed.

DUTIES OF EDITORS

<u>A decision on the Publication of Article:</u> Based on the double-blind peer review of a paper, the Chief Editor and the Associate Editor are responsible for deciding which of the articles accepted for publication. Neither the Chief Editor nor the Associate Editor has the authority to influence the reviewers who are conducting the blind review of the articles submitted for peer review. The Chief Editor and the Associate Editor may be guided by the policies of the journal's Editorial Board and subjected to such legal requirements regarding libel, copyright infringement, and plagiarism.

<u>Honest Play:</u> Manuscripts submitted to GEOMATE shall be exclusively evaluated based mainly on their intellectual quality and significance. GEOMATE will not give any consideration to authors' race, gender, sexual orientation, religious beliefs, ethnic origin, citizenship, or political philosophy.

<u>Confidentiality:</u> The Chief Editor, the Associate Editor, and any editorial staff must not disclose any information about a submitted manuscript to anyone other than the corresponding author, reviewers, potential reviewers, other editorial advisers, and the publisher.

<u>Disclosure and Conflicts of Interest:</u> Unpublished materials disclosed in a submitted manuscript must not be used by anyone who has a view of the manuscript (while handling it) in his or her own research without the express written consent of the author.

DUTIES OF REVIEWERS

The contribution of <u>Double-Blind Peer Review</u>: Any identifying information will be stripped out from the submitted paper so that the reviewers do not know any information about the authors and vice versa i.e.: reviewers' comments to the editors are confidential and before passing on to the authors, it will be made anonymous. The Double Blind Peer review assists the reviewers in making editorial decisions, while editorial communications with the author may also assist the author in improving the manuscript. The names of the reviewers known only to the Chief Editor and the Associate Editor and it remains strictly confidential to authors.

<u>Punctuality:</u> Any selected referee who feels unqualified to review the assigned manuscript or unable to provide a prompt review should notify the Chief Editor and the Associate Editor and excuse himself/herself from the review process.

<u>Confidentiality:</u> Private information or ideas obtained through double-blind peer review must be kept confidential and not used for personal advantage. Manuscripts received for review must be treated as confidential documents. Without any authorization by the Chief Editor and the Associate Editor, the information of the submitted manuscript must not be shown to or discussed with, others.

<u>Standards of Objectivity:</u> There shall be no personal criticism of the author. Reviewers should express their views clearly with supporting arguments and reviews should be conducted objectively.

<u>Acknowledgment of Sources:</u> Authors should cite relevant references and corresponding citation if any statement in the submitted paper had been previously published or reported elsewhere. Reviewers should identify relevant published work that has not been cited by the authors. If a reviewer finds any substantial similarity or overlap between the submitted manuscript and any other published works, s/he should inform the Chief Editor/Associate Editors.

<u>Conflict of Interest:</u> In any reviewers find that the submitted manuscript has conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions, s/he should not review that manuscripts and notify to the Chief Editor/Associate Editors prompt.

DUTIES OF AUTHORS

<u>Reporting Standards:</u> Authors of papers of original research should present an accurate account of the work performed as well as an objective discussion of its significance. Underlying data should be represented accurately in the paper. A manuscript should contain sufficient detail and references to permit others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behavior and are unacceptable.

<u>Data Access and Retention</u>: Authors may be asked to provide the raw data in connection with a paper for editorial review, and should be prepared to provide such data for public access or for access to the readers of the journal.

<u>Originality and Plagiarism:</u> The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, this must be appropriately cited or quoted. All papers published by International Journal of GEOMATE are committed to publishing only original material, i.e., material that has neither been published elsewhere nor is under review elsewhere. The paper that is found to have been plagiarized from a manuscript by other authors, whether published or unpublished, will incur plagiarism sanctions.

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

STATEMENT ON PUBLICATION ETHICS AND PUBLICATION MALPRACTICE (2/2)

<u>Acknowledgment of Sources:</u> Proper acknowledgment of the work of others must always be given. Authors should cite publications that have been influential in determining the nature of the reported work.

<u>Manipulation of Citations</u>: Submitted papers that are found to include citations whose primary purpose is to increase the number of citations to a given author's work, or to articles published in a particular journal, will incur sanctions for manipulation of citations.

Falsification and Fabrication. Submitted papers that are found to have either falsified or fabricated numerical/experimental results, including the manipulation of images, will incur data fabrication and falsification sanctions.

<u>Authorship:</u> The authorship of a paper should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where there are others who have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors.

<u>Scientific Contribution</u>: All listed authors must have made a significant scientific contribution to the research in the manuscript and approved all its claims. It is important to list everyone who made a significant scientific contribution, including students and laboratory technicians

<u>Corresponding Author</u>: Corresponding Author is the author responsible for communicating with the journal for publication. The corresponding author should ensure that all appropriate co-authors and no inappropriate co-authors are included on the paper and that all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication.

Acknowledgment of Funding Sources: Funding sources for the research reported in the manuscript should be duly acknowledged after the conclusion and before the list of references.

<u>Disclosure and Conflicts of Interest:</u> All sources of financial support for the project or any substantive conflict of interest that might be interpreted to influence the results of the paper should be disclosed.

Fundamental Errors in Published Works: It is the author's responsibility to promptly notify the Chief Editor/Associate Editor if s/he discovers a significant error or inaccuracy in his/her own published work to retract or correct the paper.

Redundant, Concurrent or Multiple Publications: An author should not, in general, publish manuscripts describing essentially the same research in more than one journal or primary publication. Manuscripts that are found to have been published elsewhere, or to be under review elsewhere, will incur duplicate submission/publication sanctions. If authors have used their own previously published work or work that is currently under review, as the basis for a submitted manuscript, they are required to cite the previous work and indicate how their submitted manuscript offers novel contributions beyond those of the previous work. Submitting the same manuscript to more than one journal concurrently constitutes unethical publishing behavior and is unacceptable. Redundant publications involve the inappropriate division of study outcomes into several articles.

SANCTIONS

In the event that there are documented violations of any of the above-mentioned policies in any journal, regardless of whether or not the violations occurred in a journal published by GEOMATE, the following sanctions will be applied:

- •Immediate rejection of the infringing manuscript.
- •Immediate rejection of every other manuscript submitted to GEOMATE by any of the authors of the infringing manuscript.
- •The prohibition against all of the authors for any new submissions to GEOMATE, either individually or in combination with other authors of the infringing manuscript, as well as in combination with any other authors. This prohibition will be imposed for a minimum of five years.
- •Prohibition against all of the authors from serving on the Editorial Board of the International Journal of GEOMATE
 In cases where the violations of the above policies are found to be particularly outrageous, the publisher reserves the right to impose additional sanctions beyond those described above.

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

Volume 22, Issue 91

RELATIONSHIP BETWEEN LIQUEFACTION STRENGTH OF SAND WITH FINE FRACTION AND VARIOUS VOID RATIOS Kentaro Ishii, Wen Liu, Satoshi Shigemura and Shoji Kamao	1-7
STUDY ON PHYSICAL PROPERTIES AND GRASS GROWTH CAPACITY OF POROUS CONCRETE Kensuke Yamaya, Yui Oyake Yoshihiro Suenaga and Hidenori Yoshida	8-13
ADDITION OF NI AND Mo AS AN EFFORT TO INCREASE ETHANOL IN PALM OIL WASTEWATER TREATMENT Andri Gumilar, Mindriany Syafila, Marisa Handajani and Syarif Hidayat	14-21
MID-INFRARED SPECTRA OF CHLORIDE ION IMMOBILIZED ON CEMENT Yu Hashimoto , Shinichiro Okazaki, Kenji Wada, Ichiro Ishimaru and Koji Kanasaki	22-29
EXAMPLE OF MEASUREMENT FOR FROST HEAVING FORCE ACTING ON FULL-SCALE GROUND ANCHOR AND SOIL NAILING Atsuko Sato, Osamu Hatakeyama, Hirochika Hayashi, Masahiko Yamaki, Jun Ikeda, Takayuki Iizuka, Noboru Mikami, Tuyoshi Nakamura, Fumitada Mikami and Yuji Kyouden	30-37
DATA MODELING WITH AUTOREGRESSIVE BASED ON REVERSIBLE JUMP MCMC SIMULATION: COMPARING GAUSSIAN AND LAPLACIAN NOISE Suparman, Mahyudin Ritonga, Ahmad Muhammad Diponegoro, Mohamed Nor Azhari Azman and Eviana Hikamudin	38-45
TILLER AND RHIZOME GROWTH ON EXCAVATED SLOPES IN TWO Carex SPECIES FROM COLONIES ON LANDSLIDES Teruo Arase, Tetsuo Okano, Tetsuoh Shirota, Masaaki Furuno and Taizo Uchida	46-52
A CFD STUDY OF PARTICLE FLOWS (PM1, PM10, PM100) IN LOW-VOLUME IMPACT SEPARATOR Pannita Phirommark, Chakrit Suvanjumrat, Watcharapong Chookaew, Sakchai Uapipatanakul and Machimontorn Promtong	53-61
REVIEW ON CURRENT SITUATION OF GENERATION AND MANAGEMENT OF COAL ASH IN VIETNAM Tran Viet Cuong, Ken Kawamoto, Tong Ton Kien and Nguyen Hoang Giang	62-69
ANALYTICAL OF MULTI-CRITERIA APPROACH FOR IDENTIFYING THE WEIGHT AND FACTOR OF RURAL ROAD MAINTENANCE PRIORITIZATION Pawarotorn Chaipetch, Chisanu Amprayn Paijit Pawan and Vatanavongs Ratanavaraha	70-79
THE EFFECT OF POROUS CONCRETE WITH ARTIFICIAL AGGREGATE HANDLING ON EROSION REDUCTION IN SLOPE AND SANDY CLAY CONDITIONS Bimo Brata Adhitya, Anis Saggaff, Hanafiah and Dinar Dwi Anugerah Putranto	80-86
EFFECT OF SCREW ON THE AXIAL PERFORMANCE OF COLD-FORMED STEEL Desy Setyowulan, Eva Arifi, Devi Nuralinah and Edwardo Pradana A.N.	87-92
ANALYSIS OF LOCAL RESIDENTS' MOVEMENTS FOR DAILY LIFE IN URBAN AREAS IN JAPAN Hibiki MOTOI and Yukikazu YAMAGUCHI	93-100
ANALYSIS OF SOIL DYNAMIC RESPONSE DUE TO EARTHQUAKE IN INDONESIA Enden Mina, Rama Indera Kusuma, Woelandarai Fathonah, Restu Wigati and Aisi Farhah	101-112
TRANSVERSE SALINITY DYNAMIC IN A SHALLOW TIDAL CHANNEL Hiep Thi Nguyen, Kiyosi Kawanishi and Cong Xiao	113-121

(Geotechnique, Construction Materials & Environment) ISSN: 2186-2982(Print), 2186-2990(Online)

Volume 22, Issue 92

NUMERICAL ANALYSIS OF THE AXIAL AND RADIAL SWELLING OF UNSATURATED COMPACTED BENTONITE Shinya Tachibana, Daisuke Hayashi, Tomoko Ishii, Tomohide Takeyama and Atsushi Iizuka	
ESTIMATING THE RADIAL DISPLACEMENT ON THE TUNNEL BOUNDARY BY ROCK MASS CLASSIFICATION SYSTEMS V.K. Dang, N.A. Do and V.D. Dinh	9-15
GIS-BASED SITE SUITABILITY ANALYSIS FOR HEALTHCARE FACILITY DEVELOPMENT IN TACLOBAN CITY, PHILIPPINES Marian Stephanie R. Lao, Maria Cecilia R. Paringit and Stephen Ross L. Roleda	16-23
TARGET RESILIENCE INDEX FOR WATER DISTRIBUTION NETWORKS Pornnapus Kongbuchakiat, Adichai Pornprommin and Surachai Lipiwattanakarn	24-31
FEATURES OF THE BEARING CAPACITY ESTIMATION OF THE COLLAPSING SOIL BASES Askar Zhussupbekov, Aizhan Zhankina, Assel Tulebekova, Askar Yessentayev and Iliyas Zhumadilov	32-40
THREE-DIMENSIONAL ANALYSIS OF GEOGRID REINFORCED FLEXIBLE PAVEMENT USING FINITE DIFFERENCE PROGRAM FLAC3D Rojimol J. and Umashankar B.	41-47
EFFECT OF MAGNESIUM OXIDE AND CARBONATION ON COLLAPSE POTENTIAL OF COLLAPSIBLE GYPSEOUS SOIL Ahmed S.A. Al-Gharbawi, Mohammed Y. Fattah and Mahmood R. Mahmood	48-55
EFFECT OF RECYCLED PLASTIC CONTENT AS FILLERS ON MECHANICAL AND DURABILITY PROPERTIES OF CONCRETE Nuntachai Chusilp and Chuthamat Laksanakit	56-63
FRACTURE STIMULATION OF THE ADHESIVE POST-INSTALLED ANCHOR APPLIED TO EXISTING CONCRETE STRUCTURES Takuma Kadono, Shinichiro Okazaki, Taro Nakamura and Mao Kurumatani	64-70
INFLUENCE OF RAINFALL INTENSITY ON INFILTRATION SURFACE FORMATION OF RIVER EMBANKMENTS Shin-ichi Kanazawa , Tsubasa Ichijo and Hisao Emoto	71-76
STUDY ON PROPERTIES OF CONCRETE MIXED WITH RICE HUSK ASH ADSORBING HEAVY METALS Ayane Yanaka, Takuto Ueno, Shinichiro Okazaki, Naomochi Matsumoto and Hidenori Yoshida	77-82
EVALUATION OF UNDERGROUND SPACE FOR TSUNAMI EVACUATION SAFETY WITH ROUTE OBSTACLES BY AGENT-BASED SIMULATION Akira Takahashi, Kensuke Yasufuku and Hirokazu Abe	83-91
METROPOLITAN MANILA SEISMIC HAZARD MAP USING MIDORIKAWA & HORI SITE AMPLIFICATION MODEL Jonathan R. Dungca and Mariamae Francia G. Montejo	92-99
A CFD INVESTIGATION INTO MOLTEN METAL FLOW AND ITS SOLIDIFICATION UNDER GRAVITY SAND MOULDING IN PLUMBING COMPONENTS Sirawit Namchanthra, Chakrit Suvanjumrat, Watcharapong Chookaew, Wichuphan Wijitdamkerng and Machimontorn Promtong	100-108
INVESTIGATION AND STABILITY ANALYSIS OF SLOPE FAILURE AT EXTREMELY SHALLOW LAYER AFTER SNOWMELT IN SNOWY COLD REGIONS Naoki Miura, Dai Nakamura, Takayuki Kawaguchi and Shunzo Kawajiri	109-115
THE EFFECT OF ADMIXTURE VARIATIONS ON WORKABILITY AND COMPRESSIVE STRENGTH OF GEOPOLYMER CONCRETE FLY ASH BASED WITH HIGH CALCIUM CONTENT Nur Ahmad Husin, Yuyun Tajunnisa, Jihad Fadhlurohman, Ridho Bayuaji, Sigit Darmawan, Priyo Suprobo and Raden Buyung Anugraha Affandhie	116-123
SEDIMENT ACCUMULATION ASSESSMENT DURING WET AND DRY SEASONS IN FISH CAGE CULTURE AREA: A CASE STUDY OF THE RANGSIT CANAL 13 IN THAILAND'S PATHUM THANI PROVINCE Boontarika Thongdonphum, Kittima Vanichkul, Sangob Srimueang and Adun Bunchaleamchai	124-131