

# Jong Gil Park

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## Education

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|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 2021.01 ~ Present | <b>Ph.D. in Earth Science</b><br><b>Dissertation Advisor:</b> Helge M. Gonnermann<br><b>Committee:</b> Melodie French, Jonathan Ajo-Franklin, Sibani Lisa Biswal | Rice University, Houston, TX, USA           |
| 2017.03 ~ 2019.08 | <b>M.S. in Geological Science</b><br><b>Dissertation Advisor:</b> Weon Shik Han                                                                                  | Yonsei University, Seoul, Republic of Korea |
| 2011.03 ~ 2017.02 | <b>Bachelor of Science</b>                                                                                                                                       | Yonsei University, Seoul, Republic of Korea |

## Research Interests

Physical volcanology; magma ascent, vesiculation, and fragmentation; eruption dynamics; volcanic and hydrothermal fluid flow; porous media; numerical modeling

## Publications

1. **Park, J.G.**, Gonnermann, H.M., High bubble number densities in Plinian pyroclasts are a necessary condition for magma fragmentation, *Earth and Planetary Science Letters* (*in review*).
2. Ryan, A., Ferrante, G., **Park, J.G.**, Michalsky, G., French, M., Gonnermann, H.M., Rheologic controls on the magnitude and mechanisms of outgassing in silicic lavas, *Geology* (*in review*).
3. Yang, W., Han, W.S., Kim, T., **Park, J.G.**, Kim, K.-Y., Shinn, Y.J., (2024). Fracture Morphology Influencing Supersonic CO<sub>2</sub> Transport: Application in Geologic CO<sub>2</sub> Sequestration. *Journal of Geophysical Research: Solid Earth*, 129(2).
4. **Park, J.G.**, Han, W.S., Choung, S., Hwang, J., Kim, Y.-T., Yun, T.K., (2020). Evaluation of Optimal Size of Illite Adsorbent for <sup>137</sup>Cs Removal in Contaminated Artificial Lake. *Journal of Environmental Management*, 269 110739.
5. Piao, J., Han, W.S., Kang, P.K., Min, B., Kim, K.-Y., Han, G., **Park, J.G.**, (2020). A Hybrid Optimization Methodology for Identifying Optimal Operating Conditions for Carbon Dioxide Injection in Geologic Carbon Sequestration. *International Journal of Greenhouse Gas Control*, 98.103067 (2020).
6. **Park, J.G.**, Han, W.S., Han, G., Piao, J., Park, E., Kwon, S., (2019). Characterization of Choked Conditions under Subsonic to Supersonic Flow in Single-Phase (Supercritical to Gaseous CO<sub>2</sub> or Liquid H<sub>2</sub>O) and Multiphase (CO<sub>2</sub> and H<sub>2</sub>O) Transport. *Journal of Geophysical Research: Solid Earth*, 124(4), 3570-3587.
7. Han, G., Han, W.S., Kim, K.-Y., **Park, J.G.**, Piao, J., Yun, T.K., (2019). Roles of Fault Structures and Regional Formations on CO<sub>2</sub> Migration and Distribution in Shallow Saline Aquifer in Green River, Utah. *Journal of Hydrology*, 570, 786-801.

## Key Presentations

1. **Park, J.G.**, Gonnermann, H.M., 2026, What controls the explosive-to-effusive transition in the 2011-2012 Cordón Caulle eruption, JpGU-AGU Joint Meeting, Chiba, Japan, May 24 – May 29.
2. **Park, J.G.**, Gonnermann, H.M., 2025, Vesicle evolution during rhyolitic Plinian eruptions, IAVCEI Scientific Assembly, Geneva, Switzerland, June 29 – July 4.

3. **Park, J.G.**, Hajimirza, S., Gonnermann, H.M., 2023, Plinian eruption model constrained by vesicle size distribution, IAVCEI Scientific Assembly, Rotorua, New Zealand. January 30 – February 3.
4. **Park, J.G.**, Hajimirza, S., Gonnermann, H.M., 2021, Excess volatiles during Plinian eruptions, *2021 American Geophysical Union Fall Meeting*, American Geophysical Union, San Francisco, USA. December 9-13.
5. **Park, J.G.**, Han, W.S., Kim, K.-Y., Park, E., 2019. Numerical Simulation of Choked Flow in Old Faithful Geyser, Yellowstone, *2019 American Geophysical Union Fall Meeting*, American Geophysical Union, San Francisco, USA. December 9-13.
6. **Park, J.G.**, Han, W.S., 2018. Characterization of Choked Flow under Subsonic to Supersonic CO<sub>2</sub> Transport in Geological Micro-Fracture, *2018 American Geophysical Union Fall Meeting*, American Geophysical Union, Washington D.C., USA. December 10-14.
7. **Park, J.G.**, Han, W.S., 2018. Numerical Simulations of Shock Wave Generation in Micro-fractures during CO<sub>2</sub> Injection, *The 45<sup>th</sup> IAH Congress*, The International Association of Hydrogeologists, Daejeon, Republic of Korea, 9-14, September.

## Software Skills

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MATLAB, ANSYS Fluent, COMSOL Multiphysics

## Teaching

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|--------------------|---------------------------------------------------------------------------------------|
| <i>Fall 2026</i>   | <i>Seminars: Current research in EEPS/Department research (Graduate courses)</i>      |
| <i>Fall 2021</i>   | <i>Earth System Modeling: Numerical Techniques and Applications (Graduate course)</i> |
| <i>Fall 2018</i>   | <i>Environmental Earth Science and Labs (Undergraduate course)</i>                    |
| <i>Spring 2018</i> | <i>Groundwater Flow and Transport (Undergraduate course)</i>                          |
| <i>Spring 2017</i> | <i>Introduction to Earth System Sciences (Undergraduate course)</i>                   |

## Fieldwork and workshops

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|--------------------------|--------------------------------------------------------------------------|
| <i>2025.05</i>           | <i>Bubble nucleation workshop, Lehigh University, Bethlehem, PA, USA</i> |
| <i>2024.01 ~ 2024.02</i> | <i>Field Campaign in Cordón-Caulle, Chile</i>                            |
| <i>2023.07</i>           | <i>IMPROVE workshop at Mt. Etna, Italy</i>                               |

## Scholarships and Awards

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|--------------------------|---------------------------------------------------------------------------------------------------|
| <i>2023</i>              | <i>KIA scholarship</i> (Korean American Scholarship Foundation)                                   |
| <i>2022</i>              | <i>Alison Henning Teaching Awards in Earth Science</i> (Rice University)                          |
| <i>2017.03 ~ 2017.08</i> | <i>Brain Korea 21 Plus Scholarship</i> (National Research Foundation; NRF)                        |
| <i>2013.03 ~ 2017.02</i> | <i>The National Scholarship for Science and Engineering</i> (Korea Student Aid Foundation, KOSAF) |
| <i>2011.09 ~ 2012.08</i> | <i>University Designated Scholarship and Internal Scholarship</i> (Yonsei University)             |
| <i>2011.09 ~ 2012.12</i> | <i>Hongsan Scholarship</i> (Hongsan Student Aid Foundation)                                       |