

HAEIN SHIN

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RESEARCH INTERESTS

- Morphodynamics and stratigraphic records of autogenic processes in an alluvial fan
- Flume experiment
- Remote sensing and GIS

EDUCATION

Ph.D. in Earth System Science, Yonsei University

Sep. 2019 -

Advisor: Dr. Wonsuck Kim

Ph.D. Candidate in Astronomy, Space Science and Geology, Chungnam National University

Advisor: Dr. Jaehyung Yu

M.S. in Astronomy, Space Science and Geology, Chungnam National University

Thesis: Remote Sensing Approaches on Moisture Content Mapping for Coastal Sediments (2016)

B.S. in Geology and Earth Environmental Sciences, Chungnam National University

JOURNAL ARTICLES

Haein Shin, Wonsuck Kim, Hyojae Lee, Johnson Joel, and Chris Paola. Fossilized Autogenic Responses of Grain-size Transition to Sediment Supply and Water Discharge: Alluvial Fan Experiment, *Sedimentology* (under review)

Haein Shin, Jaehyung Yu, Lei Wang, Yongsik Jeong, and Jieun Kim. (2020) Spectral Interference of Heavy Metal Contamination on Spectral Signals of Moisture Content for Heavy Metal Contaminated Soils, *IEEE Transactions on Geoscience and Remote Sensing*.

Haein Shin, Jaehyung Yu, Yongsik Jeong, Lei Wang, and Dong-Yoon Yang. (2017). Case-based regression models defining the relations between moisture content and shortwave infrared reflectance of beach sands, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(10), 2017, 4512-4521

Haein Shin, Jaehyung Yu, Jieun Kim, Dongyoon Yang, and Gilljae Lee. (2015). Mapping the moisture content of coastal sediments using ASTER data for spectroscopic and mineralogical analyses: a case study in South Korea, *Remote Sensing Letters*, 6(6), 488-497

Haein Shin, Jaehyung Yu, Sungji Bae, Dongyoon Yang and Min Han. (2016). Analysis of quaternary sedimentary environment based on 3D geological modeling for Saban-ri, Haeri-myeon, Gochang, *Economic and Environmental Geology*, 49(4), 2016, 291-299. (in Korean)

Yongsik Jeong, Jaehyung Yu, Lei Wang, **Haein Shin**, Sang-mo Koh, and Gyesoon Park. (2018). Cost-effective reflectance calibration method for small UAV images, *International Journal of Remote Sensing*, 39(21), 7225-7250.

Jieun Kim, Jaehyung Yu, Lei Wang, Hongxing Li, and **Haein Shin**. (2016). Morphological characteristics of the ice margins of Antarctic ice shelves and outlet glaciers extracted from ICESat Laser altimetry along-track profiles, *Terrestrial, Atmospheric & Oceanic Sciences*, 27(4), 451-462.

CONFERENCE

H Shin, H Lee, and W Kim (2022) Spatiotemporal Evolution of Channel Width in an Alluvial Fan: Tank Experiment: Abstract EP55A-02 presented at 2022 American Geophysical Union Annual Meeting, Chicago, IL & Online Everywhere, 12-16 Dec.

H Shin, W Kim, H Lee, and C Paola (2021) Fossilized Autogenic Response of Grain-Size Transition to Sediment Supply and Water Discharge: Experiments for Alluvial Fans: Abstract EP35D-1344 presented at 2021 American Geophysical Union Annual Meeting, New Orleans, LA & Online Everywhere, 13 – 17 Dec.

H Shin, W Kim, and C Paola (2020) Stratigraphic Signals of Autogenic Processes in a Bimodal Alluvial fan: Laboratory Experiments. 2020 American Geophysical Union Annual Meeting, Online Everywhere, 7 – 11 Dec.

W Kim, E Reaves, and **H Shin** (2019) Linking delta shoreline and foreset-bottomset transition trajectories: Experiment and theory. AGU Fall Meeting 2019

H Shin, J Yu, JH Shin, Y Jeong, S Kim and G Lee (2017) Spectral response of romaine lettuce by uptake of ZN. IGARSS 2017

RESEARCH EXPERIENCE

CHUNGNAM NATIONAL UNIVERSITY in REMOTE SENSING & GIS LAB
Full-time Student Researcher (Remote Sensing and GIS analyst)

Daejeon, South Korea
May 2013 – Nov. 2018

- **Natural hazard monitoring based on remote sensing and GIS**
Designated as a project member for natural hazard monitoring projects; monitoring coastal processes, exploring mineral resources, and observing heavy metal contamination and mine reclamation
- **3-D geological modeling**
Designated as a project member for 3D geological modeling projects; 3D modeling in REE minerals zones in Turkey, mineralized zone in Mongolia and North Korea

TEACHING EXPERIENCE

YONSEI UNIVERSITY

Seoul, South Korea

Sedimentary Environments (ESS4133-01)
Sedimentary Petrology (ESS3102-01)

2019 Fall
2020 Spring

CHUNGNAM NATIONAL UNIVERSITY

Daejeon, South Korea

Resources Geology (21955-00) & Ore Deposit Geology (12474-00)
Remote Sensing (21951-00) & GIS (29079-00)

2016 Spring, 2013 Fall
2014 Spring, 2015 Fall

AWARDS & CERTIFICATES

Ultralight Flying Device (Drone) Pilot 2021
Best Poster Presentation Award, the Korea Association for Quaternary Research 2017
Best Oral Presentation Award, the Korean Society of Economic and Environmental Geology 2016
2nd Prize, COREA (Campus Ore Reserve Estimation Arena), Korea Resources Corporation 2015
Korean Government Certificate of Engineer Applied Geologist 2015

FUNDING

Korean Science and Engineering Female Graduate Students training program 2022.12~2023.02
International Competitiveness Enhancement Program, Yonsei University (USD 4000) 2022
Yonsei Junior Convergence Research, Group: Droner (USD 2700) 2021
POSCO International Industry-Academic Scholarship Student 2021

RESEARCH SKILLS AND SOFTWARE

Research Skills

- Spectral Analysis apparatus:
Analytical Spectral Device
Labspec 5100 portable spectrometer
- X-ray diffraction (XRD), and
X-ray fluorescence (XRF)

Software

- Spectral Analysis Software: the Spectral Geologist 7.5 (TSG 7.5)
- GIS Software: ArcGIS
- Image Processing Software: ENVI
- Geological Modeling Software: SKUA-GOCAD
- Programming Language: MATLAB
- Statistical Software: SPSS and R program