

Curriculum Vitae

Name: **Uijeong Ro**
Address: Rm 85583, Research & Business Center, Sungkyunkwan University, 2066, Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do, South Korea, Zip code: 16419
Phone: 82-10-2639-4137
Email: tnvjsrnfl@skku.edu

Education

2022 Feb. **Integrated M.S. and Ph.D.** in Mechanical Engineering,
Sungkyunkwan University
Expected Date of Graduation: Feb. 2023
Advisor: Prof. Moon Ki Kim (mkkim1212@skku.edu)

2018 Feb. **B.S.E.** in Mechanical Engineering, Sungkyunkwan University

Research Interests

- Computational mechanics (Non-linear finite element methods, multi-physics)
- High temperature experiments of super alloys (Creep, fatigue, creep-fatigue, small punch creep test)

Research Experiences

2018-present **Research Assistant**, Sungkyunkwan University,
- Next Generation Lifetime Assessment of High Temperature Materials in Nuclear Power Plants using Small Punch Test (2019-2020, NRF)
- An Advanced Creep-Fatigue Damage Evaluation Method Based on Interrupt Creep Test (2016-2019, NRF)

2016-2017 **Undergraduate Research Assistant**, Sungkyunkwan University,
Material Strength & Computational Bioengineering Lab.
- Advanced Small Punch Creep Test for Direct Creep Life Prediction (2016-2017, KEPCO)

Publications

Journal Articles:

- [3] S. Kim, U. Ro, Y. H. Kim, T. Lee, and M. K. Kim, “Evaluation of Creep Properties Using Small Punch Creep Test for Modified 9Cr-1Mo Steel” *Journal of Mechanical Science and Technology*, 2022, Accept.

- [2] U. Ro[#], S. Kim[#], Y. Kim, and M. K. Kim, “Creep-Fatigue damage analysis of modified 9Cr-1Mo steel based on a Voronoi crystalline model”, *International Journal of Pressure Vessels and Piping*, 194, 104541, 2021.

#: Equally contributed

- [1] J. H. Kim, U. Ro, H. Lee, S. J. Kang, B. H. Lee, and M. K. Kim, “A direct assessment of creep life based on small punch creep test”, *Theoretical and Applied Fracture Mechanics*, 104, 102346, 2019.

Conference Proceedings and Posters:

- [18] S. Kim, U. Ro, Y. H. Kim and M. K. Kim, “Assessment of Creep Properties Using Small Punch Test for Grade 91 Steel”, *The KSME Annual Spring Conference*, May, Busan, 2022.
- [17] U. Ro, S. Kim, T. Lee and M. K. Kim, “Machine learning based parameter-free creep model for 9% Cr steel”, *The KSME Annual Spring Conference*, May, Busan, 2022.
- [16] S. Kim, U. Ro and M. K. Kim, “Creep-Fatigue Interaction Damage Evaluation Using Continuum Damage Model for Modified Grade 91 Steel”, *the ASME 2020 International Mechanical Engineering Virtual Conference*, November, Online, 2020.
- [15] U. Ro, J. H. Kim, S. Kim and M. K. Kim, “A Direct Creep Life Assessment Method for Small Punch Creep Test”, *the ASME 2020 International Mechanical Engineering Virtual Conference*, November, Online, 2020.
- [14] S. Kim, U. Ro and M. K. Kim, “Creep-fatigue Damage Interaction of the Modified 9Cr-1Mo Steel Based on Continuum Damage Mechanics”, *The KSME Annual Spring Conference*, August, Gyeongju, 2020.
- [13] S. Kim, U. Ro, J. H. Kim and M. K. Kim, “Prediction of Long-term Creep Life Using Continuum Damage Model for Grade 91 steel”, *The 7th Asian-Pacific Congress on Computational Mechanics*, December, Taipei, 2019.

- [12] **U. Ro**, J. H. Kim, S. Kim and M. K. Kim, “A Creep-fatigue Damage Diagram of Grade 91 Steel Using an Alternative Two-step Testing Method”, *The 7th Asian-Pacific Congress on Computational Mechanics*, December, Taipei, 2019.
- [11] **U. Ro**[#], S. Kim and M. K. Kim, “Analysis on Creep-Fatigue Damage Interaction of the Modified 9Cr-1Mo Steel Based on Continuum Damage Mechanics”, *International Mechanical Engineering Congress & Exposition*, November, Salt Lake City, 2019.
- [10] J. H. Kim, **U. Ro**, S. Kim and M. K. Kim, “A creep life prediction method of metallic materials based on small punch creep test”, *The 6th Korea Multi-Scale Mechanics Symposium*, July, Seoul, 2019.
- [9] J. H. Kim, **U. Ro** and M. K. Kim, “A Creep Life Evaluation Using Small Punch Creep Test”, *The 5th Korea Multi-Scale Mechanics Symposium*, December, Jeonju, 2018.
- [8] **U. Ro**[#], J. H. Kim and M. K. Kim, “Creep-Fatigue Damage Evaluation of Grade 91 Steel using Continuum Damage Models”, *The 5th Korea Multi-Scale Mechanics Symposium*, December, Jeonju, 2018.
- [7] J. H. Kim, **U. Ro** and M. K. Kim, “A Direct Creep Life Assessment Based on Small Punch Creep Test”, *The KSME Annual Fall Conference*, December, Gangwon, 2018
- [6] J. H. Kim, **U. Ro** and M. K. Kim, “Stress Based Creep Life Evaluation of Super304H Using Small Punch Creep Test”, *13th World Congress on Computational Mechanics*, July, New York City, 2018
- [5] **U. Ro**[#], J. H. Kim, H. Lee, S. J. Kang and M. K. Kim, “Creep-fatigue damage evaluation of Grade 91 steel using interrupt creep fatigue test”, *ASME Pressure Vessels and Piping*, July, Prague, 2018.
- [4] **U. Ro**[#], J. H. Kim, H. Lee, S. J. Kang, H. K. Kim, F. Ibupoto and M. K. Kim, “Creep-fatigue correlation analysis of Grade 91 steel using finite element method”, *The KSME Annual Spring Conference*, April, Yeosu, 2018.
- [3] J. H. Kim, **U. Ro**, H. Lee, S. J. Kang, H. K. Kim and M. K. Kim, “Advanced Creep-Fatigue Damage Evaluation of Grade 91”, *The 4th Multiscale & Multiphysics Mechanics Symposium*, December, Yangpyeong, 2017
- [2] **U. Ro**[#], J. H. Kim, H. Lee, S. J. Kang, H. K. Kim, M. K. Choi and M. K. Kim, “Metal Creep Life Assessment using Stress based Small Punch Creep Test”, *The KSME Annual Fall Conference*, November, Jeju, 2017.

- [1] **U. Ro[#]**, J. H. Kim, J. G. Lim, H. Lee and M. K. Kim, “Creep Life Evaluation using Interrupt Small Punch Creep Test, *The KSME Annual Spring Conference*, May, Busan, 2017.

#: Presenting author

Teaching Experiences

- Design Lab on Solid Mechanics (SKKU) – Fall 2015-2022
- Undergraduate student co-op program (SKKU) – Fall 2015-2021
- Structural Elasticity (SKKU) – Fall 2014-2021
- Solid Mechanics (SKKU) – Fall 2012-2020

Awards and Honors

2019	Best Oral Award, SKKU
2017	Dean's List Award, SKKU
2016	Dean's List Award, SKKU

References

Available upon request

Uijeong Ro is a PhD student in the School of Mechanical Engineering at SKKU. He has been a researcher in Material Strength & Computational Bioengineering Laboratory in SKKU since 2018. His current research is concerned with metal creep and fatigue phenomena. He has worked on high temperature material testing projects with domestic research institution (NRF). His Ph.D. research aims to establish a theoretical model to design creep and fatigue behavior for various high temperature materials and analyze their related lifetimes.