

Young Jin Shin, Ph.D., P.E., MBA

Team Leader, R&D division, Hyundai Engineering & Construction

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Google Scholar: [Young Jin Shin – Google Scholar](#)



Profile

Internationally experienced tunneling and geotechnical engineering specialist with 25 years of expertise across Korea, USA, India, UAE, and Saudi Arabia. Skilled in mechanized tunneling (TBM, Roadheader), Drill & Blast (D&B), and Cut & Cover (C&C) methods, with a proven track record in metro, road, and hydro infrastructure projects. Strong background in leadership and academic contributions, combining theoretical insight with practical problem-solving to deliver innovative, cost-effective, and sustainable solutions. Respected for collaborative leadership, clear communication, and the ability to guide multidisciplinary teams toward successful project outcomes.

Education

- **MBA**, Hult International Business School, USA, 2013
- **Ph.D. in Geotechnical Engineering**, Korea University, 2007
- **M.S. in Geotechnical Engineering**, Korea University, 2003
- **B.S. in Civil & Environmental Engineering**, Korea University, 2000

Certifications & Memberships:

- **Professional Engineer (PE)**, Civil Engineering, USA
- **Chartered Engineer**, Korea
- **Director**, Korean Tunneling Association (KTA), Korean Geotechnical Society (KGS), Korean Society of Explosive and Blasting Engineering (KSEE)
- **Member**, Institution of Civil Engineers (ICE), Korean Society of Civil Engineers (KSCE)

Publications & Patents

- **40+ peer-reviewed journal papers** (including **19 SCI-indexed** papers).
- **12 patents** in tunneling and geotechnical technologies.
- Co-author of *Underground Structures of Korea*.
- 40+ international and domestic conference presentations

Lectures

- Keynote & invited speaker at institutions and conferences in Korea, Vietnam, Saudi Arabia, USA

Awards

- Best Ph.D. Thesis (Chungang Medal), Korean Tunneling Association, 2009

- Best Technical Paper Award, KTA, 2022
- Technical Excellence Award, KTA, 2023
- Ministerial Commendation, Ministry of Land, Infrastructure and Transport, Korea, 2023

Research Interests

- TBM and mechanized tunneling performance
- Nuclear waste repository engineering
- AI and data analytics in tunneling
- Underground development

Professional Experience

Hyundai Engineering & Construction | Seoul, Korea

Team Leader/Senior Researcher, R&D Division (2024–Present)

- Led government-funded R&D initiatives on **nuclear waste repository** design and tunneling innovations.
- Developed **3D digital mapping** program using LIDAR for underground space
- Conducted full-scale tunneling research at Mabuk URL (Underground Research Lab)

Senior Researcher, R&D Division (2021–2024)

- Spearhead tunneling research projects, including TBM, Roadheader, and D&B methodologies.
- Provide expert consultation on major projects, including **Geomdan Railway (7m EPB TBM, Roadheader)** and **Gimpo-Paju Road (14m Slurry TBM, the largest in Korea)**.
- Drive the adoption of cutting-edge technologies, such as **autonomous TBM, Geo BIM, and AI-driven tunneling solutions**.

Tunnel Manager, Daegok-Sosa Railway Project (2019–2021)

- Managed daily operations and technical oversight for **2.7km-long twin EPB TBM tunnels (8.1m diameter) beneath the Han River**.
- Led stakeholder engagement, resolving complex operational and technical challenges with clients, engineers, and contractors.

Senior Researcher, R&D Division (2017–2018)

- Led TBM design and construction strategies, optimizing efficiency and cost-effectiveness.
- Conducted pioneering research in collaboration with **Norwegian University of Science and Technology (NTNU)**, resulting in the development of **Soil Abrasion and Penetration Test (SAPT)**.
- Contributed to the advancement of **Subsea Tunneling** through government-funded projects and patent innovations.

Samsung C&T Corporation

Package Manager, Riyadh Metro Line 4, Saudi Arabia (2015–2017)

- Managed a **10km underground Cut & Cover tunnel and at-grade structures**.
- Led project planning, execution, and stakeholder coordination, ensuring seamless integration of design and construction.

Design Manager, Deep Tunnel Sewer T-01, Abu Dhabi, UAE (2011–2015)

- Directed design and technical operations for **16.1km of 5.2m-diameter sewer TBM tunnels, 25m–40m deep**.
- Developed innovative temporary and permanent design solutions, optimizing construction methodologies.
- Earned an **MBA from Hult International Business School** during tenure.

Design Manager, Delhi Metro 3, BC-45, India (2010)

- Led design optimization and risk assessment for tendering phase, securing a successful bid for the Abu Dhabi Deep Sewer Tunnel project.

Senior Geotechnical/Tunnel Engineer, Civil Engineering Team, Korea (2008–2010)

- Supervised TBM tunnel construction and developed innovative technical solutions.
- Achieved **Professional Engineer (PE) certification in Civil Engineering (Oregon, USA)**.
- Received the **2009 Chungang Medal (Best Paper Award) from the Korean Tunneling Association**.

Purdue University & Indiana Department of Transportation (INDOT), USA

Research Associate (2007–2008)

- Led geotechnical investigations using **Cone Penetration Test (CPT) and Triaxial Compressive Tests**.
- Secured funding from **Joint Transportation Research Program (JTRP) and National Research Foundation of Korea (NRF)**.

Korea University

Research Assistant (2000–2007)

- Conducted pioneering research on groundwater behavior in tunneling, leading to **two patented waterproofing technologies**.
- Developed a **Tunnel Convergence Confinement Method with Seepage Consideration**, contributing to industry standards.

Publications (Technical Paper)

1. In-Mo Lee, Kyeong-Han Jeong, Jun-Suk Lee, Jin-Yu Choi and **Young Jin Shin** (2002), “Seismic evaluation of masonry railroad tunnels”, Journal of Korean Tunnel and Underground Technology, Vol. 4, No. 4, pp. 319~332.

2. In-Mo Lee, Seung-Youl Yoo, Seok-Woo Nam and **Young Jin Shin** (2005), “Convergence-confinement method of a tunnel with the consideration of seepage forces”, Journal of Korean Tunnel and Underground Technology, Vol. 7, No. 3, pp. 187~195.
3. **Young Jin Shin**, Byoung-Min Kim, Jong-Ho Shin and In-Mo Lee (2007), “The ground reaction curve of underwater tunnels considering seepage forces”, Journal of Korean Tunnel and Underground Technology, Vol. 7, No. 3, pp. 187~195.
4. **Young Jin Shin**, Byoung-Min Kim, Jong-Ho Shin and In-Mo Lee, (2010), “The Ground Reaction Curve of Underwater Tunnels with Consideration of Seepage Forces”, Tunneling and Underground Space Technology, Vol. 25, No. 4, pp. 315~324. - **SCI**
5. Jong-Ho Shin, In-Mo Lee and **Young Jin Shin**, (2011), “Elasto-plastic Seepage-induced Stresses due to tunneling”, International Journal for Numerical and Analytical Methods in Geomechanics, Vol. 35, pp. 1432~1450. - **SCI**
6. **Young Jin Shin** and Dae-Hyeon Kim (2011), “Assessment of undrained shear strength based on Cone Penetration Test (CPT) for clayey soils”, KSCE Journal of Civil Engineering, Vol. 15, No. 7. pp. 1161-1166. - **SCI**
7. Jong-Ho Shin, Taek-Su Nam, Jae-ung Yoon and **Young Jin Shin** (2011), “Hydraulic significance of fractured zones in subsea tunnels”, Journal of Marine Georesources and Geotechnology, Vol. 29, pp. 230-247. (**Corresponding Author**) - **SCI**
8. **Young Jin Shin**, Ki-Il Song, In-Mo Lee and Gye-Chun Cho (2011), “Interaction between tunnel supports and ground convergence—Consideration of seepage forces”, International Journal of Rock Mechanics and Mining Sciences, Vol. 48, No. 3, pp. 394~405. - **SCI**
9. Kang-Hyun Lee, In-Mo Lee and **Young Jin Shin** (2012), “Brittle Rock Property and Damage Index Assessment for Predicting Brittle Failure in Excavations”, Rock Mechanics and Rock Engineering, Vol. 45, pp. 251-257. (**Corresponding Author**) - **SCI**
10. **Young Jin Shin**, Do-Hoon Kim and In-Mo Lee (2013), “Numerical simulation of seepage-induced behavior of tunnel for analyzing deformation characteristic and estimating geotechnical parameters”, KSCE Journal of Civil Engineering, Vol 18, pp.659-671. - **SCI**
11. Kang-Hyun Lee, Jun-Ho Bang, In-Mo Lee and **Young Jin Shin** (2013), “Use of Fuzzy Probability Theory to Assess Spalling Occurrence in Underground Openings”, International Journal of Rock Mechanics and Mining Sciences, Vol. 64, pp. 60-67. (**Corresponding Author**) - **SCI**
12. **Young Jin Shin** and Dae-Hyeon Kim (2014), “SPT-CPT Correlation for Cohesive Soils in Indiana”, Transportation Research Board 93rd Annual Meeting Transportation Research Board.
13. J.E. Colmenares, So-Ra Kang, **Young Jin Shin** and Jong-Ho Shin (2014), “Ultimate Bearing Capacity of Conical Shell Foundations”, Structural Engineering and Mechanics, Vol. 52, No. 3, pp. 507~523. - **SCI**

14. Jin-Ho Park, Kang-Hyun Lee, **Young Jin Shin** and In-Mo Lee (2014), “Predicting Ground Condition ahead of Tunnel Face utilizing Electivity Resistivity applicable to Shield TBM”, Journal of Korean Tunnel and Underground Technology, Vol. 16, No. 6, pp. 599~614.
15. Dae-Young Kim, Han-Byul Kang, **Young Jin Shin**, Jae-Hoon Jung and Jae-Won Lee (2018), “Development of testing apparatus and fundamental study for performance and cutting tool wear of EPB TBM in soft ground”, Journal of Korean Tunnel and Underground Technology, Vol. 20, No. 2, pp. 453~467.
16. Dae-Young Kim, **Young Jin Shin**, Jae-Hoon Jung and Han-Byul Kang (2018), “Case Study: Application of NAT (New Abrasion Tester) for Predicting TBM Disc Cutter Wear and Comparison with Conventional Methods”, Journal of Korean Tunnel and Underground Technology, Vol. 20, No. 6, pp. 1091~1104. **(Corresponding Author)**
17. Hyo-Beom Lee, Da-Han Shin, Dae-Young Kim, **Young Jin Shin** and Hang-Seok Choi (2019), “Study on EPB TBM performance by conducting lab-scaled excavation tests with different foam injection for artificial sand”, Journal of Korean Tunnel and Underground Technology, Vol. 21, No. 4, pp. 545~560.
18. Kang-Hyun Lee, In-Mo Lee, **Young Jin Shin** (2020), “Quantitative Assessment of Depth and Extent of Notch Brittle Failure in Deep Tunnelling using Inferential Statistical Analysis”, Geomechanics and Engineering, Vol. 21, No. 2, pp. 201~206. **(Corresponding Author) - SCI**
19. Sung-Wook Kang, Jae-Hoon Chang, Jae-Won Lee, Dae-Young Kim and **Young Jin Shin** (2021), “Pre-grouting for CHI for EPB shield TBM in difficult grounds: a case study of Daegok-Sosa railway tunnel”, Journal of Korean Tunnel and Underground Technology, Vol. 23, No. 5, pp. 281~302. **(Corresponding Author)**
20. Jae-Won Lee, Sung-Wook Kang, Jae-Hoon Chang, Han-Byul Kang and **Young Jin Shin** (2022), “Case Study of Design and Construction of Cutter Change in EPB TBM Tunneling”, Journal of Korean Tunnel and Underground Technology, Vol. 24, No. 6, pp. 553~581. **(Corresponding Author)**
21. Juhui Yim, Ki-Bok Min, Hoyoung Jeong, Sangki Kwon and **Young Jin Shin** (2022), “Review on the Measurement of Thermal Properties of Rocks for Deep Geological Disposal of Spent Nuclear Fuel”, Journal of the Korean Society of Mineral and Energy Resources Engineers, Vol. 59, No. 6, pp. 717~734. **(Corresponding Author)**
22. Hoyoung Jeong, Juhui Yim, Ki-Bok Min, Sangki Kwon, Seungbeom Choi, **Young Jin Shin** (2022), “Case Studies of Indirect Coupled Behavior of Rock for Deep Geological Disposal of Spent Nuclear Fuel”, Journal of Korean Tunnel and Underground Technology, Vol. 32, No. 6, pp. 411~434.
23. Kang-hyun Kim, Young-hoon Jung, **Young Jin Shin**, and Jong-ho Shin (2023), “Optimizing the drainage system of subsea tunnels using the PSO algorithm”, Journal of Marine Georesources and Geotechnology, Online published - **SCI**
24. Han-Byul Kang, Sung-Wook Kang, Jae-Hoon Jung, Jae-Won Lee and **Young Jin Shin** (2023), “Case Study on Soil Conditioning for EPB Tunneling and Troubleshooting in Various Grounds”, Journal of Korean Tunnel and Underground Technology, Vol. 25, No. 2, pp. 65~85. **(Corresponding Author)**

25. Jae Hoon Jung, Ju Hyi Yim, Jae Won Lee, HanByul Kang, Do Hoon Kim and **Young Jin Shin** (2023), “Development of roadheader performance prediction model and review of machine specification”, Journal of Korean Tunnel and Underground Technology, Vol. 25, No. 3, pp. 221-243. **(Corresponding Author)**
26. Juhyi Yim, Jae Hoon Jung, Seokwon Jeon, Ki-Il Song and **Young Jin Shin** (2023), “Case Study of Deep Disposal Facility Design for Spent Nuclear Fuel”, Tunnel and Underground Space, Vol. 33, No. 5, pp. 312~338. **(Corresponding Author)**
27. Hyobum Lee, Jaehyun Oh, **Young Jin Shin** and Jongmuk Won (2023), “Laboratory investigation on excavation performance of foam-conditioned weathered granite soil for EPB shield tunneling”, KSCE Journal of Civil Engineering. Vol. 27, No. 12, pp. 5460-5469- **SCI**
28. Jeonghun Yang, **Young Jin Shin** and Hangseok Choi (2023), “Numerical Analysis for Computing Beam-Spring and Continuum Model for Buried Pipes Considering Soil-pipe Interaction”, Journal of the Korean Geo-Environmental Society, Vol. 24, No. 9, pp. 15-24.
29. **Young Jin Shin**, Ebrahim Farrokh, Jaehoon Jung, Jaewon Lee and Hanbyul Kang (2024), “A study of rotary cutting machine (RCM) performance on Korean Granite”, Engineering Computations, Vol. 41, No. 1, pp. 155~182 - **SCI**
30. **Young Jin Shin**, Kibeom Kwon, Abraham Bae, Hangseok Choi and Dongku Kim, (2024), “Machine learning-based prediction model for disc cutter life in TBM excavation through hard rock formations”, Tunneling and Underground Space Technology, Vol. 150, 105826 – **SCI**
31. Kibeom Kwon, Hangseok Choi, Jaehoon Jung, Dongku Kim and **Young Jin Shin**, (2024), “Prediction of abnormal wear of disc cutter by incorporating synthetic minority oversampling technique and machine learning algorithm”, Journal of Rock Mechanics and Geotechnical Engineering - **(Corresponding Author) SCI online published**
32. **Young Jin Shin**, Jae Won Lee, Ju Hyi Yim, Han Byul Kang, Jae Hoon Jung and Jun Kyoung Park, (2024), “Prediction of EPB Tunnelling Performance for Various Grounds in Korea using Discrete Event Simulation”, Geotechnical and Engineering, Vol. 38, No. 5, pp. 467~476- **SCI**
33. Byeonghyun Hwang, Hangseok Choi, Kibeom Kwon, **Young Jin Shin** and Minkyu Kang, (2024), “Prediction models of rock quality designation during TBM tunnel construction using machine learning algorithms”, Geotechnical and Engineering, Vol. 38, No. 5, pp. 507~515- **SCI**
34. Dongku Kim, **Young Jin Shin**, Kibeom Kwon, Chulhee Lee, Dongyu Kim and Hangseok Choi (2024), “Application of machine learning model to predict individual disc cutter wear amount considering the cutter travel distance”, Journal of Korean Tunnel and Underground Technology, Vol. 26, No. 6, pp. 611~622.
35. Han Byul Kang, Jae Won Lee, Juhyi Yim, Byung Chul Ahn and **Young Jin Shin** (2024), “Case study on Slurry Performance according to the recycling of slurry TBM filtrate water with coagulant”, Journal of Korean Tunnel and Underground Technology, Vol. 26, No. 5, pp. 449~461. **(Corresponding Author)**

36. Juhyi Yim, Bong Chul Lee, Jae Hoon Jung, Han Byul Kang, Jae Won Lee and **Young Jin Shin** (2024), “Field Demonstration of Pre-Fracturing for Controlling Noise and Vibration”, *Explosives and Blasting*, Vol. 42, No. 3, pp. 49~57. **(Corresponding Author)**
37. Ji Young Kim, Jae Hoon Jung, Jaewon Lee, Juhyi Yim and **Young Jin Shin** (2024), “Case study of data-based TBM planning – Construction Management System Application”, *Journal of Korean Tunnel and Underground Technology*, Vol. 26, No. 6, pp. 696~711. **(Corresponding Author)**
38. **Young Jin Shin**, Ebrahim Farrokh, Jaehoon Jung and Hanbyul Kang (2025), “Optimizing Tunnel Boring Machine (TBM) Operations in Real Time within Defined Constraints”, *Journal of Construction Engineering and Management*, Vol. 151, No. 6- **SCI**
39. Seokgu Gang, Daewon Lee, Jin-Seop Kim, **Young Jin Shin** and Jongwon Jung (2025), “Development and Evaluation of low-PH concrete plug suitable for high-level radioactive waste repositories”, *Case Studies in Construction Materials*, Vol. 22 - **SCI**
40. Kibeom Kwon, Yuri Yeom, **Young Jin Shin**, Abraham Bae and Hangseok Choi (2025), “Machine Learning Models for Predicting the International Roughness Index of Asphalt Concrete Overlays on Portland Cement Concrete Pavements”, *Computer-Aided Civil and Infrastructure Engineering* - **SCI online published**
41. Kibeom Kwon, Minkyu Kang, **Young Jin Shin**, Byeong Chul Ahn and Hangseok Choi (2025), “An Interpretable frameworks for risk management in TBM excavation using expert elicitation integrated with fuzzy set theory”, *Scientific Reports* - **SCI accepted**

Publications (Conference Paper)

1. Jong-Ho Shin, Myoung-Sup Lee, Seung-Do Lee, **Young Jin Shin** and Tae-Kyeon Kim, (2009), “Monitoring of Cavity Development between Tunnel Lining and Surrounded Ground”, In *Proceedings of the ITA-AITES World Tunnel Congress 2009*, Budapest.
2. Hyung-Il Kim, Jun-Gu Kim, Seung-Bok Lee, Jae-Bum Shim, Yoichi Kitahara and **Young Jin Shin** (2010), “The Design of TBM in Mixed Geologic Condition”, *The 11th International Mechanized Tunneling Symposium*, Seoul.
3. Jae-Suk Oh, Sun-Jae Lee, **Young Jin Shin**, Sung-Hoon Kim and Sang-Hyeok Nam (2012), “Application of BIM Techniques to the Underground Deep Tunnel Sewer Project”, In *Proceedings of the ITA-AITES World Tunnel Congress 2012*, Bangkok.
4. Jack Gahir, **Young Jin Shin** and Jonathan Churchward (2013), “Geotechnical Considerations for the Design and Construction of Shafts on a Deep Tunnel Alignment”, *The 18th Southeast Asian Geotechnical Conference*, Singapore.
5. **Young Jin Shin**, Grahame Bunce, Wille Cannon, Chris Phillips, HYoung Jin Lee and Yong-Hee Kim (2013), “Abu Dhabi STEP project_Design and Construction for T01”, *Arabian Tunnelling Conference & Exhibition*, Dubai.

6. **Young Jin Shin**, Karlo Gino, Young Jin Yoon, and John Janeczek (2017), “Grouting works in adverse ground condition in connection tunnel of Deep Sewer project”, Arabian Tunnelling Conference & Exhibition, Dubai.
7. Dae-Young Kim, Han-Byul Kang, **Young Jin Shin** and Jae-Hoon Jung (2018), “Correlation Analysis of excavation parameter using TBM operation data”, KGS Geotechnical Engineering Conference, Seoul.
8. Dae-Young Kim, Jun-Kyoung Lee, Kil-Je Jung, **Young Jin Shin**, Kyoung-Min Jin and Sang-Rul Bae (2018), “Reinforcement of CIP Wall to change a Procedure of Tunnel Portal”, KGS Geotechnical Engineering Conference, Seoul.
9. Hyo-Bum Lee, Da-Han Shin, Dae-Young Kim, **Young Jin Shin** and Hang-Suk Choi (2018), “Experimental Study on Influence of Foam Injection in EPB Shield TBM”, KGS Geotechnical Engineering Conference, Seoul.
10. Dae-Young Kim, **Young Jin Shin**, Jae-Hoon Jung and Han-Byul Kang (2018), “Development of a test method for the prediction of TBM disc cutter life and application of field site”, Korean Society of Civil Engineer (KSCE) 2018 Convention, Kyungju.
11. **Young Jin Shin**, Dae-Young Kim, Do-Gyoon Kim, and Nguyen Cao Minh (2019), “TBM (Tunnel Boring Machine) tunneling in urban areas by EPB (Earth Pressure Balance): design consideration of Hanoi pilot light metro line” Geotec Hanoi 2019, Hanoi.
12. Dae-Young Kim, Jae-Hoon Jung, **Young Jin Shin**, Han-Byul Kang and Ebrahim Farrokh, (2019), “Hard Rock TBM Cutter Life and Wear Evaluation: Experience of New Abrasion Test (NAT) in Juam Hydro Tunnel”, TBMDigs, Golden.
13. Dae-Young Kim, Han-Byul Kang, **Young Jin Shin**, Jae-Hoon Jung and Ebrahim Farrokh, (2019), “Soil abrasion and penetration test (SAPT) for the evaluation of cutter life of soft ground TBM”, In Proceedings of the ITA-AITES World Tunnel Congress 2019, Naples.
14. Hyo Beom Lee, Da Han Shin, Hang Seok Choi, Dae Young Kim and **Young Jin Shin**, (2019), “Prediction of EPB shield TBM performance using a lab scale excavation test with different soil condition Prediction of EPB shield TBM performance using a lab scale excavation test with different soil conditionss”, In Proceedings of the ITA-AITES World Tunnel Congress 2019, Naples.
15. Dae-Young Kim, Han-Byul Kang, **Young Jin Shin**, Jae-Hoon Jung and Ebrahim Farrokh, (2020), “TBM excavation performance and cutting tool wear prediction in the soft ground soil abrasion and penetration test (SAPT)”, In Proceedings of the ITA-AITES World Tunnel Congress 2020, Kuala Lumpur.
16. Jae-Won Lee, Sung-Wook Kang, Seung-Yong Kim, Dae-Young Kim, **Young Jin Shin** (2021), “Cutter Consumption evaluation according to the TBM excavation of cross the Han River”, Korean Tunneling Association Annual Spring Conference, Seoul
17. **Young Jin Shin**, Sung-Wook Kang, Jae-Won Lee and Dae-Young Kim (2021), “Challenges of EPB TBM in Pressurized Mixed Ground Conditions under Hangang River: Effect of clogging”, International Conference of Tunnel and Underground Space, Seoul

18. Sung-Wook Kang, **Young Jin Shin**, Jae-Won Lee, Seung-Yong Kim, Kil-Lim Park, Sung-Chan Choi, and Sung-Wook Ji (2022), “Evaluation of EPB TBM performance under Han River”, Korean Tunneling Association Annual Spring Conference, Seoul
19. Jae-Hoon Jung, Do-Hoon Kim, **Young Jin Shin**, Hong-Sung Lee and Dae-Young Kim (2022), “A basic study to determine road header and evaluate cutting performance”, Korean Tunneling Association Annual Spring Conference, Seoul
20. Dae-Young Kim, Han-Byul Kang, Hong-Sung Lee, **Young Jin Shin** and Sung-Wook Kang, (2022), “Development of TBM Advanced Driving Assistance System and its field verification”, In Proceedings of the ITA-AITES World Tunnel Congress 2022, Copenhagen.
21. **Young Jin Shin**, Sung-Wook Kang, Sung-Wook Ji, Thorsten Tatzki, Jeremy Lee and Michael Schmelcher, (2022), “Major Refurbishment of EPB TBM in High Abrasive Grounds under Hangang River”, In Proceedings of the ITA-AITES World Tunnel Congress 2022, Copenhagen.
22. **Young Jin Shin**, (2022), “Boreyong Subsea Tunnel using NATM method”, Symposium on Innovation and Challenges in Asian Tunnelling 2022, Singapore.
23. Jae-Won Lee, Han-Byul Kang, Jae-Hoon Jung and **Young Jin Shin** (2022), “Development of Simulation Model for prediction of Shield TBM Construction Schedule”, Korean Society of Civil Engineer (KSCE) 2022 Convention, Busan.
24. Chae-Man Jue, Do-Hak Huh, Kwang-Sue Jue, Jae-Hoon Jung, **Young Jin Shin**, Do-Hoon Kim and Min-Sang Lee (2023), “Preparatory works and Construction Management for Roadheader”, Korean Rock Mechanics Society Annual Spring Conference, Seoul
25. Jae-Won Lee, Han-Byul Kang, Jae-Hoon Jung, Hongsung Lee, Juhyi Lim and **Young Jin Shin** (2023), “Development of Simulation Model for EPB TBM Construction Period”, KGS Geotechnical Engineering Conference, Yeosu.
26. Jae-Hoon Jung, **Young Jin Shin**, Do-Hak Huh, Kwang-Sue Jue, Do-Hoon Kim and Min-Sang Lee (2023), “Verification of Net Cutting Rate Prediction Model Using Rock Strength for Roadheader”, Korean Tunneling Association Annual Spring Conference, Seoul
27. Jae-Won Lee, Han-Byul Kang, Jae-Hoon Jung and **Young Jin Shin**, (2023), “Simulation of EPB tunneling using Discrete Event Model: Case study of various grounds in Korea”, In Proceedings of the ITA-AITES World Tunnel Congress 2023, Athens.
28. **Young Jin Shin**, Jae Won Lee, Ju Hui Yim, Han Byul Kang, Jae Hoon Jung and Jun Kyung Park (2023), “Simulation of EPB Tunnelling for Various Grounds in Korea: A Discrete Event Model Approach”, International Conference of Tunnel and Underground Space, Seoul
29. Han-Byul Kang, Jae-Won Lee, Jae-Hoon Jung, Juhyi Yim and **Young Jin Shin** (2023), “Assessment of Slurry Performance according to the Recycling of Slurry TBM Filtrate Water with Coagulant”, Korean Society of Civil Engineer (KSCE) 2023 Convention, Yeosu.

30. Juhyi Yim, Jae Hoon Jung, Seokwon Jeon, Ki-Il Song and **Young Jin Shin** (2023), “Case Study of Deep Disposal Facility Design for Spent Nuclear Fuel”, Korean Rock Mechanics Society Annual Fall Conference, Seoul
31. Jeonghwan Yoon, Ko Bok Min, Sangki Jwon, Myoun Kyu Song, Tae Young Ko, Seoung Won Lee, Ho Young Jeong, **Young Jin Shin**, Jae Hoon Jung and Juhyi Yim, (2024), “A Review of Excavation Damaged Zone for Rock Mechanics and Rock Engineering”, Japan-Korea Join Symposium on Rock Engineering, Tokyo
32. **Young Jin Shin**, Jae-Won Lee, Han-Byul Kang, Jae-Hoon Jung, Hongsung Lee, Juhyi Lim and (2024), “Simulation of EPB TBM using Discrete Event Model Approach”, KGS Geotechnical Engineering Conference, Jeju.
33. Jae-Won Lee, Jae-Hoon Jung, Han-Byul Kang, Juhyi Yim and **Young Jin Shin**, (2024), “Estimation of Key Performance Indicators (KPIs) of EPB TBM tunnelling”, Korean Tunneling Association Annual Spring Conference, Seoul
34. Dongku Kim, **Young Jin Shin**, Donggyou Kim, Chulhee Lee, Kibeom Kwon and Hangseok Choi (2024), “A Novel Machine-Learning Model for Estimating Disc Cutter Life in TBMs considering Individual Cutter Travel Length”, In Proceedings of the ITA-AITES World Tunnel Congress 2024, Shenzhen.
35. Abraham Bae, **Young Jin Shin**, Yongjoon Choe, Sanwoo Kim and Hangseok Choi (2024), “Bio-polymer sodium application as an eco-friendly additive in slurry TBM excavation”, In Proceedings of the ITA-AITES World Tunnel Congress 2024, Shenzhen.
36. **Young Jin Shin** (2024), “High-Level Waste Construction Techniques to Ensure Repository Safety”, Korean Radioactive Waste Society 2024 Spring Convention, Busan.
37. Han-Byul Kang, Juhyi Yim, Eun Sung Kim, Min Jung Kim and **Young Jin Shin** (2024), “Development Main Parameters of Rock Classification using 3D automated Tunnel Face Mapping”, Korean Society of Civil Engineer (KSCE) 2024 Convention, Jeju.
38. Jae Hoon Jung, Hangseok Choi, Jongwon Jung and **Young Jin Shin** (2024), “Development of Excavation Management System for Slurry TBM in Permeable Mixed Ground Conditions”, International Conference on Geomechanics and Engineering, Seoul
39. **Young Jin Shin**, (2024), “Innovative Technology to overcome Challenges of Large Diameter Tunnelling undercrossing River”, Symposium on Innovation and Challenges in Asian Tunnelling 2024, Singapore.
40. Dongku Kim, **Young Jin Shin**, Kibeom Kwon, Chulhee Lee, Dongyu and Hangseok Choi (2024), “Machine learning-based prediction model for disc cutter life in TBM excavation through hard rock formations”, KGS Geotechnical Engineering Conference, Busan.
41. Juhyi Yim, Han Byul Kang, Jae Hoon Jung and **Young Jin Shin** (2025), “Case Study on the Application of 3D Face Mapping in Tunnel Construction Site”, Korean Rock Mechanics Society Annual Spring Conference, Jeju.

42. Han Byul Kang, Jae Won Lee, Juhyi Yim and **Young Jin Shin**, (2025), “Excavation of Demonstration Disposal Tunnel for EDZ Evaluation”, Korean Tunneling Association Annual Spring Conference, Busan.
43. Juhyi Yim, Jae Hoon Jung, Han Byul Kang, Jae Won Lee, Ji Young Kim and **Young Jin Shin** (2025), “Field-scale Experiment of Pre-fracturing Blast for EDZ Control”, In Proceedings of the ITA-AITES World Tunnel Congress 2025, Stockholm.
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Lectures

1. Keynote Speech at the 4th Engineering Research Forum, 11 April 2017, Prince Sultan University, Riyadh, Saudi Arabia
2. Invited Lecture at Hyundai Contech Conference, 7 August 2018, University of Transport and Communications, Hanoi, Vietnam
3. Invited Lecture at Korea University, 30 November 2020, Seoul, Korea
4. Lecture “Tunneling and Underground Space”, 14~21 November 2022, Korea University, Seoul, Korea
5. Invited Lecture at Far East District US Army Corps of Engineer, 7 December 2022, Pyeongtaek, Korea
6. Invited Lecture at Korean Expressway Corporation Research Institute, 11 May 2023, Seoul, Korea
7. Invited Lecture at Korean Geotechnical Society, 13 June 2023, Seoul, Korea
8. Invited Lecture at Korean Tunneling Association, 13 July 2023, Seoul, Korea

Publications (Book)

1. **Young Jin Shin**, Jong-Ho Shin and In-Mo Lee (2008), “Geotechnical Aspects of Underground Construction in Soft Ground : Geotechnical Aspects of Underground Construction in Soft Ground”, CRC Press
2. **Young Jin Shin**, Byoung-min Kim, Shin-in Han, In-Mo Lee, Daehyeon Kim (2008), “GeoCongress 2008: Geo sustainability and Geo hazard Mitigation: The Ground Reaction Curve Due to Tunnelling under Drainage Condition”, pp. 394~401
3. Korea Tunneling Association (2009), “Underground structures of Korea - Chapter 2.4 Sewer Tunnel”, CIR

Award

1. Best Ph.D. thesis with Chungang Medal, KTA, 2009
2. Best Technical Paper Award, KTA, 2022
3. Technical Excellence Award, KTA, 2023
4. Minister of Land, Infrastructure and Transport Commendation, 2023

Patents

1. A unified waterproofing sheet with prominences, Korea, 2007
2. A method for constructing waterproofing system of tunnel and pipe, Korea, 2008
3. A method for cavity identification of built underground tunnel lining, Korea, 2009
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