



## **GISUP 2017, International**

The 19<sup>th</sup> International Symposium of  
Geospatial Information Science and Urban Planning

February 16-18, 2017

4F, Sky-Hall  
Bunkyo Campus, Nagasaki University,  
1-14 Bunkyo Machi, Nagasaki 852-8521, Japan

**Organizing Committee of GISUP2017, International**

*Published by*

GISUP, INTERNATIONAL

1-14 Bunkyo-Machi, Nagasaki City, 852-8521, Japan

**GISUP 2017, International**

**The 19<sup>th</sup> International Symposium of Geospatial Information Science and Urban Planning**

Copyright (c) 2017 by GISUP, INTERNATIONAL

All rights reserved. This book, or parts thereof, may not be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage and retrieval system now known or to be invented, without written permission from the Publisher.

ISBN-978-4-9907633-3-6

Typeset by

Secretariat of Organizing Committee

office@gisup.org <http://gisup.org>

Printed by

GA Creous Co., Ltd.

Kinko's AMU PLAZA Nagasaki Center, Japan

# Welcome to GISUP 2017 "Informatics and Science"




Welcome to GISUP2017 in Nagasaki

Dear colleagues and friends,

We are very pleased to hold this conference in Nagasaki and see you again during the period. Sites of Japan's Meiji Industrial Revolution were accepted as a world heritage by UNESCO in 2015. These sites are composed of 23 assets, and there are eight assets such as Former Glover House and Hashima coal mine in Nagasaki city. Of course, you can visit these sites and enjoy after the conference. On the other hand, big earthquakes in Kumamoto prefecture near to Nagasaki have taken place in April of 2016. Many buildings and houses have been destroyed, and also Kumamoto Castle which is famous for its traditional and magnificent shape has been damaged severely. It seems that they need more time to rebuild completely after the earthquakes.

Through this disaster, big amount of donations for relief has been collected by many foreign countries. We thank foreign friends who support this area. Let's talk to each other and enjoy our good time. I hope our collaboration will last for a long time.

General Chair, Prof. Kazuichi Sugiyama

A handwritten signature in black ink, reading "Sugiyama". The signature is stylized, with the first letter 'S' being large and the last letter 'a' having a long, sweeping tail.

## ORGANIZING COMMITTEE

### **Chairman:**

Kazuichi Sugiyama, Nagasaki University, JAPAN  
(sugiyama@nagasaki-u.ac.jp)

**Vice Chairman:** In-Tea Yang, Kangwon National University, KOREA  
(intae@kangwon.ac.kr)

**Vice Chairman:** Cheng-di Dong, National Kaohsiung Marine University, TAIWAN  
(cddong@webmail.nkmu.edu.tw)

### **Members:( \* Session Chair)**

Jui-Chung Kao\*, National Kaohsiung Marine University, TAIWAN  
(jckao@webmail.nkmu.edu.tw)

Hui-Lun Yu, National Kaohsiung Marine University, TAIWAN  
(hlyu@webmail.nkmu.edu.tw)

Rieko Nakao\*, Nagasaki University, JAPAN  
(rieko@nagasaki-u.ac.jp)

Takahito Ueno\*, Sojo University, JAPAN  
(ueno@ed.sojo-u.ac.jp)

Seung-Pil Choi, Catholic Kwandong University, KOREA  
(spchoi@kwandong.ac.kr)

Chang-Hahk Hahm, Inha Technical College, KOREA  
(chhahm@inhate.ac.kr)

Eung-Nam Kim, Inha Technical College, KOREA  
(kimen@inhatec.ac.kr)

Won-Dae Kim\*, Inha Technical College, KOREA  
(kimwd@inhatec.ac.kr)

Yongjin Joo, Inha Technical College, KOREA  
(jyj@inhatec.ac.kr)

Dong-Ha Lee\*, Kangwon National University, KOREA  
(geodesy@kangwon.ac.kr)

Huang He\*, Beijing University of Civil Engineering and Architecture, CHINA  
(huanghe@bucea.edu.cn)

Sunhui Sim, University of North Alabama, USA  
(ssim@una.edu)

Byungdug Jun\*, Nagasaki University, JAPAN  
(bdjun@nagasaki-u.ac.jp)

# **GISUP2017 Detailed Program**

The 19<sup>th</sup> International Symposium of  
Geospatial Information Science and Urban Planning  
(GISUP2017, International)

February 16-18, 2017

4F, Sky-Hall  
Bunkyo Campus, Nagasaki University,  
1-14 Bunkyo Machi, Nagasaki 852-8521, Japan

Organized by Organizing Committee of GISUP2017, International  
Sponsored by *Nagasaki University, Japan*

## **Schedule**

February 16, 2017 GISUP 2017, Keynote Lecture,  
4F, Sky-Hall, Bunkyo Campus, Nagasaki University, Japan  
February 17, 2017 GISUP 2017, Oral & Poster Presentation,  
4F, Sky-Hall, Bunkyo Campus, Nagasaki University, Japan  
Session-1, 2, 3, 4, 5, 6, 7 (8:30-17:05)  
February 18, 2017 City tour in Nagasaki and Farewell

## **Registration Fee**

General: 10,000 JPY

Student: 5,000 JPY

## **Conference Program Contents**

The conference consists of information symposium for Geospatial Information Science and Urban Planning (GISUP2017), for scientific sessions on various GIS and urban planning method and system.

## **Thursday, 16 February** (4F, Sky-Hall, Bunkyo Campus)

**Registration (16:00 - 16:30)**

**Keynote Lecture (16:30 - 17:30)**

*Titled: Need Oriented Development of Technical Devices for Disabled*  
*(Prof. Takakazu Ishimatsu)*

1

## **Friday, 17 February** (4F, Sky-Hall, Bunkyo Campus)

**Opening Address (8:30 - 8:40)**

*Chairman: Prof. Kazuichi SUGIYAMA (Nagasaki Univ., Japan)*

### **SCIENTIFIC SESSIONS**

#### **Session-1 (8:40 – 10:10) (Oral Presentation)**

*(Session Chair: Prof. Jui-Chang KAO, NKMU, Taiwan)*

1. Reuse of Dredged Harbor Sediments by Admixing with Basic Oxygen Furnace Steel Slag  
*Yee Cheng Lim, Chia-Chun Chang, Cheng-Di Dong, Tsung-Yu Wu, Chiu-Wen Chen* 6
2. Iron Oxide-immobilized Carbon Black Nanocomposites for Benzene Liquid-phase  
 Persulfate Oxidation  
*Chang-Mao Hung, Ching-Feng Hsiung, Chiu-Wen Chen, Cheng-Di Dong* 10
3. Hydrocyclone Separation for the Remediation of Harbor Contaminated Sediments  
*Chun-Lun Lin, Chih-Feng Chen, Chiu-Wen Chen, Cheng-Di Dong* 14
4. Korea and It's a outlook from Japan~Utilizing public opinion and a questionnaire surveys~  
*Kentaro Matsumoto, Byungdug Jun* 18
5. Bioaccumulation of Heavy Metals in Tilapia Aquacultured in Southwest Taiwan and  
 Implication for Human Health Risk Assessment  
*Xiang-Ying Chuang, Yun-Ru Ju, Cheng-Di Dong, Chiu-Wen Chen* 24
6. Removal of Polycyclic Aromatic Hydrocarbons (PAHs) from Harbor Sediments  
 by Anionic and Nonionic Surfactants  
*Yun-Ru Ju, Po-Chang Wu, Chih-Feng Chen, Chiu-Wen Chen, Cheng-Di Dong* 28

## **Session-2 (10:10 – 10:40) (Poster Presentation with Coffee Break)**

(Session Chair: Prof. Byungdug JUN, Nagasaki University, Japan)

pages

- |   |    |
|---|----|
| 7. Calibration of a Non-Metric Camera for Close-range Photogrammetry                                      |    |
| <i>Seung-Pil Choi, Hun Kim, Min-Chan Ko</i>   | 32 |
| 8. Network Data Model for Visually Impaired People  |    |
| <i>Song-Pyo Hong, Eui-Myoung Kim</i>  | 37 |
| 9. Questionnaire Survey for the future of foreign language education in Japan                             |    |
| <i>Mayu Uchida, Byungdug Jun</i>  | 43 |
| 10. Comparison of True Orthimage Generated Using Photogrammetry and<br>Computer Vision Techniques         |    |
| <i>Han-Seung Choi, Eui-Myoung Kim</i>   | 50 |
| 11. Comparing Peace Education As Seen From Both Suffering and<br>Aggressing Sides of Wars Involving Japan |    |
| <i>Yukina Tanaka, Byungdug Jun</i>  | 57 |

## **Session-3 (10:40 – 12:10) (Oral Presentation)**

(Session Chair: Prof. Won-Dae KIM, Inha Technical College, Korea)

- |  |    |
|--|----|
| 12. Electrochemical Determination of Naproxen Using Poly (L-Serine)<br>Modified Glassy Carbon Electrode                  |    |
| <i>Shih-Kai Chen, Chang-Mao Hung, Chiu-Wen Chen, Cheng-Di Dong</i>   | 66 |
| 13. Removal of Heavy Metal from Contaminated Harbor Sediment by Acid Washing   |    |
| <i>Syuan-Yao Syu, Chih-Feng Chen, Chiu-Wen Chen, Cheng-Di Dong</i>   | 70 |
| 14. A Western Perspective on Racial Classification and Cultural Identity in Japan and Korea                              |    |
| <i>Lee Flake</i>   | 74 |
| 15. How to Improve Usability in GIS - Human Centered Design Process –  |    |
| <i>Toru Mizumoto</i>   | 90 |
| 16. $\text{Fe}^{2+}/\text{S}_2\text{O}_8^{2-}$ Oxidation Process for Degradation of Phthalate Esters in Harbor Sediments |    |
| <i>Chang-Mao Hung, Syue-Yu Lyu, Yung-Chi Lu, Chiu-Wen Chen, Cheng-Di Dong</i>  | 92 |
| 17. ICT Teaching Material for old battle fields in Okinawa   |    |
| <i>Sakura Arasaki, Byungdug Jun</i>  | 96 |

**Session-4 (12:10 – 12:40) (Poster Presentation with Coffee Break)**

(Session Chair: Assoc. Prof Rieko NAKAO, Nagasaki University, Japan)

pages

18. The Possibilities of Career Education – Based on Document Search and Interviews –  
*Sayaka Masuda, Byungdug Jun* 103
19. Analysis of DEM Accuracy Using Inverse Distance Weighted Interpolation  
*Chnag-Han Lee, Chun-Ja Sung* 112
20. Comparison with A Free Association Test for Elementary and  
Junior High School Students of Japan and Korea  
*Sae Fujimoto, Kiyoka Muta, Byungdug Jun* 118
21. A Critical Look at Peace Education Curriculum in Japan  
*Lee Flake* 123
22. Community-based Disaster Management and Community Involvement  
in Sloped Urban Districts of Nagasaki City  
*Rieko Nakao, Ryoko Kawasaki, Akiko Nitta* 136

**Lunch Break (12:40 – 13:40)**

**Session-5 (13:40 – 15:10) (Oral Presentation)**

(Session Chair: Assoc. Prof Dong-Ha LEE, Kangwon National University, Korea)

23. Distribution of Total Mercury and Methylmercury in the Sediments  
of Kaohsiung Port, Taiwan  
*Chih-Feng Chen, Guan-Ting Lin, Cheng-Di Dong, Chiu-Wen Chen* 140
24. Identifying Spatial Pattern of Urban Functions in Seoul, Korea  
*Mi-Kyeong Kim, Sangpil Kim, Hong-Gyoo Sohn* 144
25. GIS-Based Railway Route Selection: A Case Study of Kathmandu-Birgunj  
Electric Railway Line  
*Tri Dev Acharya, In Tae Yang, Dong Ha Lee, Kyung Wan Yoo,* 146
26. Design and Implementation of Evaluation System for High Accuracy  
and Intelligent Navigation Data  
*DongBo Wang, He Huang, JiaBin Xu* 150
27. Comprehensive Monitoring for Beijing Tongzhou Dipamkara Stupa, China  
*Jiabin Xu, He Huang, DongBo Wang* 160
28. Assistive Device for Gait Training  
*Jun Nakashima, Y.Ohyama, Takakazu Ishimatsu* 169



**Session-6 (15:10 – 15:40) (Poster Presentation with Coffee Break)**

pages

(Session Chair: Assoc. Prof Huang HE,

*Beijing University of Civil Engineering and Architecture, China)*

29. Analysis of Identification Ability Based on Spatial Resolution of Aerial Image  
*Jeong-Hun Park, Eui-Myoung Kim* 172
30. A Study on Airborne LiDAR Calibration and Operation Techniques for Bathymetric Survey  
*In-tae Yang, Dong-Ha Lee, Moon-seung Shin, Ghung-Cheol Kim* 178
31. The Effects of Landscape Analysis and Simulation of Repairs  
in a Preservation District for Groups of Historic Buildings:  
A Case Study in Kojiro-kuji District of Unzen City, Nagasaki Prefecture  
*Ping Chen, Kazuichi Sugiyama* 191
32. Measurements of Weather and Air Conditioning Energy in Kumamoto City Urban Area  
*Takahito Ueno, Takahiro Tashiro, Tokuhiko Amamoto* 198
33. Personality of small scale school`s children of Nagasaki , Japan  
*Yuki Murata, Moena Matsuyama, Byungdug Jun* 204

**Session-7 (15:40 – 16:55) (Oral Presentation)**

(Session Chair: Prof Takahito UENO, Sojo University, Japan)

34. Human Interface to use Eye-ball Movement  
*T.Dan, R.Okazaki, T.Ishimatsu* 212
35. Analyzing Port Connectivity and Competitiveness among Kaohsiung  
and Southeast Asia Ports  
*Yi-Ping Liang, Ching-Chiao Yang* 216
36. Identifying the Key Success Factors of Taiwan's Maritime Express Services  
*Shang-Min You, Ching-Chiao Yang* 224
37. The Relationships among Perceptions of Corporate Social Responsibility,  
Job Satisfaction and Organizational Commitment  
- A Case of Employees in Taiwan International Ports Corporation-  
*Shu-Chun Lien, Mei-Cih Huang* 235
38. The Policy of Reverse Logistics and Method in Electronic Products Recycling and Reusing  
*Yu Hui Cheng, Yu Wen Xiao, Yu-Hsuan Chen, Yi-Jen, Chen, Hsun-Hui, Tsai* 242

**Closing Address (16:55 – 17:05)**

*Vice Chairman: Prof. Cheng-Di DONG,*

*(National Kaohsiung Marine University, Taiwan)*