

RESEARCHER CURRICULUM VITAE

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PERSONAL INFO

Date of birth	May 10th, 1986
Place of birth	Thanh Hoa Province, Vietnam
Nationality	Vietnamese
Marital status	Single

EDUCATION

2020	Ph.D. in Energy and Mineral Resources Engineering Dong – A University, Busan, S. Korea
2004	Bachelor of Mining Engineering University of Mining and Geology, Hanoi, Vietnam

RESEARCH INTEREST

- Mine technology and environment engineering.
- Study on the selection of the best solutions for the problems in the mining process to increase economic efficiency and environmental protection.
- Study on the advanced solutions for ensuring the safety and efficiency in mining to control the serious risks in mines such as mine fire, and blasting toxics gas.
- Application of Computational Fluid Dynamics to simulate the problems in the mining process to improve the environmental protection efficiency as well as economic.

WORKING AND RESEARCH PROGRESS IN BRIEF

- 2009.09 – 2014.08: Researcher of Opencast Mining Technology Research Department, Institute of Mining Science and Technology, Vietnam National Coal-Mineral Industries Holding Corporation Limited, Hanoi, Vietnam.
- 2014.09 – 09.2020: PhD Student, Dong-A University, Busan, Korea.
- 9.2020 – 9.2021: Postdoctoral researcher at Dong-A University, Busan, Korea.
- 10.2021 – Present: Postdoctoral researcher at Korea Institute of Geoscience and Mineral Resources (KIGAM)

RESEARCH EXPERIMENT

Laboratory and Field tests

- Performed all basic laboratory tests (e.g., tests for real-time dust, size-selective duct monitor/ samples, gases monitors, 3-D atmosphere monitors).
- Performed some advanced simulation models for atmospheric dispersion and CFD analysis
- Performed common atmospheric monitor tests (e.g., dust, gases, velocity...)

PROJECT EXPERIENCE

- 2020 – Now: Demonstration of mini-pilot extraction of rare earth metals from fly ash
- 2019-2022: Research and demonstration of carbonates production and high value-added/appropriate/package/engineering technology utilizing low-concentration CO₂
- 2018-2020: Development of a smart ventilation system for mine based on ICT/IoT and field demonstration
- 2018-2020: Developing the air quality control and monitor system for open-pit mines in Vietnam
- 2017-2019: Research on the development of ventilation control technology for the backfilling area in a large-opening underground mine
- 2017: Development of fire control technology in Korean underground non-metal mines
- 2016: Study on the low-cost economical environmental control technologies in large-opening limestone mines
- 2016: Development of respirable mine dust control technology
- 2014: Study of underground crushing plant and environmental monitoring system for eco-friendly sustainable mine development

- 2017.03 - 2017.12: Development of fire control technology in Korean underground non-metal mines
- 2013.06 -2017.09: Study on the low-cost economical environmental control technologies in large-opening limestone mines
- 2016.04 – 2016.12: Development of respirable mine dust control technology
- 2011.07 – 2014.06: Study of underground crushing plant and environmental monitoring system for eco-friendly sustainable mine development

CHARACTER & SKILLS

Character

- Humble but open and sociable
- Hard-working and highly independent in work
- Patient and creative under high pressure conditions

Language

- Vietnamese – Mother tongue
- English – Fluent
- Korean – Elementary

Skills

- Using Fluent Ansys, Tecplot, and Solvent Applications for CFD analysis. I have a basic knowledge of the CFD analysis in terms of environmental aspects.
- Competent in using Autocad, Microsoft Office programs
- Writing the scientific paper based on the experimental and numerical results.

PUBLICATIONS

Journal papers

Van-Duc Nguyen, Chang-Woo Lee, Xuan-Nam Bui, Pham Van Chung, Quang-Tuan Lai, Hoang Nguyen, Tran Thi Huong Hue, Van-Trieu Do, Ji-Whan Ahn (2022). Technological Solutions for Fly Ash and Red Mud Upcycling Approach the Vietnam’s Government Target of Net-Zero Carbon by 2050, *GTER 2022: Advances in Geospatial Technology in Mining and Earth Sciences*, Springer.

Nguyen, V. D., Lee, C. W., Bui, X. N., Nguyen, H., Tran, Q. H., Long, N. Q., ... & Nguyen, N. B., 2020. Evaluating the Air Flow and Gas Dispersion Behavior in a Deep Open-Pit Mine

- Based on Monitoring and CFD Analysis: A Case Study at the Coc Sau Open-Pit Coal Mine (Vietnam). *In Proceedings of the International Conference on Innovations for Sustainable and Responsible Mining* (pp. 224-244). Springer, Cham.
- Lee, Chang-Woo; **Nguyen, Van-Duc.**, 2020. An Experimental Study on the Turbulent Diffusion Coefficients in Large-Opening Multi-level Limestone Mines. *In: Proceedings of the International Conference on Innovations for Sustainable and Responsible Mining*. Springer, Cham. p. 263-282.
- Heo, W. H., Kim, J. H., **Nguyen, V. D.**, Tran, Q. H., Nguyen, H., Bui, X. N., & Lee, C. W., 2020. Development of a Blasting Vibration Monitoring System Based on Tri-axial Acceleration Sensor for Wireless Mesh Network Monitoring. *In Proceedings of the International Conference on Innovations for Sustainable and Responsible Mining* (pp. 187-202). Springer, Cham.
- Tran, Q. H., Nguyen, H., Bui, X. N., Drebenstedt, C., Arnoldovich, B. V., Atrushkevich, V., & **Nguyen, V. D.**, 2020. Evaluating the Effect of Meteorological Conditions on Blast-Induced Air Over-Pressure in Open Pit Coal Mines. *In Proceedings of the International Conference on Innovations for Sustainable and Responsible Mining* (pp. 170-186). Springer, Cham.
- Nguyen, V. D.**, Heo, W. H., Kubuya, R., **Lee, C. W.**, 2019. Pressurization Ventilation Technique for Controlling Gas Leakage and Dispersion at Backfilled Working Faces in Large-Opening Underground Mines: CFD Analysis and Experimental Tests. *Sustainability*, Vol 11(12), 3313.
- Nguyen, V.**, and Lee, C. (2019). Optimization of the Unducted Auxiliary Ventilation for Large-Opening Underground Limestone Mines. *Tunnel and Underground Space*, Vol 29 (6): 480-507.
- Nguyen, V.**, Lee, C., 2018. A Study on the Ventilation Schemes for Gas Leakage and Dispersion Controlling at the Backfilled Working Face in Large-Opening Underground Mine. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol 28(4), pp. 372-386.

- Nguyen, V.**, Kim, D., Hur, W., **Lee, C.**, 2018. Experimental and CFD study on the exhaust efficiency of a smoke control fan in blind entry development sites. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol 28(1), pp. 38-58.
- Lee, C. W., **Nguyen, V. D.**, 2017. A study on the optimal installation of ducted fan ventilation system in long mine airways – focused on the wall separation distance and the gap length between ducts. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol. 27 (1), pp. 12-25.
- Lee, C. W., **Nguyen, V. D.**, 2017. A study on the optimal installation of ducted fan ventilation system in long mine airways – focused on the wall separation distance and the gap length between ducts. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol. 27 (1), pp. 12-25.
- Lee, C. W., **Nguyen, V. D.**, 2016. A study on the fire propagation characteristics in large opening multi-level limestone mines in Korea. *Geosystem Engineering*, Vol. 19(6), pp. 317- 336.
- Lee, C. W., **Nguyen, V.D.**, 2015. Development of a Low-Pressure Auxiliary Fan for Local Large-opening Limestone Mines. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol. 25(6), pp. 543-555.
- Lee, C. W., **Nguyen, V. D.**, 2014. Venturi Effects Induced by the Local Ventilation Fan in Large Opening Room-and-Pillar Mining Sites. *Journal of Korean Society for Rock Mechanics, Tunnel and Underground Space*, Vol. 24(6), pp. 464-472.

REFERENCES

Further information can be obtained from the following references:

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