CURRICULUM VITAE

KANG SEOG KIM, Ph.D.

Distinguished R&D Staff
Nuclear Transmutation and Decay Physics Group
Nuclear Energy and Fuel Cycle Division
Oak Ridge National Laboratory
P.O. Box 2008 MS6172, Oak Ridge, TN 37831-6172
Tel: 865-576-5052(Office), 865-789-8804(Mobile)
Fax: 865-574-9619
E-mail: kimk1@ornl.gov

EDUCATION

Ph.D. in Nuclear Engineering, Oregon State University, Corvallis, OR, USA, 2000
M.S. in Physics, Yonsei University, Seoul, South Korea, 1986
B.S. in Physics, Yonsei University, Seoul, South Korea, 1984

PROFESSIONAL EXPERIENCE & ACHIEVEMENTS

07/11-present Distinguished R&D Staff (2023), Senior R&D Staff (2011), Oak Ridge National Laboratory :: Development of Modeling & Simulation Code Packages for Advanced Reactors and Light Water Reactor Reactors

- Development of fast reactor simulator (NRC, on going)
- Development of efficient case matrix for cross section functionalization (NRC, on going)
- Enhancement of the Polaris-GenPMAXS-PARCS procedure for reflector cross section, micro depletion capability and cross section functionalization (NRC, on going)
- Development of the ENDF/B-VII.1 and VIII.0 AMPX 61- and 258-group libraries for SCALE-7.0.0 (NRC, on going)
- SCALE/Polaris-PARCS validation for reactor physics (NRC)
- Development of an on-the-fly energy group collapsing for the SCALE-7.0 Polaris (NRC)
- Assessment of the ENDF/B-VIII.0 and VIII.1 candidate nuclear data for depletion
- Assessment of various evaluated nuclear data (ENDF/B-VII.1, JEFF-3.1 and 3.3, JENDL-3.3 and 4.0) for Pu-239 for the LWR fuel depletion (NEAMS)
- Development of the ENDF/B-VII.1 MPACT 60-group(n)/19-group(p) library (NEAMS)
- Development of the two-term functionalization of subgroup data and method (NEAMS)
- Cell Dancoff based subgroup capability for the VERA MPACT (NEAMS)
- Neutron-Gamma coupled MPACT library and gamma transport for MPACT (NEAMS)
- Cell Dancoff based (SD) ESSM for the SCALE-6.3 Polaris (NRC)
- Improvement of XSProc for double-heterogeneous fuels with graphite moderator (NRC)
- Improvement of XSProc-BONAMI for multiple fuel rings with non-uniform temperature distribution (NRC)

- Evaluation of capture kappas for the ENDF/B-VII.1 nuclides (CASL)
- Development of the ENDF/B-VII.1 MPACT 69-group library for the Magnox reactor analysis (NNSA)
- Development of the perturbed MPACT MG libraries and a method to perturb subgroup data (CASL)
- Improvement of the CASL VERA MPACT for advanced reactor analysis (Molten-salt reactors, Magnox, BWR, Yellowstone energy reactor)
- Leading the SCALE-XSProc maintenance and improvement for multigroup cross section processing for transport calculation (NRC)
- Development of the AMPX 1597-group library for advanced reactor (Sodium cooled fast reactors, fast and thermal Molten salt reactors) analysis and its verification and validation (NRC)
- Development of the spatially dependent Embedded Self-Shielding method
- Improvement of the SCALE code package for various advanced reactor (PWR, BWR, MSR, SFR, HTGR) analysis (NRC)
- Improvement of the SCALE cross section processing procedure for fast reactor analysis (NRC)
- Leading the improvement of methodologies, accuracy and performance for the CASL neutronics simulator MPACT :: Cross section library, resonance self-shielding methods, burnup and neutron/gamma transport/diffusion solver
- Development of multi-group cross section library for the CASL neutronics simulator MPACT :: 51-, 47- and 8-group MPACT libraries, and simplified burnup chain with 255 nuclides
- Development of a 2-step reactor physics analysis procedure for liquid salt-cooled Advanced High Temperature Reactor
- Development of MOC based resonance self-shielding methodology and eigenvalue calculation modules for doubly heterogeneous particulate TRISO fuels for the SCALE code package
- Improvement of an accuracy of the SCALE6.2 multi-group procedure by using SCALE-CENTRM/NEWT(or KENO) :: Group structure optimization, 2D MOC slowing down capability with high order scattering, and new weighting function
- Development of a new procedure and programs to generate resonance data (Intermediate resonance parameter, Bondarenko F-factors, subgroup data) in AMPX :: LAMBDA, IRFFACTOR and SUBGR
- Development of a resonance treatment methodology called Embedded Self-Shielding Method (ESSM) based on intermediate resonance approximation
- Development of a new resonance self-shielding method with ESSM coupled with 0-D pointwise slowing down calculation for explicit resonance interference
- Development of a new transport lattice code SCALE-POLARIS :: ESSM Resonance self-shielding and MOC
- Development of an automatic program CGOP to optimize coarse energy group structure
- Feasibility study on the applicability of the SCALE code package to the PWR small modular reactors
- Uncertainty analysis for the PWR spent fuels in the storage pool by utilizing a random sampling method
- Enhancement of the computational efficiency and convergence stability of SCALE6.2-NEWT (>5 times speedup)
- Enhancement of the computational efficiency of Denovo-MOC (>4 times speedup)
- Assessment and testing of the ANL NEAMS neutronics code package PROTEUS
- Development of a new unresolved resonance treatment method for the SCALE code package

06/89-06/11 Principal Researcher(2003), Senior Researcher(1992), Researcher(1989), Korea Atomic Energy Research Institute :: Development of Korean Small Modular Reactors and Modeling & Simulation Code Packages for Advanced Reactors and Light Water Reactors

- Reactor physics analysis and design for the Korean PWRs (Westinghouse and ABB-CE type reactors)
  - Initial and reload cycle nuclear design
  - Incore fuel management: Long term fuel cycle, fuel and burnable poison optimization, low leakage loading pattern
  - Safety analysis
  - Uncertainty analysis for key nuclear parameters
- Development and licensing of the Korean small and modular reactor SMART
  - Development of reactor core design procedure
  - Uncertainty analysis for key nuclear parameters
  - Reactor core design and licensing
- Development of a neutron/gamma cross section library processing code system for the transport codes KARMA and DeCART
- Development and licensing of the transport lattice code KARMA for the nuclear design of the operating Korean PWRs
- Development of the whole core transport simulator DeCART for PWR and HTGR (High Temperature Gas Cooled Reactor)
- Development of a Monte Carlo-depletion code package MCDEP
- Analysis of various critical experiments
- Development of a dynamic control rod worth measurement procedure
- Development of 2-step reactor physics analysis code packages for PWR, VHTR and SCWR (Super Critical Water Reactor)
- Development of various reactor physics related methodologies such as neutron and gamma transport, resonance treatment, burnup, criticality spectrum, acceleration schemes and spatial discretizations
- Uncertainty evaluation for various reactor physics code packages for nuclear design of PWR and small modular reactors: reactivity, power distribution, reactivity coefficients, control rod worth
- Conceptual design of a research reactor with plate type fuels
- Analysis of TRISO particle based PWR deep burn core
- Professional experience on various neutronics code packages
  - SIEMENS-KWU: FASER/MULTIMEDIUM/MEDIUM
  - STUDSVIK SCANDPOWER: CASMO, HELIOS
  - ABB-CE: DIT/ROCS
  - KAERI: KARMA/MASTER
  - OTHERS: SCALE, DRAGON, WIMS, MCNP
- Development of a graphical radiation shielding procedure by utilizing the DORT code

03/10-12/10 Adjunct Lecturer at Department of Nuclear Engineering, Kyunghee University

- Advanced numerical methods for reactor physics (Graduate course)
- Nuclear fuel cycle (Graduate course)

06/09-12/09 Research Consultant to Oak Ridge National Laboratory

- Library generation for the transport lattice codes using SCALE and AMPX

06/08-05/09 Visiting Researcher at Oak Ridge National Lab.

- Development of the unstructured partial and net current CMFD acceleration schemes for SCALE-NEWT
- Implementation of B1 criticality spectrum calculation capability on SCALE-NEWT
- Development of a multi-group library processing system for the transport code DeCART

01/97-05/00 Teaching and Research Assistant at Department of Nuclear Engineering, Oregon

State University

04/94-03/95 Visiting Researcher, ABB-CE, Windsor, CT
- Generation of the DIT cross section library based on ENDF/B-VI
- Uncertainty evaluation of the ABB-CE reactor physics code package for the CE-type reactors

LEADING PROJECTS (Selected)

10/23~09/24 “Development of efficient case matrix for cross section functionalization,” PI (US NRC, $0.3M/1yr)

10/23~09/24 “Development of fast reactor simulator,” PI (US NRC, $0.5M/1yr)

10/23~09/24 “Sensitivity analysis of the SCALE/Polaris-PARCS code package for LWR,” PI (US NRC, $0.1M/1yr)

10/22~09/23 “Validation of the SCALE/Polaris-PARCS Code Package for Light Water Reactor Analysis,” PI (US NRC, $0.5M/1yr)

10/21~09/23 “Development of the SCALE-7.0 AMPX Multigroup Cross Section Libraries,” PI (US NRC, $0.6M/2yr)

02/19~01/20 “Improvement of the SCALE-XSProc Multigroup Cross Section Processing Procedure for High Temperature Gas Cooled Reactor Analysis,” PI (US NRC)

12/18~11/20 “Adaptation of High-Fidelity Multiphysics Core Simulators for Advanced Reactor Applications,” US-ROK I-NERI between ORNL and KAERI with University of Michigan, Seoul National University and ANL, PI since 07/2019 (CASL Leveraging, $0.9M/3yr)

10/17~09/18 “Development and Improvement of the SCALE Multigroup Procedure for Advanced Reactor Analysis,” PI (US NRC)

09/17~09/18 “Development of Spatially Dependent Embedded Self-Shielding Method” supported by Oak Ridge National Laboratory LDRD, PI ($30K/2yr)

12/14~12/17 “Capability Enhancement and Validation of High-Fidelity Multi-Physics Reactor Simulators for Water-Cooled Power Reactor Applications,” I-NERI with MIT, University of Michigan, Seoul National University and Ulsan National Institute of Science and Technology, Co-PI, Lead of the Deterministic Core Simulator MPACT, (CASL Leveraging, $1.2M/3yr)

02/14~02/15 “Development of a New Lattice Physics Methodology for Doubly Heterogeneous Particulate Fuels” supported by Oak Ridge National Laboratory LDRD, PI ($190K/1yr)

12/13~09/14 “Improvement of the Unresolved Resonance Self-Shielding Method in the SCALE Code System” supported by Oak Ridge National Laboratory LDRD, PI ($30K/1yr)

04/10~06/11 “Licensing Support and Improvement for Transport Lattice and In-core Management codes” supported by Korea Ministry of Knowledge Economy, PI ($500K/3yr)

08/04~06/07 “Development of an advanced suite of the reactor physics analysis for the high temperature gas cooled reactor,” I-NERI with Argonne National Lab., PI ($500K/3yr)

08/04~01/05 “The Numerical Nuclear Reactor for High-Fidelity Integrated Simulation of Neutronic, Thermal-Hydraulic, and Thermo-Mechanical Phenomena,” I-NERI with Argonne National Lab., PI ($1.0M/3yr)

RESEARCH INTERESTS

- Modeling and Simulation: multi-physics code & simulation, high performance computing
- Computational transport and diffusion theory: deterministic and Monte Carlo methods, whole core and lattice transport code development, transport acceleration methods, double-heterogeneity treatment, numerical methods, stability analysis

- Computational reactor physics: analysis and design code development for advanced reactors including PWR, BWR, small modular reactor, high-temperature gas-cooled reactor, fast reactor and molten salt reactor, code verification and validation, uncertainty evaluation
- Advanced reactor development: small modular reactor, GEN-IV reactors (Pebble and prismatic high-temperature gas-cooled reactor, Molten Salt reactor, Sodium-cooled fast reactor)
- Nuclear data: cross section processing methods, resonance self-shielding methods, burnup library development, nuclear data evaluation
- In-core fuel management: depletion module development, burnup chain
- Sensitivity and Uncertainty quantification
- Nuclear Security
- Criticality and radiation shielding: methods and applications

DEVELOPED CODES

- KARMA : 2-Dimensional neutron/gamma transport lattice code for the commercial pressurized water reactors in Korea (1st author)
- KARMA_GRAF : Graphic program for KARMA (1st author)
- LIBERTE : 2-Dimensional transport lattice code with the capability of the general geometry treatment (1st author)
- DeCART : 3-Dimensional whole-core transport code (Co-author)
- MCDEP : Monte Carlo depletion code with a coupling of MCNP and a depletion module (1st author)
- GREDIT : Program to generate multi-group cross sections for the deterministic transport codes (1st author)
- MERIT : Program to generate resonance integral table and intermediate resonance parameters for a transport lattice code (1st author)
- SUBDATA : Program to generate subgroup data (1st author)
- LIBGEN : Program to generate a neutron/gamma library for LIBERTE/KARMA/DeCART (1st author)
- LIBFORM : Programs to convert or to modify the LIBERTE/KARMA/ DeCART library (1st author)
- GEOSHIELD : Program for the automatic particle transport calculation, graphics and output processing using DORT for radiation shielding (1st author)
- RILAMB/SUBGR/DECLIB : Multi-group library generation system by using SCALE and AMPX (1st author)
- SCALE Code Package : Contributed on CENTRM, NEWT and POLARIS, and responsible for SCALE-XSProc
- AMPX Code Package : Contributed on LAMBDA and IRFFACTOR which are based on RILAMB
- VERA/MPACT CASL and NEAMS Neutronics Simulator : Contributed on methodology, accuracy and performance
- CGOP : Program to automatically optimize coarse energy group structure (1st author)
- XSTools Code Package : Programs to generate the CASL VERA-CS cross section libraries (1st author)
- CapKappa : Program to generate recoverable capture energies for neutron flux normalization (1st author)
- LibSampler : Program to generate the perturbed MPACT MG libraries (1st author)

CODE EXPERIENCES

- ENDF/B data processing codes : NJOY, SCALE/AMPX
- Continuous energy Monte Carlo codes : MCNP, Serpent, SCALE/KENO-VI, SCALE/Shift
- Lattice transport codes : CASMO, HELIOS, DRAGON, KARMA (developer), SCALE/Polaris (Co-

developer)
- Nodal diffusion codes : PARCS, MASTER, MEDIUM, ROCS
- Cross section functionalization codes : PROLOG, GenPMAXS
- Whole-core deterministic transport codes : DeCART (developer), VERA-MPACT, Proteus
- Thermal hydraulic codes: COBRA, MATRA
- Radiation shielding codes : DORT, TORT
- Uncertainty quantification codes : SCALE/Sampler

PUBLICATION

Google Scholar: https://scholar.google.com/citations?user=y4cEsQMAAAAJ&hl=ko&oi=ao
Scopus: https://www.scopus.com/authid/detail.uri?authorId=8580424600

A. Journals

1. Kang Seog Kim et al., “Application of the Enrichment Zoning Concept for the 17x17 KOFA,” Journal of the Korean Nuclear Society, 26, No.3, 337-344 (1994).
2. J. Y. Cho, H. G. Joo, Kang Seog Kim, S. Q. Zee, “Cell Based CMFD Formulation for Acceleration of Whole-core Method of Characteristics Calculation,” Journal of the Korean Nuclear Society, 34, No.3, 250-258 (2002).
3. Kang Seog Kim et al., “Monte Carlo Resonance Treatment for the Deterministic Transport Lattice Codes,” Journal of the Korean Nuclear Society, 35, No.6, 581-595 (2003).
4. K. Y. Kim, H. Y. Kim, Kang Seog Kim et al., “Shielding Analysis for the Reactor Pressure Vessel of SMART-P,” Journal of Nuclear Science and Technology, Supp. 4, 82-85 (2003).
5. K. Y. Kim, H. Y. Kim, B. S. Koo, Kang Seog Kim et al., “Vessel Fluence Evaluation for a Design Improvement of the Flow Mixing Header of SMART-P,” Journal of Radiation Protection Bulletin, A Special Issue, 14-16 (2005).
6. David P. Weber, Tanju Sofu, Won Sik Yang, Thomas J. Downar, Justin W. Thomas, Zhaopeng Zhong, Jin Young Cho, Kang Seog Kim, Tae Hyun Chun, Han Gyu Joo, Chang Hyo Kim, “High-Fidelity Light Water Reactor Analysis with the Numerical Nuclear Reactor,” Nucl. Sci. Eng., Vol. 155, 395-408 (2007).
7. Kang Seog Kim et al., “Development of a Physics Analysis Procedure for the Prismatic Very High Temperature Gas Cooled Reactors,” Ann. Nucl. Energ., 34, 849-860 (2007).
8. Jin-Young Cho, Kang Seog Kim, Chung-Chan Lee, Sung-Quun Zee, Han-Gyu Joo, “Axial SP_N and Radial MOC Coupled Whole Core Transport Calculation,” J. Nucl. Sci. Tech., Vol. 44, No. 9 (2007).
9. Kyung-Hoon Lee, Kang Seog Kim, Jin-Young Cho, Jae-Seung Song, Jae-Man Noh, Chung-Chan Lee, “IAEA GT-MHR Benchmark Calculations by using the HELIOS/MASTER Physics Analysis Procedure and the MCNP Monte Carlo Code,” Nucl. Eng. Design, 238, 2654-2667 (2008).
10. Jin-Young Cho, Kang Seog Kim et al., “Whole Core Transport Calculation Employing Hexagonal Modular Ray Tracing and CMFD Formulation,” J. Nucl. Sci. Tech., 45, 740-751 (2008).
11. Kyo Youn Kim, Kang Seog Kim et al., “Verification for a GEOSHIELD application to the SMART Vessel Fluence by a Monte Carlo Simulation,” J. Nucl. Sci. Tech., Supplement 5, 24-27 (2008).
12. Gyuhong Noh, Kang Seog Kim et al., “Ex-Core Detector Response Evaluation of the SMART Reactor by Using the DORT Code,” J. Nucl. Sci. Tech., Supplement 5, 78-81 (2008).
13. Gyuhong Noh, Ha Yong Kim, Kang Seog Kim, Kyo Youn Kim, “Radiation Shielding Analysis for the Reactor Assembly of the SMART Reactor,” J. Nucl. Sci. Tech., Supplement 5, 82-85 (2008).
14. Jae Man Noh, Kang Seog Kim, Yong Hee Kim, Hyun Chul Lee, “Development of a Computer Code System for the Analysis of Prism and Pebble Type VHTR cores,” Ann. Nucl. Energ., 35, 1919-1928, (2008).
15. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, “Fourier convergence analysis of the rebalance methods for discrete ordinates transport equations in eigenvalue problems,” Nucl. Sci. Eng., 164, 33-52 (2010).

16. Kang Seog Kim, Ser Gi Hong, “A New Procedure to Generate Resonance Integral Table with an Explicit Resonance Interference for Transport Lattice Codes,” Ann. Nucl. Energ., 38, 118-127 (2011).
17. Ser Gi Hong, Kang Seog Kim, “Iterative Resonance Treatment Methods Using Resonance Integral Table in Heterogeneous Transport Lattice Calculations,” Ann. Nucl. Energ., 38, 32-43 (2011).
18. Kang Seog Kim, Mark L. DeHart, “Unstructured Partial and Net Current Based Coarse Mesh Finite Difference Acceleration Applied to Extended Step Characteristics Method in NEWT,” Ann. Nucl. Energ., 38, 527-534 (2011).
19. Kang Seog Kim, Ser Gi Hong, “The Method of Characteristics Applied to Solving Slowing Down Equation to Estimate the Self-Shielded Resonance Cross Sections with an Explicit Geometrical Effect,” Ann. Nucl. Energ., 38, 438-446 (2011).
20. Kyung Hoon Lee, Kang Seog Kim, Ser Gi Hong, Jae Seung Song, “Benchmark calculations for the CE critical experiments by KARMA 1.1 with ENDF/B-VI R8 and ENDF/B-VII R0,” J. Kor. Phys. Soc., 59(23), 1203-1206 (2011).
21. Kang Seog Kim, Ser Gi Hong, “Gamma Transport and Diffusion Calculation Capability Coupled with Neutron Transport Simulation in KARMA 1.2,” Ann. Nucl. Energ., 57, 59-67 (2013).
22. Yuxuan Liu, William Martin, Mark L. Williams, Kang Seog Kim, “A Full-Core Resonance Self-Shielding Method Using a Continuous-Energy Quasi-One-Dimensional Slowing-Down Solution that Accounts for Temperature-Dependent Fuel Subregions and Resonance Interference,” Nucl. Sci. Eng., 180, 247-272 (2015).
23. Brendan Kochunas, Benjamin Collins, Daniel Jabaay, Shane Stimpson, Aaron Graham, Kang Seog Kim, William Wieselquist, Kevin Clarno, Scott Palmtag, Thomas Downar, Jess Gehin, “VERA Core Simulator Methodology For PWR Cycle Depletion,” Nucl. Sci. Eng., 185, 217-231 (2017).
24. Ho Jin Park, Ser Gi Hong, Kang Seog Kim, Jae-Seung Song, “An Improved DeCART Library Generation Procedure with Explicit Resonance Interference Using Continuous Energy Monte Carlo Calculation,” Ann. Nucl. Energ., 105, 95-105 (2017).
25. Cole Gentry, Kang Seog Kim, G. Ivan Maldonado, “Two-Step Procedure for Liquid Salt Cooled Reactor Analysis,” Nuclear Technology, 204:3, 299-317 (2018).
26. Kang Seog Kim, Mark L. Williams, Dorothea Wiarda, Kevin T. Clarno, “Development of the Multigroup Cross Section Library for the CASL Neutronics Simulator MPACT: Method and Procedure,” Ann. Nucl. Energ., 133, 46-58 (2019).
27. Kang Seog Kim, Cole A. Gentry, Andrew T. Godfrey, Yuxuan Liu, Scott Palmtag, “Development of the Multigroup Cross Section Library for the CASL Neutronics Simulator MPACT: Verification,” Ann. Nucl. Energ., 132, 1-23 (2019).
28. Kang Seog Kim, Mark L. Williams, “Spatially Dependent Embedded Self-Shielding Method for Nonuniform Temperature Distribution,” Ann. Nucl. Energ., 132, 563-575 (2019).
29. Kang Seog Kim, Mark L. Williams, Andrew Holcomb, Dorothea Wiarda, Byoung Kyu Jeon, Won Sik Yang, "The AMPX/SCALE Multigroup Cross Section Processing for Fast Reactor Analysis," Ann. Nucl. Energ., 132, 161-171 (2019).
30. Matthew A. Jessee, William A. Wieselquist, Ugur Mertyurek, Kang Seog Kim, Thomas M. Evans, Steven P. Hamilton, "Lattice Physics Calculations Using the Embedded Self-Shielding Method in Polaris, Part I: Methods and Implementation,” Ann. Nucl. Energ., 150, 107830 (2021).
31. Cole Gentry, Andrew Godfrey, Gary Wolfram, Eva Davidson, Tara Pandya, Katherine Royston, Germina Ilas, Scott Palmtag, Gregory Davidson, Seth Johnson, Shane Hart, Benjamin Collins, Tom Evans, Kang Seog Kim, “Secondary Source Core Reload Modeling with VERA," Nucl. Sci. Eng.,195, 320-337 (2021).
32. Yuxuan Liu, Robert Salko, Kang Seog Kim, Xinyan Wang, Matthew Kabelitz, Sooyoung Choi, Brendan Kochunas, Benjamin Collins, William Martin, "Improved MPACT Energy Deposition Model and Explicit Heat Generation Coupling with CTF,” Ann. Nucl. Energ., 152, 107999 (2021).
33. Kang Seog Kim, William Wieselquist, "Neutronic Characteristics of ENDF/B-VIII.0 Compared to ENDF/B-VII.1 for Light-Water Reactor Analysis," J. of Nucl. Engr., 2, 318-335 (2021).
34. Kang Seog Kim, Byoung-Kyu Jeon, Andrew Ward, Ugur Mertyurek, Matthew Jessee, William

Wieselquist, "Validation of the SCALE/Polaris-PARCS Code Procedure with the ENDF/B-VII.1 AMPX 56-Group Library: Pressurized Water Reactor," J. of Nucl. Engr. (2024). (ORNL internal review)

35. Kang Seog Kim, Andrew Ward, Ugur Mertyurek, Mehdi Asgariee, William Wieselquist, "Validation of the SCALE/Polaris-PARCS Code Procedure with the ENDF/B-VII.1 AMPX 56-Group Library: Boiling Water Reactor," J. of Nucl. Engr. (2024). (ORNL internal review)

B. Transaction of American Nuclear Society

1. U. Decher, A. Jonsson, S. J. Kim, Kang Seog Kim, “ENDF/B-VI Performance in PWR Applications,” Trans. Am. Nucl. Soc., 73, 417 (1995).
2. Kang Seog Kim et al., “Diffusion Synthetic Acceleration for One-Cell Block Inversion in Slab Geometry,” Trans. Am. Nucl. Soc., 75, 138 (1999).
3. Kang Seog Kim et al., “Coarse-Mesh Diffusion Synthetic Acceleration for in Slab Geometry,” Trans. Am. Nucl. Soc., 76 (2000).
4. Kang Seog Kim et al., “Development of DENT 2D Code Based on the Characteristics Method,” Trans. Am. Nucl. Soc., 86, 369 (2002).
5. J. Y. Cho, H. G. Joo, Kang Seog Kim, S. Q. Zee, M. H. Chang, “Three-Dimensional Heterogeneous Whole Core Transport Calculation Employing Planar MOC Solution,” Trans. Am. Nucl. Soc., 87, 234 (2002).
6. J. Y. Cho, Kang Seog Kim et al., “Transient Capability for a MOC-Based Whole Core Transport Code DeCART,” Trans. Am. Nucl. Soc., 90, 721 (2004).
7. H. C. Lee, Kang Seog Kim et al., “The Equivalent Cylinder Models for the Homogenization of Pebble Bed Reactor Cores,” Trans. Am. Nucl. Soc., 93, 961 (2005).
8. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, “A Resonance Integral Table-based Iteration Method for Resonance Treatment in Lattice Calculation,” Trans. Am. Nucl. Soc., 102, 536 (2010).
9. Kang Seog Kim, Mark L. Williams, “Preliminary Assessment of Resonance Interference Treatment by Using 0-D Slowing Down Calculation in the Embedded Self-Shielding Method,” Trans. Am. Nucl. Soc., 107, 1128-1131 (2012).
10. Matthew A. Jessee, William A. Wieselquist, Mark L. Williams, Kang Seog Kim, “VERA Benchmark Calculations Using the SCALE-Polaris Lattice Physics Code,” Trans. Am. Nucl. Soc., 109, 1413-1415 (2013).
11. Yuxuan Liu, William Martin, Kang Seog Kim, Mark L. Williams, “Modeling Spatial Dependence of Resonance Self-Shielding Effects Including Resonance Interference and Temperature Distribution,” Trans. Am. Nucl. Soc., 109, 800-803 (2013).
12. Kang Seog Kim, “Comparison between Spatially Dependent Embedded Self-Shielding and Subgroup Methods,” Trans. Am. Nucl. Soc., 119, 1193-1196, Orlando, Florida, Nov. 11-15 (2018).
13. Kang Seog Kim, Matthew A. Jessee, “Development of Perturbed MPACT Multigroup Libraries and the Perturbation Methodology for Subgroup Data,” Trans. Am. Nucl. Soc., 121, 1457-1460, Washington, D.C., Nov. 17-21 (2019).
14. Kang Seog Kim, Dorothea Wiarda, "Multigroup Cross Section Library and Processing for the CASL VERA Neutronics Simulators," 2020 ANS Winter, CASL Symposium, Chicago, IL, Nov. 15-19, (2020).
15. Yuxuan Liu, Robert Salko, Kang Seog Kim, Xinyan Wang, Matthew Kabelitz, Sooyoung Choi, Brendan Kochunas, Benjamin Collins, William Martin, " An Improved Energy Deposition Model in MPACT with Simplified Gamma Smearing and Time-dependent Delayed Energy," ANS 2020 Winter, CASL Symposium, Chicago, IL, Nov. 15-19, (2020).
16. Shane Stimpson, Fausto Franceschini, Benjamin Collins, Andrew Godfrey, Kang Seog Kim, and Aaron Graham, "MPACT Diffusion Coefficient Improvement Through Westinghouse Collaboration," 2020 ANS Winter, CASL Symposium, Chicago, IL, Nov. 15-19, (2020).
17. A. Viette, E. Davidson, F. Franceschini, K.S. Kim, "Benchmarking VERA for Criticality and

Depletion Calculations of Accident Tolerant Fuels," Trans. Am. Nucl. Soc., 123, 1369-1372 (2020).
18. Kang Seog Kim, William A. Wieselquist, "Reactivity Underestimation of ENDF/B-VIII.0 Compared with ENDF/B-VII.1 for the Pressurized Water Reactor Depletion Analysis," Trans. Am. Nucl. Soc., 124, 521-523 (2021).
19. Kang Seog Kim, Andrew M. Holcomb, Matthew A. Jessee, William A. Wieselquist, " Revisit of the Dancoff based Wigner-Seitz Approximation of SCALE for Pointwise and Multigroup Resonance Self-Shielding Calculations," Trans. Am. Nucl. Soc., 125, 1016-1019 (2021).
20. Kang Seog Kim, Ugur Mertyurek, Andrew Ward, Matthew A. Jessee, William A. Wieselquist, "Benchmark Calculations for BEAVRS and Watt Bar Unit 1 Using the SCALE-6.3.0/Polaris-PARCS v3.4.2 code Package," Trans. Am. Nucl. Soc., 128, 804-807 (2023).
21. Kang Seog Kim, Ugur Mertyurek, Andrew Ward, Matthew A. Jessee, William A. Wieselquist, "Benchmark Calculations for Peach Bottom Unit 2 and Hatch Unit 1 Using the SCALE-6.3.0/Polaris-PARCS v3.4.2 Code Package," Trans. Am. Nucl. Soc., 128, 800-803 (2023).
22. Aaron M. Graham, Kang Seog Kim, "On-the-Fly Energy Group Collapse for Whole-Core Multiphysics Simulations," Trans. Am. Nucl. Soc., 128, 682-685 (2023).
23. Kang Seog Kim, "Peaking Factor Uncertainty of VERA-MPACT with the ENDF/B-VII.1 51-Group Library through Benchmark Calculations for Critical Experiments," Trans. Am. Nucl. Soc., 128, 711-714 (2023).
24. K.S. Kim, D. Wiarda, C. Chapman, J. McDonnell, W. Wieselquist, "Improvement of the SCALE-6.3/XSProc Pointwise Slowing-Down Capability with the Bound Thermal Scattering Data Including High Forward Peaks," Trans. Am. Nucl. Soc., 129, 817-820 (2023).
25. K.S. Kim, W. Gurecky, M.A. Jessee, W. Wieselquist, "Sensitivity Analysis of the SCALE/Polaris-PARCS Code Procedure for Watts Bar Unit 1 and Peach Bottom Unit 2," ANS 2024 Annual, Las Vegas, NV (submitted).
26. K.S. Kim, M. Asgari, "Subgroup Resonance Self-Shielding Methods with Two-Term Functionalization for VERA-MPACT," ANS 2024 Annual, Las Vegas, NV (submitted).
27. K.S. Kim, M.A. Jessee, A.M. Holcomb, W. Wieselquist, "Dancoff-Based Wigner-Seitz Approximation for the Embedded Self-Shielding Methods in SCALE/Polaris," ANS 2024 Annual, Las Vegas, NV (submitted).
28. B.K. Jeon, K.S. Kim, U. Mertyurek, A. Ward, M.A. Jessee, W. Wieselquist, "Benchmark Calculations for Turkey Point Unit 3 and Surry Unit 1 Using the SCALE/Polaris-PARCS Code Procedure," ANS 2024 Annual, Las Vegas, NV (submitted).

C. International Conference

1. Kang Seog Kim et al., “Verification and Validation of CASMO-3/MASTER Design Code System,” Proceedings of PHYSOR ‘96, Mito, Japan (1996).
2. Kang Seog Kim et al., “Benchmark Calculations of DENT-2D Code For PWR Fuel Assemblies,” Proceedings of PHYSOR 2002, Seoul, Korea (2002).
3. H. G. Joo, J. Y. Cho, Kang Seog Kim, H. Y. Kim, M. H. Chang, “Whole Core Calculation with Subpin Level Thermal Feedback,” Proceedings of AESJ 2003 Spring Mtg., Sasebo, Japan (2003).
4. K. Y. Kim, H. Y. Kim, Kang Seog Kim, C. C. Lee, M. H. Chang, S. Q. Zee, “Shielding Design Analyses for the SMART-P Reactor Assembly,” Proceedings of ISORD-2, Japan (2003).
5. H. G. Joo, J. Y. Cho, Kang Seog Kim et al., “Methods and Performance of a Three-Dimensional Whole-Core Transport Code DeCART,” Proceedings of PHYSOR 2004, Chicago, USA (2004).
6. Y. S. Cho, Kang Seog Kim et al., “Comparative Study on Different Phonon Frequency Spectra of Graphite in GCR,” International Workshop on Nuclear Data Needs for Generation IV Nuclear Energy Systems, Belgium (2005).
7. Kang Seog Kim et al., “Depletion Capability of the 3-Dimensional Whole Core Transport Code DeCART,” M&C 2005, Avignon, France, Sept. 12-15, 2005 (2005).
8. Kang Seog Kim et al., “Forced Structured Coarse Mesh Finite Difference Method for the

Characteristics Method Applied to the Complex Geometry," M&C 2005, Avignon, France, Sept. 12-15, 2005 (2005).
9. K. Y. Kim, B. S. Koo, H. Y. Kim, Kang Seog Kim, C. C. Lee, S. Q. Zee, "Radiation Shielding Analysis for Design Improvement of Side Shield Screen Assembly of SMART-P," Proceedings of ISORD-3, China (2003).
10. D. P. Weber, T. Sofu, P. Pfeiffer, W. S. Yang, Kang Seog Kim et al., "The numerical Nuclear Reactor-A High Fidelity, Integrated Neutronic, Thermal-Hydraulic and Thermo-Mechanical Code," M&C 2005, Avignon, France, Sept. 12-15, 2005 (2005).
11. H. G. Joo, B. S. Han, C. H. Kim, Kang Seog Kim, "Implementation of Subgroup Method in Direct Whole Core Transport Calculation Involving Nonuniform Temperature Distribution," M&C 2005, Avignon, France, Sept. 12-15, 2005 (2005).
12. J. M. Noh, H. C. Lee, Kang Seog Kim, Y. H. Kim, "Development of a KAERI Computer Code System for the Analysis of VHTR Cores," Joint seminar on the Application and Development of Advanced Nuclear Reactor, China (2005).
13. J. Y. Cho, Kang Seog Kim, C. C. Lee, "Error Quantification of the Axial Nodal Diffusion Kernel of the DeCART Code," Proceedings of PHYSOR 2006, Vancouver, Canada (2006).
14. H. C. Lee, Kang Seog Kim et al., "Two-Step Procedure by using a 1-D Slab Spectral Geometry for a Pebble Bed Reactor Core Analysis," Proceedings of PHYSOR 2006, Vancouver, Canada (2006).
15. Kang Seog Kim et al., "Development of Two-Step Procedure for the Prismatic VHTR Physics Analysis," Proceedings of PHYSOR 2006, Vancouver, Canada (2006).
16. H. C. Lee, Kang Seog Kim et al., "IAEA GT-MHR Benchmark Calculations using the HELIOS/MASTER Code Package," Proceedings of PHYSOR 2006, Vancouver, Canada (2006).
17. J. Y. Cho, Kang Seog Kim, C. C. Lee, H. G. Joo, "Sub-Plane Scheme for a Radial Transport and Axial Diffusion Code," ICAPP 2007, Nice, France (2007).
18. Hyun Chul Lee, Qian Hong, Kang Seog Kim, Jae Man Noh, "Comparison of Two-Step Diffusion Solutions and Monte Carlo Solutions to the IAEA CRP-5 Pebble Box Benchmark Problem," ICAPP 2007, Nice, France (2007).
19. Hyun Chul Lee, Kang Seog Kim, Jae Man Noh, "Comparison of Two-Step Diffusion Solutions and Monte Carlo Solutions to a Doubly Heterogeneous PBMR-400 Problem," M&C 2007, Monterey, CA, USA (2007).
20. L. Pogosbekyan, H. G. Joo, C. H. Kim, Kang Seog Kim, "Generation of Subgroup Weights Employing Shielded Cross Section Conservation Principle for Representative Pin Cells," M&C 2007, Monterey, CA, USA (2007).
21. Jin-Young Cho, Kang Seog Kim, Chung-Chan Lee, Han-Gyu Joo, "Whole Core Transport Calculation for the VHTR Hexagonal Core," ICENES 2007, Istanbul, Turkey (2007).
22. Kyo Youn Kim, Kang Seog Kim, Ha Yong Kim, Sung Quun Zee, "Fast Neutron Fluence Evaluation of the SMART Reactor Pressure Vessel by Using the GEOSHIELD code," 28th Annual CNS Conference & 31st CNS/CAN Student Conference, June 3-6, 2007 Saint John, New Brunswick, Canada (2007).
23. Leonid Pogosbekyan, Gwan Young Kim, Kang Seog Kim, Han Gyu Joo, "Resolution of double heterogeneity in direct transport calculation employing subgroup method and method of characteristics," PHYSOR 2008, Interlaken, Switzerland, Sept. 14-19 (2008).
24. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, "On the Convergence of the Rebalance Methods for Transport Equation for Eigenvalue Problems," PHYSOR 2008, Interlaken, Switzerland, Sept. 14-19 (2008).
25. Kyung Hoon Lee, Kang Seog Kim, Ser Gi Hong, Jae Seung Song, "Benchmark Calculations for the CE Critical Experiments by KARMA 1.1 with ENDF/B-VI R8 and ENDF/B-VII R0," International Conference on Nuclear Data for Science and Technology 2010, Jeju, Korea, April 26-30 (2010).
26. Kyung Hoon Lee, Kang Seog Kim, Ser Gi Hong, Jae Seung Song, "KARMA 1.1 Benchmark Calculations for the Numerical Benchmark Problems and the Critical Experiments," International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2011), Rio de Janeiro, RJ, Brazil, May 8-12, 2011 (2011).

27. Kang Seog Kim, Mark L. Williams, “The Method of Characteristics For 2-D Multigroup and Pointwise Transport Calculation in SCALE/CENTRM,” PHYSOR 2012, Knoxville, Tennessee, USA, April 15-20, 2012 (2012).
28. Mark L. Williams, Kang Seog Kim, “The Embedded Self-Shielding Method,” PHYSOR 2012, Knoxville, Tennessee, USA, April 15-20, 2012 (2012).
29. Ser Gi Hong, Kang Seog Kim, “Gamma Library Generation for KARMA 1.2,” PHYSOR 2012, Knoxville, Tennessee, USA, April 15-20, 2012 (2012).
30. Yuxuan Liu, William Martin, Kang Seog Kim, Mark Williams, “Modeling Resonance Interference by 0-D Slowing-Down Solution with Embedded Self-Shielding Method,” M&C 2013, Sun Valley, Idaho, USA, May 5-9, 2013 (2013).
31. Yuxuan Liu, Benjamin Collins, Brendan Kochunas, William Martin, Kang Seog Kim, Mark Williams, “Resonance Self-Shielding Methodology In MPACT,” M&C 2013, Sun Valley, Idaho, USA, May 5-9, 2013 (2013).
32. W. A. Wieselquist, K. S. Kim, G. Ilas and I. C. Gauld, “Comparison of Burnup Credit Uncertainty Quantification Methods,” ANS NCSD 2013, Wilmington, NC, USA, September 29-October 3, 2013 (2013).
33. Matthew A. Jessee, William A. Wieselquist, Thomas M. Evans, Steven P. Hamilton, Joshua J. Jarrell, Kang Seog Kim, Jordan P. Lefebvre, Robert A. Lefebvre, Ugur Mertyurek, Adam B. Thompson, Mark L. Williams, “POLARIS: A New Two-Dimensional Lattice Physics Analysis Capability for The SCALE Code System,” PHYSOR 2014, Kyoto, Japan, Sept. 28 – Oct. 3, 2014 (2014).
34. Kang Seog Kim , Mark L. Williams, Dorothea Wiarda, and Andrew T. Godfrey, "Development of a New 47-Group Library for the CASL Neutronics Simulators," M&C 2015, Nashville, TN, USA, April 19-23, 2015 (2015).
35. Shane Stimpson, Fausto Franceschini, Benjamin Collins, Andrew Godfrey, Kang Seog Kim, Aaron Graham, and Thomas Downar, "Improved Diffusion Coefficients for SPN Axial Solvers in the MPACT 2D/1D Method Applied to the AP1000® PWR Start Up Core Models," M&C 2015, Nashville, TN, USA, April 19-23, 2015 (2015).
36. Brendan Kochunas, Benjamin Collins, Daniel Jabaay, Shane Stimpson, Aaron Graham, Kang Seog Kim, William Wieselquist, Kevin Clarno, Scott Palmtag, Thomas Downar and Jess Gehin, "VERA Core Simulator Methodology for PWR Cycle Depletion," M&C 2015, Nashville, TN, USA, April 19-23, 2015 (2015).
37. B. Kochunas, T. Downar, D. Jabaay, B. Collins , S. Stimpson, A. Godfrey, K.S. Kim, J. Gehin, S. Palmtag, F. Franceschini , "Validation and application of the 3D neutron transport MPACT code within CASL VERA-CS,” International Topical Meeting on Nuclear Reactor Thermal Hydraulics, NURETH 2015, Aug. 30 – Sept. 4, 2015 (2015).
38. Andrew Godfrey, Benjamin Collins, Kang Seog Kim, Jeffrey Power, Robert Salko, Shane Stimpson, William Wieselquist, Kevin Clarno, Jess Gehin, Scott Palmtag, Robert Montgomery, Rosemary Montgomery, Daniel Jabaay, Brendan Kochunas, Thomas Downar, Nathan Capps, Jeffrey Seker, "VERA Benchmarking Results for Watts Bar Nuclear Plant Unit 1 Cycles 1-12," PHYSOR 2016, Sun Valley, ID, USA, May 1-5, 2016 (2016).
39. Cole Gentry, Ivan Maldonado, Kang Seog Kim, "Development of Two-Step Reactor Physics Analysis Procedure for Advanced High Temperature Reactors," PHYSOR 2016, Sun Valley, ID, USA, May 1-5, 2016 (2016).
40. Kang Seog Kim, Jianwei Hu, Cole Gentry, "Embedded Self-Shielding Method Applied To Doubly Heterogeneous Fully Ceramic Micro-Encapsulated Fuels," PHYSOR 2016, Sun Valley, ID, USA, May 1-5, 2016 (2016).
41. Mark L. Williams, Dorothea Wiarda, Kang Seog Kim, Matthew A. Jessee, "Multigroup Data Processing for the Embedded Self-Shielding Method in SCALE," PHYSOR 2016, Sun Valley, ID, USA, May 1-5, 2016 (2016).
42. Kang Seog Kim, Mark L. Williams, Dorothea Wiarda, Kevin Clarno, " Development of the CASL-VERA V4.2m5 MPACT 51-group Libraries with ENDF/B-VII.0 and VII.1," M&C 2017, Jeju, South Korea (2017).
43. Kang Seog Kim, Mark L. Williams, Dorothea Wiarda, Ugur Mertyurek, " Automatic Coarse

Energy Group Structure Optimization by Minimizing Reaction Rate Differences for the SCALE and CASL Code Systems," M&C 2017, Jeju, South Korea (2017).

44. Xinyan Wang, Yuxuan Liu, William Martin, Kang Seog Kim, " Energy Deposition Analysis for VERA Progression Problems by MCNP," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
45. Kang Seog Kim, Dong Hyuk Lee, Hyung Jin Shim, Aaron J. Pawel, " VERA Depletion Benchmarks by CASL VERA-CS, SERPENT and McCARD with ENDF/B-VII.0," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
46. Kang Seog Kim, Yuxuan Liu, Cole A. Gentry, "Simplified AMPX Library Capability of the CASL Neutronics Simulator MPACT," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
47. Kang Seog Kim, Mark L. Williams, Andrew Holcomb, Dorothea Wiarda, Byoung Kyu Jeon, Won Sik Yang, "The AMPX/SCALE Multigroup Cross Section Processing for Fast Reactor Analysis," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
48. Cole A. Gentry, Matthew A. Jessee, Kang Seog Kim, "Improvement in the Polaris Implementation of the Embedded Self-Shielding Method," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
49. Zackary Dodson, Ben Yee, Brendan Kochunas, Thomas Downar[1], Kang Seog Kim, "Progress in Validation of MPACT with Critical Experiments," PHYSOR 2018, Cancun, Mexico, April 22-27,2018 (2018).
50. Kang Seog Kim, Friederike Bostelmann, Andrew M. Holcomb, Germina Ilas, and William A. Wieselquist, "Verification of the ENDF/B-VII.1 and VIII.0 AMPX 1597-Group Libraries for Advanced Reactor Analysis," M&C 2019, Portland, OR, USA, August 25-29,2019 (2019).
51. C. Gentry, A. Godfrey, E. Davidson, G. Ilas, B. Collins, S. Hart, K.S. Kim, T. Pandya, K. Royston, G. Davidson, S. Johnson, T. Evans,"Source range detector response modeling using VERA," GLOBAL 2019 and Light Water Reactor Fuel Performance Conference, TOP FUEL 2019, Sept. 22-27, 2019 (2019).
52. Kang Seog Kim, Brian J. Ade, Nicholas P. Luciano, " Development and Verification of the MPACT 69-Group Library for the Magnox Reactor Analysis Using CASL VERA," PHYSOR 2020, Cambridge, UK, March 29-April 2, 2020 (2020).
53. Kang Seog Kim, Friederike Bostelmann, Andrew Holcomb, Dorothea Wiarda, Kursat Bekar and William Wieselquist, "Recent Improvement of the SCALE-XSProc Multigroup Cross Section Processing Based on the CENTRM Pointwise Slowing Calculation," PHYSOR 2020, Cambridge, UK, March 29-April 2, 2020 (2020).
54. Yuxuan Liu, Robert Salko, Kang Seog Kim, Xinyan Wang, Matthew Kabelitz, Brendan Kochunas, Benjamin Collins, William Martin, "An Improved Energy Deposition Model in MPACT and Explicit Heat Generation Coupling with CTF," PHYSOR 2020, Cambridge, UK, March 29-April 2, 2020 (2020).
55. Nicholas P. Luciano, Brian J. Ade, Kang Seog Kim, Andrew J. Conant, "MPACT Verification with Magnox Reactor Neutronics Progression Problems," PHYSOR 2020, Cambridge, UK, March 29-April 2, 2020 (2020).
56. Brian J. Ade, Nicholas P. Luciano, Cole A. Gentry, Shane G. Stimpson, Benjamin S. Collins, Kang Seog Kim, and Robert Mills, "Development of MPACT for Full-core Simulations of Magnox Gas-cooled nuclear Reactors," PHYSOR 2020, Cambridge, UK, March 29-April 2, 2020 (2020).
57. Kang Seog Kim, Andrew M. Holcomb, William A. Wieselquist, “Spatially Dependent Resonance Self-Shielding Capability for Non-uniform Temperature Profile in SCALE-6.3 XSProc-BONAMI,” M&C 2021, Charlotte, NC, USA, October 3-7, 2021 (2021).
58. Kang Seog Kim, Andrew M. Holcomb, Friederike Bostelmann, Dorothea Wiarda, Brandon R. Langley, William A. Wieselquist, “Improvement of the SCALE-XSProc Capabilities for High-Temperature Gas-Cooled Reactor Analysis,” M&C 2021, Charlotte, NC, USA, October 3-7, 2021 (2021).
59. Cole Gentry, Volkan Seker, Brian J. Ade, Andrew J. Conant, Nicholas P. Luciano, Kang Seog Kim, Benjamin S. Collins, Thomas Downar, “Development and Performance Simulations of the MPACT-AGREE Code Coupling Interface for Magnox Reactors,” M&C 2021, Charlotte, NC, USA, October 3-7, 2021 (2021).

60. Kang Seog Kim, Aaron M. Graham, Matthew A. Jessee, "Dancoff Based Wigner-Seitz Approximation for the Subgroup Resonance Self-Shielding in the VERA Neutronics Simulator MPACT," PHYSOR 2022, Pittsburgh, PA, USA, May 15-20, 2022.
61. Yuxuan Liu, Daniel Jabaay, Brendan Kochunas, Kang Seog Kim, "Validation of MPACT BWR Capabilities Against Critical Experiments," PHYSOR 2022, Pittsburgh, PA, USA, May 15-20, 2022.
62. Byoung-Kyu Jeon, Won Sik Yang, Hansol Park, Kang Seog Kim, Matthew A. Jessee, William A. Wieselquist, "Cell Dancoff Based Embedded Self-Shielding Capability for the Double Heterogeneous Prismatic HTGR Fuels in SCALE/Polaris," PHYSOR 2022, Pittsburgh, PA, USA, May 15-20, 2022.

D. Transaction of Korean Nuclear Society

1. C. C. Lee, S. Q. Zee, Kang Seog Kim, J. S. Song, “A Study on the Nuclear Characteristics of Enriched Gadolinia Burnable Absorber Rods,” Proceedings of KNS 2001 Spring Mtg., Cheju, Korea (2001).
2. Kang Seog Kim et al., “Coarse Mesh Diffusion Synthetic Acceleration of Bi-linear Discontinuous Finite Element S_N Calculation in x-y Geometry,” Proceedings of 2001 KNS Spring Mtg., Cheju, Korea (2001).
3. J. Y. Cho, H. G. Joo, Kang Seog Kim, S. Q. Zee, “Cell Based CMFD Formulation for Acceleration of Whole-core Method of Characteristics Calculations,” Proceedings of KNS 2001 Autumn Mtg., Suwon, Korea (2001).
4. Kang Seog Kim et al., “Comparison of 2-DORT Synthesis with 3-D TORT in the Calculation of Excore Detector Response,” Proceeding of KNS 2001 Autumn Mtg., Suwon, Korea (2001).
5. Kang Seog Kim et al., “Development of the Neutron Transport Lattice Code DENT 2-D and Benchmark Calculations,” Proceedings of KNS 2002 Spring Mtg., Gwangju, Korea (2002).
6. J. S. Song, B. O. Cho, Kang Seog Kim et al., “Dynamic control Rod worth Measurement of Yonggwang Unit 1 Cycle 14,” Proceedings of KNS 2002 Spring Mtg., Gwangju, Korea (2002).
7. L. Pogosbekyan, H. G. Joo, Kang Seog Kim. J. Y. Cho, S. Q. Zee, “Sensitivity Theory approach to Implementation of the Subgroup Method for Resonance Treatment in Heterogeneous Systems,” Proceedings of KNS 2002 Autumn Mtg., Yongpyong, Korea (2002).
8. J. Y. Cho, Kang Seog Kim, H. G. Joo, S. Q. Zee, M. H. Chang, “Two-Dimensional SMART Core Calculation by the DeCART Code,” Proceedings of KNS 2002 Autumn Mtg., Yongpyong, Korea (2002).
9. Kang Seog Kim et al., “Development of Monte Carlo Depletion Code MCDEP,” Proceedings of KNS 2003 Spring Mtg., Gyeongju, Korea (2003).
10. Kang Seog Kim et al., “Generation of Resonance Integral Table for the Transport Lattice Code Using MCNP,” Proceedings of KNS 2003 Autumn Mtg., Yongpyong, Korea (2003).
11. Kang Seog Kim et al., “Development of LIBERTE/MASTER Nuclear Design Code Package,” Proceedings of KNS 2003 Autumn Mtg., Yongpyong, Korea (2003).
12. H. Y. Kim, H. G. Joo, Kang Seog Kim et al., “Estimation of Reactor Core Calculation by HELIOS/MASTER at Power Generating Condition Through DeCART, Whole-Core Transport Code,” Proceedings of KNS 2003 Autumn Mtg., Yongpyong, Korea (2003).
13. K. B. Lee, J. W. Chang, Kang Seog Kim, Y. I. Kim, “Comparison of the KALIMER Core Calculation Results with the MCDEP Monte Carlo Depletion Code and the K-Core computing system,” Proceedings of KNS 2004 Spring Mtg., Kyeongju, Korea (2004).
14. J. Y. Cho, Kang Seog Kim, C. C. Lee, “Transient MOC Calculation within the CMFD Franmework,” Proceedings of KNS 2004 Autumn Mtg., Yongpyong, Korea (2004).
15. Kang Seog Kim et al., “General Geometry Capability in the Transport Lattice code LIBERTE,” Proceedings of KNS 2004 Autumn Mtg., Yongpyong, Korea (2004).
16. Kang Seog Kim et al., “Forced Structured Coarse Mesh Finite Difference Method for the Unstructured Mesh Transport problems,” Proceedings of KNS 2004 Autumn Mtg., Yongpyong, Korea (2004).

17. J. Y. Cho, Kang Seog Kim, C.C. Lee, “DeCART Benchmark Calculation for LWR Next Generation Fuels,” Proceedings of KNS 2005 Spring Mtg., Jeju, Korea (2005).
18. K. H. Lee, Kang Seog Kim et al., “Benchmark Calculation for GT-MHR using HELIOS/MASTER Code Package and MCNP,” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
19. H. C. Lee, Kang Seog Kim et al., “Two Step Procedure using 1-D Slab Spectral Geometry in Pebble Bed Reactor Core Analysis,” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
20. H. C. Lee, Kang Seog Kim et al., “The Equivalent Cylinder Models for the Homogenization of Pebble Bed Reactor Cores,” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
21. Y. H. Kim, Kang Seog Kim, J. M. Noh, “Reactivity-Equivalent Physical Transformation for Homogenization of Double-Heterogeneous Fuels,” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
22. Kang Seog Kim et al., “Two-Step Procedure Development for the VHTR Physics Analysis using 1-D Core Model,” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
23. D. S. Oh, Y. S. Yang, Y. H. Lee, Ch. H. Shin, Kang Seog Kim et al., “Feasibility study of double-cooled annular fuel with KSNP(II),” Proceedings of KNS 2005 Autumn Mtg., Busan, Korea (2005).
24. H. Qian, H. C. Lee, Kang Seog Kim, J. M. Noh, “A Preliminary NCNP Solution to the IAEA CRP-5 Pebble Box Benchmark Problem,” Proceedings of KNS 2006 Spring Mtg., Gangchon, Korea (2006).
25. Y. H. Kim, Kang Seog Kim et al., “Preservation of Fuel Characteristics in the RPT Method,” Proceedings of KNS 2006 Spring Mtg., Gangchon, Korea (2006).
26. Kang Seog Kim et al., “MERIT Code Development for the Generation of Intermediate Resonance Parameters and Resonance Integral Tables,” Proceedings of KNS 2006 Spring Mtg., Gangchon, Korea (2006).
27. Kang Seog Kim et al., “Development of a Master Library for the Transport Lattice Code LIBERTE,” Proceedings of KNS 2006 Spring Mtg., Gangchon, Korea (2006).
28. J. M. Noh, H. C. Lee, Kang Seog Kim, Y. H. Kim, “An Adaptation of the HELIOS/MASTER Code System to the Analysis of VHTR Cores,” Proceedings of KNS 2006 Spring Mtg., Gangchon, Korea (2006).
29. Kang Seog Kim et al., “Development of the Optimization Procedure for the Number of Neutron Energy Groups and Boundaries in the VHTR Physics Analysis,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
30. K. H. Lee, Kang Seog Kim et al., “Control Rod Treatment in the HELIOS/MASTER Code Package for the Prismatic VHTR Physics Analysis,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
31. K. H. Lee, J. Y. Cho, Kang Seog Kim et al., “Assessment of DeCART for Numerical Benchmark Problems Based on the Compact Nuclear Power Source Critical Experiments,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
32. J. Y. Cho, Kang Seog Kim, C. C. Lee, “Benchmark Calculation for the VHTR 2-D Core by Using the DeCART Code,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
33. J. Y. Cho, Kang Seog Kim, C. C. Lee, H. G. Joo, “CMFD Formulation for a Hexagonal MOC Transport Calculation,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
34. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, “Convergence Analysis of the Rebalance Methods of Discrete Ordinates Transport Equation for Eigenvalue Problem,” Proceedings of KNS 2007 Autumn Mtg., Pyeongchang, Korea (2007).
35. H. C. Lee, Kang Seog Kim, J. M. Noh, “A Two-Step Diffusion Solution to the Doubly Heterogeneous PBMR-400 Problem,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
36. H. C. Lee, H. Qian, Kang Seog Kim, J. M. Noh, “Two-Step Diffusion Solution to the IAEA CRP5 Pebble Box Benchmark Problem,” Proceedings of KNS 2006 Autumn Mtg., Gyeongju, Korea (2006).
37. Kang Seog Kim et al., “Development of the GEOSHIELD Program for the Particle Transport Calculation Using DORT,” 2006 Autumn Mtg. of the Korean Association for Radiation Protection,

Gyeongju, Korea (2006).
38. Kang Seog Kim et al., “Quantification of the Neutron Streaming Effect in the Prismatic NGNP Fuel Blocks,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
39. Kang Seog Kim et al., “Resonant and Heterogeneous Effects in the Doubly Heterogeneous Particulate Fuels,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
40. S. G. Hong, N. Z. Cho, Kang Seog Kim, J. S. Song, “A Rapidly Convergent Generalized Rebalance Method (GRM) for Discrete Ordinates Transport Equations,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
41. Kyung-Hoon Lee, Kang Seog Kim, Jae-Seung Song, Jae-Man Noh, Sung-Quun Zee, “Physics Analysis of a Prismatic VHTR with Asymmetric Control Rods by Using the HELIOS/MASTER Code Package,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
42. Jin-Young Cho, Hyong-Jin Shim, Kang Seog Kim, Chung-Chan Lee, Sung Quun Zee, “DeCART Solutions for C5G7 Hexagonal Variation Problem,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
43. Jin-Young Cho, Kang Seog Kim, Chung-Chan Lee, Sung Quun Zee, Han-Gyu Joo, “Error Reduction of the Axial Kernel of the DeCART Code,” Proceedings of KNS 2007 Spring Mtg., Jeju, Korea (2007).
44. Jin-Young Cho, Hyung-Jin Shim, Kang Seog Kim, Jae-Seung Song, Chung-Chan Lee, “Development of a Burnup Program based on the Krylov Subspace Method,” Proceedings of KNS 2007 Autumn Mtg., Pyeongchang, Korea (2007).
45. Hyung Jin Shim, Kang Seog Kim, Jae Seung Song, Chang Hyo Kim, “Implementation of a Multigroup Cross-Section Generation Capability into McCARD,” Proceedings of KNS 2008 Spring Mtg., Gyeongju, Korea (2008).
46. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, “Multi-Group Library Processing for the Transport Lattice Code KARMA,” Proceedings of KNS 2008 Spring Mtg., Gyeongju, Korea (2008).
47. Kang Seog Kim, Ser Gi Hong, Jae Seung Song, “Improvements on MERIT 1.1 and SUBDATA 1.1 and a New Procedure for Resonance Integral Adjustment,” Proceedings of KNS 2009 Fall Mtg., Gyeongju, Korea (2009).
48. Kang Seog Kim, Ser Gi Hong, Jin Young Cho, Jae Seung Song, “Transport Lattice Code KARMA 1.1,” Proceedings of KNS 2009 Fall Mtg., Gyeongju, Korea (2009).
49. Kang Seog Kim, Matthew A. Jessee and Mark D. DeHart, “The Conventional and the Partial Current Based Unstructured Coarse Mesh Finite Difference Method on NEWT,” Proceedings of KNS 2009 Fall Mtg., Gyeongju, Korea (2009).
50. Ser Gi Hong, Kang Seog Kim, Jae Seung Song, “A Direct Iteration Method using Resonance Integral Table for the Self-Shielding Calculations,” Proceedings of KNS 2009 Fall Mtg., Gyeongju, Korea (2009).
51. Kang Seog Kim, Ser Gi Hong, “A New Procedure for Resonance Integral Table with Pre-Adjusted Resonance Interference Effect for Transport Lattice Codes,” Proceedings of KNS 2010 Spring Mtg., Pyeongchang, Korea (2010).
52. Kyung Hoon Lee, Kang Seog Kim, Ser Gi Hong, Jae Seung Song, “KARMA 1.1 Benchmark Calculations for the B&W Critical Experiments with ENDF/B-VI R8 and ENDF/B-VII R0,” Proceedings of KNS 2010 Spring Mtg., Pyeongchang, Korea (2010).
53. Kang Seog Kim, Ser Gi Hong, “Application of the Method of Characteristics to Slowing-Down Calculation for an Explicit Geometrical Effect,” Proceedings of KNS 2010 Fall Mtg., Jeju, Korea (2010).
54. Kang Seog Kim, “Temperature-Dependent Resonance Treatment in the Direct Resonance Integral Method,” Proceedings of KNS 2010 Fall Mtg., Jeju, Korea (2010).
55. Kang Seog Kim, Sung Jin Kim, Ser Gi Hong, Jin Young Cho, “Implementation of the Gamma Transport Calculation Module in KARMA 1.2,” Transactions of Korean Nuclear Society Spring Meeting, Taebaek, Korea, May 25-27, 2011 (2011).

56. Sung Jin Kim, Kyung-Hoon Lee, Ser Gi Hong, Kang Seog Kim, “Core Follow Calculation of KARMA/MASTER System for Yonggwang Unit1,” Transactions of Korean Nuclear Society Fall Meeting, Gyeongju, Korea, October 26-28, 2011 (2011).
57. Ho Jin Park, Ser Gi Hong, Kang Seog Kim, Jin Young Cho, Sang Yoon Park, “Generation of Transport Lattice code KARMA Library with Doppler-Broadening Rejection Correction Method,” Transactions of Korean Nuclear Society Fall Meeting, Gyeongju, Korea, October 25-26, 2012 (2012).
58. Kyunghoon Lee, Kang Seog Kim, “An In-scattering Transport Correction by Neutron Leakage Conservation Method and Its Application to DeCART Multigroup Library,” Transactions of Korean Nuclear Society Fall Meeting, Changwon, Korea, December 16-18, 2020 (2020).

E. Books

1. S. H. Kim et al. (Co-author), “In-core Fuel Management,” Hyungseol Publishing Co. (2010)

F. Technical Reports

1. Kang Seog Kim et al., “Evaluation of Peaking Factors Uncertainty for CASMO-3,” KAERI/TR-628/1996 (1996).
2. Kang Seog Kim et al., “CASMO-3/MASTER Pin Power Benchmarking for the B&W Critical Experiments,” KAERI/TR-656/1996 (1996).
3. Kang Seog Kim et al., “Feasibility study of SMART core with soluble boron,” KAERI/TR-1666/2000 (2000).
4. Sung Quun Zee et al., “A study on the Nuclear Characteristics of Enriched Gadolinia Burnable Absorber Rods,” KAERI/RR-2120/2000 (2000).
5. C. C. Lee, Kang Seog Kim et al., “A Feasibility study for the application of enriched gadolinia burnable absorber rods in nuclear core design,” KAERI/TR-1713/2001 (2001).
6. Kang Seog Kim et al., “Development of Monte-Carlo depletion code MCDEP,” KAERI/TR-2298/2002 (2002).
7. Kang Seog Kim et al., “LIBERTE methodology,” KAERI/TR-2304/02 (2002).
8. J. S. Song, Kang Seog Kim et al., “Methodology of dynamic control rod worth for PWR,” KAERI/TR-2305/2002 (2002).
9. Kang Seog Kim et al., “Development of the Ex-core Detector Response Determination for Dynamic Control Rod Worth Measurement,” KAERI/TR-2359/2003 (2003).
10. J. Y. Cho, H, G, Joo, Kang Seog Kim et al., “Three-Dimensional Whole Core Transport Calculation Methodology of the DeCART Code,” KAERI/TR-2365/2003 (2003).
11. J. Y. Cho, Kang Seog Kim et al., “Development of a Reactivity Worth Correction Scheme for the One-Dimensional Transient Analysis,” KAERI/TR-2593/2003 (2003).
12. Kang Seog Kim et al., “Resonance Treatment Methodology in DeCART Code,” KAERI/TR-2611/2003 (2003).
13. Kang Seog Kim et al., “The Numerical Nuclear Reactor for High-Fidelity Integrated Simulation of Neutronic, Thermal Hydraulic, and Thermo-Mechanical Phenomena,” KAERI/RR-2510/2003 (2003).
14. Sung Quun Zee et al., “Development of Dynamic Control Rod Worth Measurement Methodology and Computer Code System for PWR,” KAERI/CR-150/2002 (2003).
15. K. B. Lee, Kang Seog Kim et al., “A Validation Report for the KALIMER Core Design Computing System by the Monte Carlo Transport Theory Code,” KAERI/TR-2761/2004 (2004).
16. J. Y. Cho, Kang Seog Kim et al., “Transient Capability of the DeCART Code,” KAERI/TR-2930/2005 (2005).
17. Kang Seog Kim et al., “Depletion Methodology in the 3-D Whole Core Transport Code DeCART,” KAERI/TR-2928/2005 (2005).
18. Kang Seog Kim et al., “DeCART v1.1 User’s Manual,” KAERI/TR-2966/2005 (2005).
19. C. H. Shin, Kang Seog Kim et al., “Coupling Calculation of CFD-ACE Computational Fluid

Dynamics Code and DeCART Whole-Core Neutron Transport Code for Development of Numerical Reactor," KAERI/TR-2974/2005 (2005).
20. Kang Seog Kim et al., "Verification of HELIOS/MASTER Nuclear Analysis System for SMART Research Reactor," KAERI/TR-3019/2005 (2005).
21. Kang Seog Kim et al., "Development of the HELIOS/MASTER Two-Step Procedure for the Prismatic VHTR Physics Analysis," KAERI/TR-3233/2006 (2006).
22. K. H. Lee, Kang Seog Kim et al., "IAEA GT-MHR Benchmark Calculations Using the HELIOS/MASTER Two-Step Procedure," KAERI/TR-3234/2006 (2006).
23. Kang Seog Kim et al., "Development of the GEOSHIELD Program for the Automatic Particle Transport Calculation Using DORT," KAERI/TR-3262/2006 (2006).
24. Kang Seog Kim et al., "Development of ANJOYMC Program for Automatic Generation of Monte Carlo Cross Section Libraries," KAERI/TR-3371/2007 (2007).
25. Jin Young Cho, Kang Seog Kim et al., "Nodal Solutions of the SP_N Transport Equation for the DeCART Code," KAERI/TR-3428/2007 (2007).
26. Jin Young Cho, Kang Seog Kim et al., "Whole Core Transport Calculation Methodology for a Hexagonal Core," KAERI/TR-3434/2007 (2007).
27. Jin Young Cho, Kang Seog Kim et al., "DeCART v1.2 User's Manual," KAERI/TR-3438/2007 (2007).
28. Kang Seog Kim et al., "Development of Advanced Suite of Deterministic Codes for VHTR Physics Analysis," KAERI/RR-2747/2006 (2007).
29. Won Jae Lee et al., "Development of Very High Temperature Reactor Design Technology," KAERI/RR-2753/2006 (2007).
30. Jin Young Cho, Kang Seog Kim et al., "Development of a Burnup Module DECBURN Based on the Krylov Subspace Method," KAERI/TR-3579/2008 (2008).
31. Kyung Hoon Lee, Bon Seung Koo, Kang Seog Kim et al., "Benchmark Matrix for Verification and Validation of the KARMA Code," KAERI/TR-3667/2008 (2008).
32. Kang Seog Kim et al., "Development of a Multi-Group Neutron Cross Section Library Generation System for PWR," KAERI/TR-3634/2007 (2008).
33. Yong Hee Kim et al., "Maximization of Transuranic Deep-Burn in High Temperature Gas-Cooled Reactor," KAERI/RR-3021/2007 (2008).
34. Kang Seog Kim, "KARMA 1.1 Code Methodology Manual," S06NX08-A-2-TR-07 Rev.0 (2010).
35. Kang Seog Kim, "KARMA 1.1 Code User's Manual," S06NX08-A-2-TR-08 Rev.0 (2010).
36. Kang Seog Kim, "Verification and Validation of The Transport Lattice Code KARMA 1.1," S06NX08-A-2-TR-09 Rev.0 (2010).
37. Kang Seog Kim, "KARMA 1.1 Code Programmer's Manual," S06NX08-A-2-TR-10 Rev.0 (2010).
38. Kang Seog Kim et al., "Assessment of the Applicability of the SCALE Computer Code System to Small Modular Reactor Design," ORNL/LTR-2012/474 (2012).
39. Kang Seog Kim, "Review on the Neutronics Code Package PROTEUS of the NEAMS ToolKit," ORNL/LTR-2013/341 (2013).
40. Kang Seog Kim et al., "Subgroup Data Generation for the Resonance Self-Shielding Calculation in the NEAMS Neutronics Simulation," ORNL/LTR-2013/427 (2013).
41. Kang Seog Kim et al., "Review of the CASL Core Simulator MPACT," CASL-U-2014-0046-000 (2014).
42. Kang Seog Kim et al., "VERA-CS Improvements," CASL-S-2014-0178-000 (2014).
43. Kang Seog Kim et al., "Development of Transient and Epithermal Upscattering Resonance Data for the V4.x MPACT Library," CASL-U-2015-0169-000 (2015).
44. Kang Seog Kim et al., "Improvement of the VERA Neutronics Simulator MPACT," CASL-S-2015-0289-000 (2015).
45. Kang Seog Kim et al., "Development of a New Lattice Physics Methodology for TRISO and FCM Fuels," RNSD-TN-15-020 (2015).
46. Kang Seog Kim et al., "SUBGR: A Program to Generate Subgroup Data for the Subgroup Resonance Self-Shielding Calculation," ORNL/TM-2016/154 (2016).
47. Kang Seog Kim et al., "Subgroup Benchmark Calculations for the Intra-Pellet Non-Uniform Temperature Cases," ORNL/TM-2016/153, CASL-U-2016-1069-000 (2016).

48. Co-author, ”SCALE Cross-Section Libraries,” ORNL/TM-2016/115 (2016).
49. Co-author, “3.2 POLARIS - 2D Light Water Reactor Lattice Physics Module,” ORNL/TM-2016/84 (2016).
50. Co-author, “Cross Section Workshop Summary,” ORNL/TM-2016/70, CASL-U-2016-1031-000 (2016).
51. Benjamin Collins, Kang Seog Kim et al. “Summary of VERA Core Simulator Performance Improvements,” CASL-U-2016-1171-000 (2016).
52. Kang Seog Kim et al., “Specification for the VERA Depletion Benchmark Suite,” ORNL/TM-2016/53 (2016).
53. Kang Seog Kim et al., “Procedure to Generate the MPACT Multigroup Library,” ORNL/TM-2016/52, CASL-U-2015-1013-000 (2016).
54. Kang Seog Kim et al., “Assessment of the MPACT Resonance Data Generation Procedure,” ORNL/SR-2016/360, CASL-U-2016-1164-000 (2016).
55. Kang Seog Kim et al., “Generation of the V4.2m5 and AMPX and MPACT 51 and 252-Group Libraries with ENDF/B-VII.0 and VII.1,” ORNL/TM-2016/555, CASL-U-2016-1177-000 (2016).
56. Kang Seog Kim et al., “Development of the V4.2m5 and V5.0m0 Multigroup Cross Section Libraries for MPACT for PWR and BWR,” ORNL/TM-2017/95, CASL-U-2017-1280-000 (2017).
57. Xinyan Wang, Yuxuan Liu, William Martin, Kang Seog Kim, “Energy deposition analysis of VERA progression problems using MCNP6,” CASL-U-2017-1399-000 (2017).
58. Kang Seog Kim, “Investigation of Neutron Leakage Conservation Method to Generate H-1 Transport Correction Factors,” ORNL/TM-2016/266, CASL-U-2016-1163-000 (2017).
59. Kevin Clarno, Kang Seog Kim, Cihangir Celik, Dorothea Wiarda, Mark Williams, Yuxuan Liu, “Software Quality Assurance and Verification for the MPACT Library Generation Process,” CASL-U-2017-1326-000 (2017).
60. Kang Seog Kim et al., “Neutron Capture Energies for Flux Normalization and Approximate Model for Gamma-Smeared Power,” CASL-U-2017-1377-000 (2017).
61. Kang Seog Kim et al., “VERA Depletion Benchmark Results by VERA-CS, SERPENT and McCARD with ENDF/B-VII.0,” CASL-U-2017-1435-000 (2017).
62. Co-author, “Development of Ultra-Fine Multigroup Cross Section Library of the AMPX/SCALE Code Packages,” CASL-U-2018-1507-000 (2018).
63. Kang Seog Kim et al., “Verification and Validation of the ENDF/B-VII.1 v4.3m1 MPACT 51-group Cross Section Library,” CASL-U-2018-1528-000 (2018).
64. Co-author, “MPACT Development Activities,” CASL-U-2018-1672-000 (2018).
65. A. Godfrey, Co-author, “Watts Bar Unit 1 Source Range Detector Response Validation During Refueling,” CASL-U-2018-1561-000 (2018).
66. K.S. Kim, F. Bostelmann, A.M. Holcomb, G. Ilas, W.A. Wieselquist, “Verification and Validation of the AMPX multigroup libraries for advanced reactor analysis,” ORNL/SPR-2018/1014 (2019).
67. E. Davidson, F. Franceschini, K.S. Kim, “ATF Benchmark Problems,” CASL-U-2019-1847-000 (2019).
68. K.S. Kim, D. Wiarda, A. Holcomb, “Development of the ENDF/B-VIII.0 MPACT 51-Group Cross Section Library and Enhancement of Simplified AMPX Capability,” CASL-U-2019-1809-000 (2019).
69. Eva Davidson, F. Franceschini, K.S. Kim, “ATF Benchmark Problems,” CASL-U-2019-1847-000 (2019).
70. K.S. Kim, M.A. Jessee, “Development of the Perturbed MPACT Multigroup Libraries and the Perturbation Methodology,” CASL-U-2019-1849-000 (2019).
71. K.S. Kim, A. Holcomb, F. Bostelmann, D. Wiarda, W. Wieselquist, “Improvement of the SCALE-XSProc Multigtoup Cross Section Processing Procedure for High Temperature Gas Cooled Reactor Analysis,” ORNL/SPR-2020/1429 (2020).
72. K.S. Kim, A. Holcomb, S. Palmtag, M. Asgari, “Evaluation of the ENDF/B-VII.1 MPACT 51-Group Library for the BWR Analysis,” ORNL/TM-2020/1616 (2020).
73. M. Asgari, B. Collins, R. Salko,Kacem Hizoum, K.S. Kim, J. Jones, K. Gamble, A. Toptan, S. Palmtag, T. Downar, B. Kochunas, T. Kozlowski, "Status Update Report for Modeling and Analysis of Exelon BWRs for Eigenvalue & Thermal Limits Predictability," ORNL/TM-2020/1759

(2020).
74. K.S. Kim, E. Walker, B.S. Collins, M.A. Jessee, T. Pandya, U. Mertyurek, A. Graham, “Neutron-Gamma Coupled Transport Capability for Gamma Detector Response,” ORNL/TM-2021/1926 (2021).
75. K.S. Kim, C. Lawing, S. Palmtag, M. Asgari, M.A. Jessee, “Development of the ENDF/B-VII.1 v5.1m0 MPACT 60-Group Library for the BWR and PWR analysis,” ORNL/TM-2020/1782 (2021) (In revision).
76. B.K. Jeon, W.S. Yang, K.S. Kim, “Development of Double-Heterogeneous Modelling Capability of the SCALE/Polaris Code Packages,” ORNL/TM-2021/2337 (2021) (In review).
77. M. Asgari, D. Kropaczek, A. Graham, R. Salko, K.S. Kim, K. Gamble, A. Toptan, S. Palmtag, T. Downar, B. Kochunas, T. Kozlowski, “Final Report for ‘Modeling and Analysis of Exelon BWRs for Eigenvalue & Thermal Limits Predictability’ Project,” ORNL/TM-2021/2349 (2021).
78. A. Graham, K.S. Kim, “On-the-Fly Energy Condensation for Whole-Core Multiphysics Simulations,” ORNL/TM-2023/2927 (2023).
79. K.S. Kim, M.A. Jessee, W.A. Wieselquist, “Pin Peaking Factor Uncertainty of the SCALE 6.3/Polaris through Benchmarking the LWR Critical Experiments,” ORNL/TM-2023/2979, Oak Ridge National Laboratory (2023).
80. K.S. Kim. U. Mertyurek, W.A. Wieselquist, “Benchmark Calculation for the Watt Bar Unit 1 Cycles 1−3 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/2981, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
81. K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the BEAVRS Cycles 1−2 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/2977, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
82. B.K. Jeon, K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the Surry Unit 1 Cycles 1−3 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/3039, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
83. B.K. Jeon, K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the Turkey Point Unit 3 Cycles 1−3 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/3061, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
84. K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the Peach Bottom Unit 2 Cycles 1−3 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/2983, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
85. K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the Hatch Unit 1 Cycles 1−3 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/2991, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
86. K.S. Kim. W.A. Wieselquist, “Benchmark Calculation for the Quad Cities Unit 1 Cycles 1−2 Using the SCALE 6.3/Polaris-PARCS v3.4.2 Code Package,” ORNL/TM-2023/3002, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
87. K.S. Kim, B.K. Jeon, A. Ward, U. Mertyurek, M.A. Jessee, W.A. Wieselquist, “SCALE 6.3 Validation: Reactor Physics,“ ORNL/TM-2023/3060, Oak Ridge National Laboratory, Oak Ridge, TN (2023).
88. W. Gurecky, K.S. Kim, M.A. Jessee, W.A. Wieselquist, “Polaris-PARCS Sensitivity Study for LWR Fuel Cycles Part I: Polaris Input Option Sensitivity,” ORNL/TM-2024/6, Oak Ridge National Laboratory, Oak Ridge, TN (2024). (ORNL internal review)

INVITED TALKS & PRESENTATIONS

1. Kang Seog Kim, “Monte Carlo Resonance Treatment for the Deterministic Transport Lattice Code,” Seoul National University, Nov. 11, 2003.
2. Kang Seog Kim, “Transport Lattice Code LIBERTE and Nuclear Design Code Package LIBERTE/MASTER,” KEPCO Nuclear Fuel Company Ltd., Dec. 15, 2003.
3. Kang Seog Kim, “Library Generation and Resonance Treatment Methods in LIBERTE and DeCART,” KAIST (Korea Advanced Institute of Science and Technology), Sept. 16, 2004.
4. Kang Seog Kim, “Nuclear Design Procedure for High Temperature Gas Cooled Reactors,”

KEPCO Research Institute, Aug. 29, 2007.
5. Kang Seog Kim, “Multi-group Library Generation for Neutron Transport Lattice Codes,” KEPCO Nuclear Fuel Company Ltd., Nov. 17, 2009.
6. Kang Seog Kim, “KARMA 1.1 Methodology and How to use,” KHNP Nuclear Engineering & Technology Institute, Aug. 31, 2010.
7. Kang Seog Kim, “Methodologies for Transport Lattice Codes Based on KARMA and Multi-group Library Generation for Neutron Transport Lattice Codes,” Expert Conference on the Nuclear Reactor Physics Methods, Ulsan National Institute of Science and Technology, Feb. 22-23, 2011.
8. Kang Seog Kim, “Advancement of Multigroup Cross Section Processing and Resonance Self-Shielding Methodology for High-Fidelity Transport Calculation,” KAERI, May 30, 2017.
9. Kang Seog Kim, “Advancement of Multigroup Cross Section Processing and Resonance Self-Shielding Methodology for High-Fidelity Transport Calculation,” KEPCO-NF, May 31, 2017.
10. Mark L. Williams, Dorothea Wiarda, Kang Seog Kim, Cihangir Celik, “Multigroup Data Libraries for SCALE Applications,” 2017 SCALE Users’ Group Workshop, Sept. 27, 2018.
11. Kang Seog Kim et al., “The AMPX/SCALE Capability with the AMPX 1597-group Library for Advanced Reactor Analysis,” 2018 SCALE Users’ Group Workshop, Aug. 27-29, 2018.
12. Kang Seog Kim et al., “The SCALE Multigroup Capability and Challenges in Advanced Reactor Analysis: Cross Section Library and Processing,” 2019 SCALE Users’ Group Workshop, Aug. 19-20, 2019.
13. Kang Seog Kim, Erik Walker, Andrew Godfrey, “CASL VERA Benchmark Results with ENDF/B-VII.1 and VIII.0 for the Pressurized Water Reactors,” 2019 CSEWG Meeting, Brookhaven National Laboratory, Nov. 4-6, 2019. (https://indico.bnl.gov/event/6642/contributions/32059/)
14. Kang Seog Kim, “Introduction to Resonance Self-Shielding Methods in SCALE: XSProc and ESSM,” 2020 SCALE Users’ Group Workshop, July 27-29, 2020.
15. Kang Seog Kim, “Investigation on the Reactivity Underestimation of ENDF/B-VIII.0 Compared to ENDF/B-VII.1 for Thermal Reactor Analysis,” 2020 CSEWG Meeting, Brookhaven National Laboratory, Nov. 30-Dec. 2, 2020. (https://indico.bnl.gov/event/7233/contributions/43847/)
16. Kang Seog Kim, “Multigroup Cross Section Processing Capability of the SCALE-6.3 XSProc for Non-LWR analysis,” 2021 SCALE Users’ Group Workshop, August 4-6, 2021.
17. Kang Seog Kim, “Spatially Dependent Resonance Self-Shielding Capability for Non-Uniform Temperature in SCALE-6.3 XSProc-BONAMI,” 2022 SCALE Users’ Group Workshop, April 28, 2022.
18. Kang Seog Kim et al., “SCALE-6.3.0/Polaris-PARCS v3.4.2 Validation: Reactor Physics,” 2023 SCALE Users’ Group Workshop, April 27, 2023.

THESIS COMMITTEE, STUDENT ADVISING AND MENTORING

1. Byoung Kyu Jeon, University of Michigan, Ph.D. Candidate, “SCALE MG Cross Section Processing for BWR and Fast Reactors using the AMPX 1597-group Library” (2018 Summer intern).
2. Byoung Kyu Jeon, Purdue University, Ph.D. Candidate, “Assessment of Multigroup Cross Section Processing of the AMPX/SCALE Code Packages for Fast Systems” (2017 Summer intern).
3. Cole Gentry, University of Tennessee, Ph.D., “Development of a Reactor Physics Analysis Procedure for the Plank-Based and Liquid Salt-Cooled Advanced High Temperature Reactor” (2015).
4. Hansol Park, Ph.D. candidate, Seoul National University, “Resonance self-shielding methods” (2015, US-ROK INERI intern).
5. Yuxuan Liu, University of Michigan, Ph.D., “Improved Deterministic Self-Shielding Method for Distributed Self-Shielding Effect and Resonance Interference” (2014).
6. Hojin Park, Seoul National University, “Generation of assembly-homogenized few group constants and estimation of their uncertainties by Monte Carlo method” (2011).

HONORS AND AWARDS

US-DOE National R&D 100 Awards (November 4, 2016)
"Virtual Environment for Reactor Applications" https://www.ornl.gov/news/ornl-wins-seven-rd-100-awards
Oak Ridge National Laboratory Significant Event Award (October, 2016)
"The High-Fidelity Benchmark of the CASL Virtual Environment for Reactor Applications Against Data from the Full Operating History of TVA's Watts Bar Nuclear Power Plant"
Oak Ridge National Laboratory Significant Event Award (December, 2015)
"Significant Improvement in Computational Performance of the VERA Core Simulator to Meet Industry Objectives for Adoption"
Oak Ridge National Laboratory Significant Event Award (April, 2013)
"Technical Advancements in Nuclear Data Processing that Provide Unprecedented Accuracy for CASL and NRC Reactor Physics Analysis"
Best paper award at KNS 2011 Spring Meeting
"Implementation of the Gamma Transport Calculation Module in KARMA 1.2"
Best paper award at KNS 2007 Spring Meeting
"Physics Analysis of a Prismatic VHTR with Asymmetric Control Rods by Using the HELIOS/MASTER Code Package"
Best paper award at KNS 2006 Autumn Meeting
"A Two-Step Diffusion Solution to the Doubly Heterogeneous PBMR-400 Problem"
Best paper award at KNS 2006 Spring Meeting
"Preservation of Fuel Characteristics in the RPT Method"
Member of Alpha Nu Sigma (ANS Honor Society in Nuclear Engineering) (2000-)

PROFESIONAL ACTIVITIES

American Nuclear Society (ANS): Member
Korean Nuclear Society (KNS): Member
Annals of Nuclear Energy: Reviewer
Nuclear Science and Engineering: Reviewer
Nuclear Engineering and Technology: Reviewer
Journal of Nuclear Science and Technology: Reviewer
Technical committees and session chairs: Conferences by KNS and ANS, M&C and PHYSOR
Journal of Nuclear Engineering: Editorial board member (2018-present), Guest editor for the special issue for 'nuclear data and resonance self-shielding method'