



# Curriculum Vitae

## Wonkyeong Kim

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### AFFILIATION

Combined MSc and Ph.D Program (2<sup>nd</sup> 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
  - 1<sup>st</sup> track : Nuclear Science & Engineering
  - 2<sup>nd</sup> track : Energy Conversion & Storage

### WORK EXPERIENCE

- UNIST, Ulsan, Korea, 2009.2~2015.8
- 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 module
  - Implementation and verification
  - VERA benchmark
- BigData analysis on generic PWR simulator
  - Data generation for 0-100% operation
  - Establishment of operating variables for BigData analysis
- Monte Carlo code development
- Hybrid method with MC and MOC

### RESEARCH INTERESTS

### CERTIFICATES

- Awards & Scholarship
  - Full tuition waiver for GPA 3.3 or above (Mar, 2009 ~ Aug, 2015)
- Training

- 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
  - 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. 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)
2. Jaerim Jang, Wonkyeong Kim, Sanggeol Jeong, Eun Jung, Jinsu Park, Matthieu Lemaire, Hyunsuk Lee, Deokjung Lee\*, "Validation of UNIST Monte Carlo Code MCS for Criticality Safety Analysis of PWR Spent Fuel Pool and Storage Cask", *J. Nucl. Sci. Technol.*, Under review (2017)
3. 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)
4. 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)
5. 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

## International and Topical Meetings

- Wholecore Depletion by UNIST Monte Carlo Code MCS," M&C2017, Jeju, Korea, April 16-20 (2017) [Oral Presentation]
6. 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
  7. 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
  8. 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
  9. Wonkyeong Kim, Deokjung Lee, Cheolho Pyeon "IAEA ADS Benchmark Analysis of KUCA Experiments : Phase I," *ICAPP 2015*, Nice, France, May 3 - 6, 2015
  10. 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**

11. 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]
12. 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
13. 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
14. 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
15. 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
16. 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
17. Wonkyeong Kim, Deokjung Lee, Tomasz Kozlowski "Comparative Study of DIMPLE benchmark with Two-step and Direct Modelling Approaches,"

Revised on 10 July, 2017

Transactions of the Korean Nuclear Society Autumn Meeting,  
Pyeongchang, Korea, October 30-31, 2014

## **PATENT**