



Curriculum Vitae

Wonkyeong Kim

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AFFILIATION

Combined MSc and Ph.D Program (2nd semester)
Ulsan National Institute of Science & Technology (UNIST)
UNIST-gil 50, Ulsan Metropolitan City, Republic of Korea, 689-798

EDUCATION

Bachelor of Engineering

- Major: Green Energy Engineering
 - 1st track : Nuclear Science & Engineering
 - 2nd track : Energy Conversion & Storage
- UNIST, Ulsan, Korea, 2009.2~2015.8

WORK EXPERIENCE

- Benchmark analysis of ADSR(Accelerator Driven Subcritical Reactor)
 - KUCA A-type core modeling(Kyoto University Critical Assembly)
 - Reactivity calculation(MCNP6)
 - Indium reaction rate calculation(MCNP6)
 - Foil activation(MCNP6 with dosimetry libraries)
- Comparative analysis of DIMPLe benchmark
 - Direct modeling(MCNP6, SERPENT2, CASMO-4E, T-NEWT)
 - Two-step modeling approach(SERPENT,CASMO,T-NEWT/PARCS)
- IAEA CRP HTGR UAM benchmark
 - Reference and test cases modeling (SERPENT, MCNP6, KENO)
 - Uncertainty analysis on HTGR with RPT method
- Spent fuel pool and storage cask criticality analysis
 - USL analysis based on NUREG/CR-6698, 6361 methodologies
- Monte Carlo Depletion
 - Implementation and verification
 - VERA benchmark
- BigData analysis on generic PWR simulator
 - Data generation for 0-100% operation
 - Establishment of operating variables for BigData analysis
- Burnup analysis and uncertainty quantification for Swiss CROCUS reactor
 - Cycle burnup analysis
 - UQ for isotopic inventory with Stochastic Sampling(SS) method

RESEARCH INTERESTS

- Monte Carlo code development
- Hybrid method with MC and MOC
- UQ/SA with SS method

CERTIFICATES

- Awards & Scholarship
 - Full tuition waiver for GPA 3.3 or above (Mar, 2009 ~ Aug, 2015)
- Training
 - FJOH 2017 summer school, Karlsruhe, Germany (Sep, 2017)
 - Advanced MCNP workshop, Daejeon, Korea (Mar, 2017)
 - FJOH 2016 summer school, Aix-en-Provence, France (Aug, 2016)
 - Nuclear Reactor Design: Theory and Practice training, Korea Atomic Energy Research Institute (KAERI, July, 2016)
 - 2016 Falcon Training and Fuel Reliability Workshop, Korea Atomic Energy Research Institute (KAERI, Mar, 2016)
 - PWR simulator training course, Korea Atomic Energy Research Institute (KAERI, June, 2015)
 - Workshop on Methodologies for Spent Nuclear Fuel Pool Simulations, Safety and Security, Virginia Tech Research Center (VTRC, June, 2015)
 - PWR simulator training course, Korea Atomic Energy Research Institute (KAERI, June, 2015)
 - McCARD Developers' Training, Seoul National University (SNU, Mar, 2015)
 - SCALE user training course, Oak Ridge National Laboratory (ORNL, Feb, 2015)
 - MCNP user training course, Han-yang University (HYU, July, 2014)
- Internship
 - Swiss Federal Institute of Technology in Lausanne (EPFL, July 15 ~ Oct 15, 2017)
 - International Atomic Energy Agency (IAEA, July 1 ~ Dec 31, 2015)
 - Undergraduate Research Opportunities Program, University of Illinois at Urbana-Champaign (UIUC, August, 2014)
- Membership
 - Korean Nuclear Society Student Member (September, 2014)

SCI Journal

1. Mi Jin Kim, Wonkyeong Kim, Deokjung Lee, Hee-Jae Lee, Dong-Seong Sohn*, "Development of Gd-bearing Integral-type Spent Fuel Pool Storage Rack", J. Nucl. Sci. Technol., Under review (2017)
2. Jinsu Park, Wonkyeong Kim, Sooyoung Choi, Jiankai Yu, Deokjung Lee*, "Comparative Analysis of VERA Depletion Benchmark through Consistent Code-to-Code Comparison", J. Nucl. Sci. Technol., Under review (2017)
3. Jaerim Jang, Wonkyeong Kim, Sanggeol Jeong, Eun Jung, Jinsu Park, Matthieu Lemaire, Hyunsuk Lee, Deokjung Lee*, "Validation of UNIST

**International
and Topical
Meetings**

- Monte Carlo Code MCS for Criticality Safety Analysis of PWR Spent Fuel Pool and Storage Cask”, *J. Nucl. Sci. Technol.*, Under review (2017)
4. Wonkyeong Kim, Hyun Chul Lee, Cheol Ho Pyeon, Ho Cheol Shin, Deokjung Lee* “Monte Carlo Analysis of the Accelerator-driven System at Kyoto University Research Reactor Institute,” *Nucl. Eng. Tech.*, 48 (2): 304-317. <http://dx.doi.org/10.1016/j.net.2015.12.001> (2016)
 5. Wonkyeong Kim, Jinsu Park, Deokjung lee*, Hyun Chul Lee and Tomasz Kozlowski, “Comparative neutronics analysis of DIMPLe S06 criticality benchmark with contemporary reactor core analysis computer code systems,” *Sci. Technol. Nucl. Ins.*, 2015: 11, <http://dx.doi.org/10.1155/2015/180979> (2015)
 6. Khang Nguyen, Jiwon Choe, Sooyoung Choi, Hyunsuk Lee, Wonkyeong Kim, Deokjung Lee*, Matthieu Lemaire, “Verification of STREAM and MCS against OPR FA depletion calculation”, RPHA17, Chengdu, Sichuan, China, August 24-25 (2017) [Oral Presentation]
 7. Matthieu Lemarire, Hyunsuk Lee, Bamidele Ebiwonjumi, Chidong Kong, Wonkyeong Kim, Yunki Jo, Jinsu Park, Deokjung Lee*, “Recent Work on Photon Transport with UNIST Monte Carlo Code MCS”, RPHA17, Chengdu, Sichuan, China, August 24-25 (2017) [Oral Presentation]
 8. Chidong Kong, Hyunsuk Lee, Matthieu Lemaire, Wonkyeong Kim, Yunki Jo, Jinsu Park, Jiwon Choe, Bamidele Ebiwonjumi, Deokjung Lee*, “Introduction to UNIST Spent Nuclear Fuel Transportation Package Analysis Code System”, RPHA17, Chengdu, Sichuan, China, August 24-25 (2017) [Oral Presentation]
 9. Hyunsuk Lee, Wonkyeong Kim, Peng Zhang, Azamat Khassenov, Jinsu Park, Jiankai Yu, Sooyoung Choi, Hwan Soo Lee and Deokjung Lee*, “Preliminary Simulation Results of BEAVRS Three-dimensional Cycle 1 Wholecore Depletion by UNIST Monte Carlo Code MCS,” M&C2017, Jeju, Korea, April 16-20 (2017) [Oral Presentation]
 10. Wonkyeong Kim, Hyunsuk Lee, Sooyoung Choi, Ji-Eun Jung, and Deokjung Lee*, “Hybrid Depletion Method for the Light Water Reactor analysis,” M&C 2017, Jeju, Korea, April 16-20, 2017
 11. Wonkyeong Kim, Frederik Reitsma, and Deokjung Lee*, “IAEA Coordinated Research Program on HTGR Uncertainty Analysis: Results of Exercise I-1c and I-1d Model and the Application of RPT Method,” *PHYSOR2016*, Sun Valley, ID, USA, May 1-5, 2016
 12. Frederik Reitsma and Wonkyeong Kim, “The Contribution of Cross-Section Uncertainties to Pebble bed reactor Eigenvalues Results: IAEA Cooperative Research Project Phase I Standalone Neutronics,” *PHYSOR2016*, Sun Valley, ID, USA, May 1-5, 2016
 13. Wonkyeong Kim, Deokjung Lee, Cheolho Pyeon “IAEA ADS Benchmark Analysis of KUCA Experiments : Phase I,” *ICAPP 2015*, Nice, France, May 3 - 6, 2015

14. Wonkyeong Kim, Jinsu Park, Deokjung Lee, Tomasz Kozlowski
"Comparative Neutronics Analysis of DIMPLE S06 benchmark,"
Advances in Nuclear Fuel Management V (ANFM 2015), Hilton Head
Island, South Carolina, USA, March 29 - April 1, 2015

International and Domestic Conferences

15. Sanggeol Jeong, Jaerim Jang, Wonkyeong Kim, Azamat Khassenov,
Deokjung Lee*, "Evaluation of NUREG/CR-6361 and NUREG/CR-6698
Methodologies of PWR Spent Fuel Pool and Storage Cask", KNS Spring
Meeting, Jeju, Korea, May 17-19 (2017) [Poster Presentation]

16. Jinsu Park, Wonkyeong Kim, Sooyoung Choi, Hyunsuk Lee, and
Deokjung Lee, "Comparative Analysis of VERA Depletion Problems,"
KNS Fall Meeting, Gyeongju, Korea, October 26-28, 2016

17. Wonkyeong Kim, Frederik Reitsma, and Deokjung Lee*,
"MHTGR-350MW Cross-section Uncertainty Analysis for Exercise I on
UAM benchmark," KNS Spring Meeting, Jeju, Korea, May 11-13, 2016

18. Jaerim Jang, Jinsu Park, Wonkyeong Kim, Sanggeol Jeong, Deokjung
Lee*, Kyoong-ho Cha, "Validation of UNIST Monte Carlo Code MCS for
Criticality Safety Analysis," KNS Spring Meeting, Jeju, Korea, May
11-13, 2016

19. Hyunsuk Lee, Wonkyeong Kim, Peng Zhang, Azamat Khassenov, Yunki
Jo, and Deokjung Lee*, "Development Status of Monte Carlo Code at
UNIST," KNS Spring Meeting, Jeju, Korea, May 11-13, 2016

20. Wonkyeong Kim and Deokjung Lee, Benchmark analysis for ADS KUCA
experiment: Reactivity and Indium wire reaction rate, KNS Spring
Meeting, Jeju, Korea, May 6-8, 2015

21. Wonkyeong Kim, Deokjung Lee, Tomasz Kozlowski "Comparative Study
of DIMPLE benchmark with Two-step and Direct Modelling Approaches,"
Transactions of the Korean Nuclear Society Autumn Meeting,
Pyeongchang, Korea, October 30-31, 2014

PATENT