

HYOUNG K. LEE

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Department of Nuclear Engineering
University of New Mexico

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ACADEMIC EXPERIENCE

- Ph.D.** Nuclear Engineering, University of California, Berkeley, CA, 1995
Dissertation: “Application of a-Si:H Radiation Detectors in Medical Imaging”
Advisor: Selig N. Kaplan
- M.S.** Nuclear Engineering, Seoul National University, Seoul, Korea, 1988
Thesis: “Optimization of Ideal MHD Beta Limit in Axisymmetric Tokamak with Circular Cross Section”
Advisor: Sang Hee Hong
- B.S.** Nuclear Engineering, Seoul National University, Seoul, Korea, 1986

RESEARCH AREAS

- Design, simulation, and building of nuclear imaging systems (x-ray, gamma ray, and neutron)
- Applications of nuclear imaging in medicine, nuclear energy, nuclear safeguards and nonproliferation, homeland security, and nondestructive characterization
- Quantitative and functional nuclear imaging
- Radiation sources for nuclear imaging
- Machine learning for spectroscopy and nuclear imaging
- Digital image processing, analysis, and CT reconstruction

AWARDS AND HONORS

- 2019 **Certificate of Excellence in Reviewing**, Nuclear Engineering and Technology
- 2018 **Keynote Speaker**, 4th World Congress on Medical Imaging and Clinical Research, London, UK
- 2018 **College of Engineering and Computing Graduate Educator** (advisor of the recipient), Missouri S&T
- 2017 **Certificate of Governance**, American Nuclear Society
- 2017 **Integrated University Program Fellowship** (advisor of the recipient), Department of Energy
- 2015 **Best Poster Award, 1st Place**, International Workshop on Imaging, Varenna, Italy
- 2015 **Best Poster Award, 3rd Place**, CBSE Research Symposium, Missouri S&T
- 2015 **Undergraduate Research Ambassador** (advisor of the student), University of Missouri System
- 2014 **Invited Talk at Plenary Session**, APS/CNM/EMC Users Meeting, Argonne National Laboratory.
- 2014 **Undergraduate Research Ambassador** (advisor of the student), University of Missouri System
- 2013 **Undergraduate Research Ambassador** (advisor of the student), University of Missouri System

- 2012 **Faculty Research Award**, Missouri University of Science & Technology
- 2012 **Young Faculty Award**, Defense Advanced Research Programs Agency (DARPA)
- 2012 **CIRMS Student Awards** (advisor of the two recipients), Annual Conference of the Council on Ionizing Radiation Measurements and Standards (CIRMS)
- 2012 **Best Poster Award. 2nd and 3rd Places** (advisor of the two recipients), Graduate Research Showcase Council of Graduate Students (CGS), Missouri S&T
- 2011 **Junior Faculty Award**, Academy of Mines and Metallurgy, Missouri University of Science & Technology
- 2009 **Minister's Citation**, Ministry of Education, Science and Technology, Korea
- 2005 **Research Advisor Award in Medical Physics**, Korean Society of Medical Physics, Korea

PATENTS

Total: 11 registered and 3 pending patents

- 2018 Patent Pending, US 62/729,150, "Fluid-Cooled Compact X-Ray Tube and System Including the Same"
- 2017 Patent Pending, US 16/027,632, "Switchable Radiation Source"
- 2016 Patent Pending, US 62/620,457, "Computer-Aided Detection of Oral Lesions on CT Images"
- 2016 Patent No. US 9,299,526, "Method to Fabricate Portable Electron Source Based on Nitrogen Incorporated Ultrananocrystalline Diamond (N-UNCD)"
- 2008 Patent No. US 7,339,159 B2, "Phantom for evaluating accuracy of image registration software"
- 2008 Patent No. 10-0863747 (Korea), "An apparatus for computerized tomography comprising a pair of synchronized gantries"
- 2007 Patent No. 10-0680700 (Korea), "A digital radiography system using a flat-panel type x-ray source and the method of using the same"
- 2007 Patent No. 10-0687654 (Korea), "A digital x-ray detector module and the manufacturing method thereof"
- 2007 Patent No. WO2007061152 (PCT/KR2005-4352), "A digital x-ray detector module and the manufacturing method thereof"
- 2005 Patent No. 10-0516371-0000 (Korea), "Quality inspection method and equipment of antiscatter grid for digital radiography system using x-ray film and film digitizer"
- 2004 Patent No. 10-0465526-0000 (Korea), "Method for processing digital x-ray image"
- 2003 Patent No. 20-0321447-0000 (Korea), "Frame for fixing the whole body in regular position for radiotherapy"
- 2003 Patent No. 20-0321814-0000 (Korea), "Heterogeneous phantom for radiation dosimetry"
- 2003 Patent No. 20-0326096-0000 (Korea), "Phantom for accuracy evaluation of image registration"

WORK EXPERIENCE

A. Academic Experience

- Aug. 2020 – Present:** **University of New Mexico, Albuquerque, NM**
 Aug. 2020 – Present *Professor and Chair*, Department of Nuclear Engineering
- Sept. 2009 – Present:** **Missouri University of Science and Technology, Rolla, MO**
 Sept. 2019 – Present *Professor*, Mining and Nuclear Engineering Department
 Sept. 2013 – June 2019 *Associate Chair*, Mining and Nuclear Engineering Department
 Sept. 2013 – June 2019 *Chair*, Nuclear Engineering Program

Sept. 2013 – Dec. 2017 **Director**, Nuclear Reactor (MSTR)

Sept. 2011 – Present **Associate Professor**, Mining and Nuclear Engineering Department

Sept. 2009 – Aug. 2011 **Assistant Professor**, Mining and Nuclear Engineering Department

- Carried out various duties for the Nuclear Engineering Program: led strategic planning, managed accounts, oversaw faculty research, teaching and service activities, conducted faculty meetings, managed graduate student admission, advised student organizations, oversaw staff activities, administered NE Development Board meetings and related matters, ran NE Summer Camps, published NE Newsletters, fact sheets and brochures, prepared for ABET evaluation, and maintained NE facilities and equipment among other duties.
- Hired three additional tenure-track and non-tenure-track junior faculty, reaching the largest faculty size in the history of the Missouri S&T NE program and maintained a 100% faculty retention rate.
- Mentored junior faculty to improve proposal writing skills and helped them stay on the right track towards tenure.
- Received many research grants amounting \$9.6M from NRC, DOE, DOEEd, DARPA, ARL, national lab, and industry
- Research outputs include a benchtop scale CT, prototypes of compact x-ray tubes for stationary 4D CT, algorithms to reconstruct neutron CT and to enhance neutron images of irradiated nuclear fuels, prototypes of a flat-panel x-ray source, neutron and x-ray combined CT system, etc.

Jul. 1995 – Aug. 2009: The Catholic University of Korea, Seoul, Korea

Apr. 2009 – Aug. 2009: **Professor**, Department of Biomedical Engineering

Apr. 2003 – Mar. 2009: **Associate Professor**, Department of Biomedical Engineering

Apr. 1998 – Mar. 2003: **Assistant Professor**, Department of Biomedical Engineering

Mar. 1997 – Mar. 1998: **Instructor**, Department of Biomedical Engineering

Jul. 1995 – Feb. 1997: **Instructor**, Department of Radiology

- Developed technology to remove antiscatter grid induced Moiré patterns in digital radiography images by precise frequency matching of grid lines and the digital detector array.
- Investigated image sensor characteristics and developed image calibration and pre-processing technology. Developed x-ray image post-processing, system integration, and analysis technologies.
- Developed cone-beam CT reconstruction algorithms based on the FDK technique as well as techniques for micro CT alignment and calibration.
- Developed an electronic portal imaging device (EPID) based on CCD imaging technology.

Mar. 1997 – Apr. 2002: **Medical Physicist**, Department of Nuclear Medicine, Kangnam St. Mary's Hospital

- Performed routine QA for two gamma cameras.
- Developed algorithms and software to quantitatively evaluate kidney functions from multiple renograms.
- Developed 2D reconstruction algorithms based on the maximum likelihood expectation maximization (MLEM) technique.
- Developed software for quantitative analysis of nuclear medicine images.

Jul. 1995 – Feb. 1997: **Medical Physicist**, Department of Radiation Oncology, St. Mary's Hospital

- Performed routine QA for two linacs and one HDR brachytherapy.
- Performed treatment planning for conventional radiation therapy, conformal radiation therapy, and radiosurgery.

- Developed algorithms to calculate real-time patient-absorbed dose from patient exit dosimeter signal during radiation treatment.

Mar. 2005 – Dec. 2006: *Invited Lecturer*, Department of Radiological Technology, Korea University, Seoul, Korea

Mar. 2004 – Dec. 2006: *Invited Lecturer*, Department of Nuclear Engineering, Hanyang University, Seoul, Korea

Mar. 1998 – Jun. 2004: *Invited Lecturer*, Department of Medical Physics, Kyonggi University, Suwon, Korea

Mar. 1996 – Jun. 1996: *Invited Lecturer*, Department of Medical Electronic Engineering, Yonsei University, Wonju, Korea

- Being an expert in the area of radiation detection and medical imaging, I was invited by several universities to teach related courses while working as a full-time faculty member at the Catholic University of Korea.

Sept. 1990 – May 1995: *Graduate Student Research Assistant*, Physics Division, Lawrence Berkeley National Laboratory, Berkeley, CA

- Investigated feasibility of amorphous silicon (a-Si) p-i-n diodes for use in radiation imaging.
- Investigated photoconductive gain mechanism in a-Si devices.
- Characterized a-Si photodiodes in terms of leakage current and photosensitivity.
- Carried out Monte Carlo simulations on a-Si photodiode and CsI(Tl) based gamma camera.
- Developed image filters to reduce scattering effects in gamma cameras.

B. Industrial Experience

Dec. 2006 – Aug. 2009: *R&D Adviser*, Vatech & E-WOO Technology Co., Ltd, Yongin, Korea

- Led a multidisciplinary team to evaluate the performance and characteristics of dental imaging systems.
- Led a multidisciplinary team to develop digital dental x-ray imaging systems of the highest international standards in functionality and quality (Vatech is one of the leading companies in the field of dental imaging, including dental CT).
- Provided solutions to technical difficulties encountered while developing cutting edge technologies in digital dental imaging.
- Provided x-ray imaging physics and hands-on knowledge of radiation measurement.
- Provided a vast amount of technical information on radiation imaging sensors, including flat-panel detectors.
- Developed image processing algorithms for dental panoramic, cephalometric, and CT images.
- Developed fast reconstruction algorithms for cone-beam dental CT using GPU technology.
- Developed 3D-rendering software for dental use.

May 2002 – Aug. 2009: *R&D Adviser*, Jungwon Precision Co., Seoul, Korea

- Provided expertise in x-ray imaging physics and digital radiography technology.
- Developed a method to eliminate grid Moiré patterns in digital radiography images using a grid-detector frequency matching technique.
- Developed a system to measure grid line frequencies using digital radiography or film imaging techniques.

Dec. 2003 – Dec. 2004: R&D Adviser, DR Tech Co., Seongnam, Korea

- Helped resolve technical issues concerning evaluating digital radiographic images in terms of MTF, NPS, and DQE.
- Provided expertise on a-Si/CsI(Tl) based digital radiography.

PROFESSIONAL QUALIFICATIONS

Medical Physics Specialist, accredited by the Korean Society of Medical Physics on September 26, 2002.

RESEARCH GRANTS AND CONTRACTS**2019-2020 Funding Agency: Nuclear Regulatory Commission**

- Title: “Graduate Fellowships in Nuclear Engineering at Missouri S&T (2019-2023)”
- Total Grant: \$400,000 (8/21/2019 – 6/30/2020)
- PI: **H. K. Lee (40%)**, Co-PI: J. Schlegel, A. Alajo, J. Graham

2019-2020 Funding Agency: Army Research Lab (through Leonard Wood Institute)

- Title: “Stationary CT Design for Real-Time 4D Imaging of Traumatic Brain Injury”
- Total Grant: \$329,989 (4/1/2019 – 9/30/2020)
- Sole PI: **H. K. Lee**
- Developed prototypes of compact x-ray tubes and stationary CT architectures for real-time 4D imaging.

2019-2020 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2019-2021)”
- Total Grant: \$200,000 (6/30/2019 – 6/30/2020)
- PI: J. Schlegel; Co-PI: **H. K. Lee (25%)**, C. Castano

2018-2019 Funding Agency: Department of Energy (DOE NEUP)

- Title: “General Reactor Safety Improvement at Missouri S&T Reactor”
- Total Grant: \$249,138 (10/1/2018 – 9/30/2019)
- PI: A. Alajo; Co-PI: **H. K. Lee (10%)**, X. Liu, J. Graham, J. Schlegel, S. Usman
- Upgrade Missouri S&T Reactor for better safety in education and research

2018-2020 Funding Agency: Nuclear Regulatory Commission

- Title: “Missouri S&T Nuclear Engineering Faculty Development Program (2018-2021)”
- Total Grant: \$450,000 (7/16/2018 – 6/30/2020)
- PI: **H. K. Lee (50%)**, Co-PI: H. Wen

2018-2020 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2018-2020)”
- Total Grant: \$200,000 (7/1/2018 – 6/30/2020)
- PI: **H. K. Lee (70%)**, Co-PI: J. Schlegel

2017-2020 Funding Agency: Department of Energy (DOE NEUP)

- Title: “Gamma ray Computed and Emission Tomography for Pool-Side Fuel Characterization”
- Total Grant: \$799,317 (10/1/2017 – 6/30/2020)
- PI: J. Graham; Co-PI: **H. K. Lee (38%)**, N. Woolstenhulme (INL)

- Developed a submersible transmission and emission tomography system to inspect irradiated nuclear fuel

2017-2018 Funding Agency: Sandia National Laboratory

- Title: “Cabinet x-ray system”
- Total Grant: \$150,000 (in-kind) (10/1/2017 – 9/30/2018)
- PI: L. Chen; Co-PI: **H. K. Lee (12.5%)**, D. Beetner, M. Leu, E. Kinzel
- X-ray imaging equipment received from Sandia National Lab

2017-2020 Funding Agency: Nuclear Regulatory Commission

- Title: “Graduate Fellowships in Nuclear Engineering at Missouri S&T (2017-2021)”
- Total Grant: \$400,000 (6/30/2017 – 6/30/2020)
- PI: **H. K. Lee (70%)**, Co-PI: J. Schlegel

2017-2019 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2017-2019)”
- Total Grant: \$200,000 (6/30/2017 – 6/29/2019)
- PI: **H. K. Lee (70%)**, Co-PI: J. Schlegel

2016-2018 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2016-2018)”
- Total Grant: \$200,000 (7/1/2016 – 6/30/2018)
- PI: **H. K. Lee (70%)**; Co-PI: J. Schlegel

2016-2016 Funding Company: Battelle Energy Alliance, LLC (Idaho National Laboratory)

- Title: “LabVIEW Software for High-Resolution CT Reconstruction”
- Total Grant: \$29,405 (3/31/2016 – 9/30/2016)
- Sole PI: **H. K. Lee**
- Developed CT component control and data acquisition software using LabVIEW for a neutron CT at INL

2016-2016 Campus Funding: Center for Biomedical Science and Engineering (CBSE)

- Title: “Study of Electrical Breakdowns in X-ray Sources Based on Field Emission Electrons to Be Used in Stationary CT”
- Total Grant: \$15,530 (1/1/2016 – 12/31/2016)
- Sole PI: **H. K. Lee**
- Studied vacuum breakdown to design a new compact x-ray tube for stationary CT.

2015-2018 Funding Agency: Department of Education

- Title: “Inter-disciplinary Program in Graduate Engineering Education for Advancing Emerging Technologies toward US Energy Security”
- Total Grant: \$922,744 (9/1/2015 – 8/31/2018)
- PI: S. Frimpong; Co-PIs: **H. K. Lee (15%)**, C. Castano, G. Mueller, M. Ge, G. Galecki

2015-2019 Funding Agency: Nuclear Regulatory Commission

- Title: “Missouri S&T Nuclear Engineering Faculty Development Program (2015-2018)”
- Total Grant: \$450,000 (9/30/2015 – 9/29/2019)
- PI: **H. K. Lee (30%)**; Co-PI: A. Alajo, C. Castano and J. Graham

2015-2017 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2015-2017)”

- Total Grant: \$200,000 (9/30/2015 – 9/29/2017)
- PI: **H. K. Lee (70%)**; Co-PI: J. Schlegel

2015-2016 Funding Agency: National Academy for Nuclear Training

- Title: “National Academy for Nuclear Training Fellowships 2015 - 2016”
- Total Grant: \$25,000 (9/1/2015 – 5/31/2016)
- Sole PI: **H. K. Lee**

2014-2019 Funding Agency: Nuclear Regulatory Commission

- Title: “Graduate Fellowships in Nuclear Engineering at Missouri S&T (2014-2018)”
- Total Grant: \$400,000 (8/1/2014 – 7/31/2019)
- PI: **H. K. Lee (60%)**; Co-PI: X. Liu

2014-2016 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T (2014-2016)”
- Total Grant: \$200,000 (8/1/2014 – 7/31/2016)
- PI: **H. K. Lee (60%)**; Co-PI: J. Schlegel

2014-2015 Funding Agency: National Academy for Nuclear Training

- Title: “National Academy for Nuclear Training Fellowships 2014 - 2015”
- Total Grant: \$25,000 (9/1/2014 – 5/31/2015)
- Sole PI: **H. K. Lee**

2014-2014 Funding Company: Vatech, Co., Ltd.

- Title: “Development of Computer-Aided Diagnosis Algorithms for Automatic Detection of Oral Lesions from Dental Images”
- Total Grant: \$72,000 (2/14/2014 – 12/31/2014)
- Sole PI: **H. K. Lee**
- Developed computer-aided diagnosis algorithms to detect oral cancers and cysts from dental images.

2013-2022 Funding Agency: Department of Energy

- Title: “Missouri S&T Fellowship and Scholarship Support”
- Total Grant: \$202,500 (9/1/2013 – 6/30/2022)
- Sole PI: **H. K. Lee**

2013-2018 Funding Agency: Nuclear Regulatory Commission

- Title: “Graduate Fellowship in Nuclear Engineering at Missouri S&T (2013 – 2017)”
- Total Grant: \$400,000 (8/1/2013 – 8/31/2018)
- PI: **H. K. Lee (50%)**; Co-PI: A. Kumar

2013-2017 Funding Agency: Nuclear Regulatory Commission

- Title: “Missouri S&T Faculty Development Program (2013 – 2016)”
- Total Grant: \$345,559 (8/1/2013 – 7/31/2017)
- PI: **H. K. Lee (40%)**; Co-PIs: A. Kumar, X. Liu

2013-2014 Funding Agency: National Academy for Nuclear Training

- Title: “National Academy for Nuclear Training Fellowships 2013 - 2014”
- Total Grant: \$25,000 (9/1/2013 – 5/31/2014)
- PI: A. Kumar, Co-PI: **H. K. Lee (50%)**

2012-2016 Funding Agency: Nuclear Regulatory Commission

- Title: “Missouri S&T Faculty Development Program (2012 – 2015)”

- Total Grant: \$450,000 (4/1/2012 – 3/31/2016)
- PI: **H. K. Lee (60%)**; Co-PIs: A. Kumar, C. H. Castano

2012-2015 Funding Agency: DARPA

- Title: “Flat-Panel X-ray Sources”
- Total Grant: \$298,576 (8/9/2012 – 8/8/2015)
- Sole PI: **H. K. Lee**
- Fabricated prototypes of a flat-panel x-ray source
- Conducted research on electron and x-ray emission characteristics of the prototypes

2012-2015 Funding Company: Battelle Energy Alliance, LLC (Idaho National Laboratory)

- Title: “Neutron Tomography Program at Missouri University of Science and Technology”
- Total Grant: \$117,758 (9/20/2012 – 5/31/2015)
- Sole PI: **H. K. Lee**
- Developed neutron tomography and tomosynthesis techniques in collaboration with the Idaho National Laboratory

2012-2017 Funding Agency: Nuclear Regulatory Commission

- Title: “Graduate Fellowships in Nuclear Engineering at Missouri S&T”
- Total Grant: \$400,000 (4/1/2012 – 3/31/2017)
- PI: **H. K. Lee (40%)**; Co-PIs: A. Kumar, A. Alajo, X. Liu

2012-2014 Funding Agency: Nuclear Regulatory Commission

- Title: “Undergraduate Scholarships in Nuclear Engineering at Missouri S&T”
- Total Grant: \$200,000 (8/31/2012 – 8/30/2014)
- PI: A. Kumar; Co-PIs: **H. K. Lee (20%)**, C. H. Castano, X. Liu

2012-2013 Funding Agency: Department of Energy (DOE NEUP)

- Title: “Infrastructure Upgrade of Radiation Measurement and Spectroscopy Laboratory at Missouri S&T”
- Total Grant: \$300,000 (7/16/2012 – 11/15/2013)
- PI: **H. K. Lee (55%)**; Co-PIs: S. Usman, X. Liu and M. Al-Dahhan
- Upgraded radiation detection systems in the Radiation Measurement and Spectroscopy Laboratory at Missouri S&T

2011-2015 Funding Agency: Nuclear Regulatory Commission

- Title: “Missouri S&T Nuclear Engineering Faculty Development Program”
- Total Grant: \$412,230 (8/4/2011 – 8/3/2015)
- PI: A. Kumar; Co-PI: **H. K. Lee (50%)**

2011-2015 Funding Agency: Center for Nanoscale Materials, Argonne National Laboratory

- Title: “Ultrananocrystalline Diamond Films-Based Flat Panel X-Ray Source”
- Total Grant: Free usage of facilities, equipment, and supplies in the Center for Nanoscale Materials at Argonne National Laboratory
- Sole PI: **H. K. Lee**
- Collaborating with Dr. Lopez’s group at ANL, designed and fabricated prototypes of ultrananocrystalline diamond films-based electron source array for x-ray generation.

2011-2011 Funding Company: Vatech Humanray, Co., Ltd.

- Title: “Research on Quality Assurance Protocols for Digital Mammography”
- Total Grant: \$30,000 (1/1/2011 – 11/30/2011)
- Sole PI: **H. K. Lee**

- Conducted research on quality assurance methods for digital mammography systems.

2010-2012 Funding Agency: Department of Energy (DOE NEUP)

- Title: “Nuclear Infrastructure Upgrade to Enhance Research & Teaching Capabilities at Missouri S&T”
- Total Grant: \$300,000 (8/31/10 – 8/30/12)
- PI: G. Mueller; Co-PIs: **H. K. Lee (15%)**, A. Kumar, S. Usman, C. H. Castano, and M. Al-Dahhan
- Developed a neutron/x-ray combined computed tomography system.

2010-2012 Campus Funding: UM Research Board Award

- Title: “A Simulation Study of a New Flat-Panel X-Ray Source”
- Total Grant: \$33,000 (8/1/2010 – 7/31/2012)
- PI: **H. K. Lee (60%)**; Co-PI: C. H. Castano
- Investigated electron emission properties from CNT emitters and simulated x-ray generation from tiny x-ray tube cells.

2010-2012 Funding Agency: Nuclear Regulatory Commission

- Title: “Creation of a Radiochemistry Teaching Program in Nuclear Engineering at Missouri S&T”
- Total Grant: \$125,000 (7/1/2010 – 12/31/2012)
- PI: C. H. Castano; Co-PIs: **H. K. Lee (20%)**, S. Usman and M. Al-Dahhan
- Participated in developing a radiochemistry course at Missouri S&T.

2007-2008 Funding Company: E-WOO Technology Co., Ltd, Korea

- Title: “Evaluation Study of Image Processing Techniques for Dental X-ray Images”
- Total Grant: KRW 100,000,000 (~US\$ 100,000) (10/1/07 – 9/30/08)
- Sole PI: **H. K. Lee**
- Evaluated the performance of various image processing techniques used in dental image processing and suggested proper pre- and post-processing algorithms for better image quality.

2004-2008 Funding Agency: Korea Science and Engineering Foundation, Korea (National Core Research Center Program)

- Title: “Systems Bio-Dynamic Research Center”
- Total Grant: KRW 22,453,000,000 (~US\$ 22,453,000) (12/1/04-8/31/08)
- PI: H. G. Nam; Co-PIs: **H. K. Lee (3%)** and 27 scientists from several universities
- Developed cutting edge technology involved in digital radiology and applied a new technique of graphic hardware accelerators for CT reconstruction. Developed a new technique of particle image velocimetry (PIV) using x-ray.

2005-2009 Funding Agency: Seoul Development Institute, Korea (Supporting Program for Promotion of Strategic Industry Innovation Cluster)

- Title: “Renovation Cluster of Leading Technology Development in Medical Imaging”
- Total Grant: KRW 1,248,000,000 (~US\$ 1,248,000) (12/1/05-8/31/09)
- PI: T. S. Suh; Co-PIs: **H. K. Lee (30%)** and B. Y. Choe
- Developed a new technology associated with antiscatter grids for digital radiographic systems. Performed several Monte Carlo simulation studies on grids and DR systems.

2005-2007 Funding Agency: Korea Science and Engineering Foundation, Korea (Mid to Long Term Nuclear R&D Program)

- Title: “Optimization of Image Acquisition and Development of Image Reconstruction Technique for Micro Cone Beam CT”
- Total Grant: KRW 100,000,000 (~US\$ 100,000) (3/1/05 – 2/28/07)
- Sole PI: **H. K. Lee**

- Developed a cone-beam CT reconstruction algorithm based on the FDK technique as well as techniques for micro CT alignment and calibration.

2005-2006 Funding Agency: POSTEC-CMC Research Foundation, Korea (POSTEC-CMC Joint Research Program)

- Title: “Development of Core Element Technology in Compact DR System”
- Total Grant: KRW 20,000,000 (~US\$ 20,000) (7/1/05 – 6/30/06)
- PIs: **H. K. Lee (50%)**; Co-PI: S. J. Lee
- Investigated image sensor characteristics and developed image calibration and pre-processing techniques. Developed x-ray image post-processing, system integration, and analysis techniques.

2001-2006 Funding Agency: Korea Science and Engineering Foundation, Korea (National Research Laboratory Program)

- Title: “Development of Medical Radiation Quantification and Imaging Techniques”
- Total Grant: KRW 1,341,500,000 (~US\$ 1,341,500) (5/1/01 – 7/10/06)
- PI: T. S. Suh; Co-PIs: **H. K. Lee (30%)** and B. Y. Choe
- Investigated the feasibility of various radiation detectors for medical imaging. Also, developed essential techniques for analyzing digital radiographic images in terms of noise, contrast, resolution, etc.

2004-2005 Funding Agency: Korea Science and Engineering Foundation, Korea (Nuclear Commercialization Program)

- Title: “Development of High Accuracy X-ray Grid and Digital Radiographic Detector Integration Technology”
- Total Grant: KRW 50,000,000 (~US\$ 50,000) (11/1/04 – 10/31/05)
- Sole PI: **H. K. Lee**
- Developed a technique to remove antiscatter grid induced Moiré patterns in digital radiography by precise frequency matching of grid lines and digital detector array.

2004-2005 Funding Agency: Korea Industrial Technology Foundation, Korea (University Owned Technology Transfer Program)

- Title: “Digital Medical Imaging Technology”
- Total Grant: KRW 80,000,000 (~US\$ 80,000) (8/1/04 – 1/31/05)
- Sole PI: **H. K. Lee**
- Developed an algorithm that can calculate antiscatter grid line frequencies utilizing aliasing of grid lines and sampling frequency of a detector.

2001-2005 Funding Agency: Ministry of Science and Technology, Korea (Engineering Core Common Technology Development Program)

- Title: “Development of Software for Human Modeling Utilizing Medical Images”
- Total Grant: KRW 184,876,000 (~US\$ 184,876) (12/20/01 – 7/31/05)
- Sole PI: **H. K. Lee**
- Developed 3D rendering software that can generate multi-planar-reformatted CT and MR images at arbitrary viewing angles and provide various measurement and analysis functions.

1999-2002 Funding Agency: Ministry of Education, Korea (Brain Korea 21)

- Title: “Development of Leading Edge Medical Imaging Modalities with New Functions”
- Total Grant: KRW 449,540,000 (~US\$ 449,540) (9/1/99 – 8/31/02)
- PI: T. S. Suh; Co-PIs: **H. K. Lee (20%)**, B. Y. Choe and J. S. Park
- Conducted basic research for digital radiography development and investigated amorphous silicon-based radiation detectors.

1999-2002 Funding Agency: Ministry of Science and Technology, Korea (Mid to Long Term Nuclear R&D Program)

- Title: “Development of Nuclear Medicine Instruments”
- Total Grant: KRW 535,462,000 (~US\$ 535,462) (4/1/99 – 3/31/02)
- PI: **H. K. Lee (80%)**; Co-PI: G. S. Park
- Developed console software for gamma cameras as well as software for quantitative analysis of nuclear medicine images.

1998-2002 Funding Agency: Ministry of Health and Welfare, Korea (Pioneering Medical Engineering Technology Development Program)

- Title: “Development of Radiation Exposure Confirmation System Using Transmission Dosimetry”
- Total Grant: KRW 124,107,000 (~US\$ 124,107) (10/1/98 – 9/30/01)
- Sole PI: **H. K. Lee**
- Developed readout electronics and PC interfaces for real-time patient exit dosimetry system.

1997-2000 Funding Agency: Ministry of Health and Welfare, Korea (Health and Medical Technology R&D Program)

- Title: “Development of Electronic High Energy X-ray Imaging System for Radiation Therapy Confirmation”
- Total Grant: KRW 107,000,000 (~US\$ 107,000) (5/1/97 – 4/30/00)
- PI: **H. K. Lee (50%)**; Co-PIs: S. C. Yoon and G. S. Cho
- Developed an electronic portal imaging device (EPID) based on CCD imaging technology.

1995-1998 Funding Agency: Ministry of Health and Welfare, Korea (G7 Medical Engineering Technology Development Program)

- Title: “Development of On-line Dosimetry System for High Energy Radiation Treatment”
- Total Grant: KRW 67,351,000 (~US\$ 67,351)
- Sole PI: **H. K. Lee**
- Developed an algorithm that can calculate the real-time patient-absorbed dose based on signals from a patient exit dosimetry system. With this algorithm, patient-absorbed dose could be estimated in real-time during radiation treatment.

1996-1997 Funding Agency: Korea Research Foundation, Korea (Young Faculty Support Program)

- Title: “Monte Carlo Studies on an Amorphous Silicon (a-Si:H) Digital X-ray Imaging Device”
- Total Grant: KRW 9,000,000 (~US\$ 9,000) (8/1/96 – 7/31/97)
- Sole PI: **H. K. Lee**
- Developed a Monte Carlo simulation code and performed a simulation study on amorphous silicon and CsI(Tl)-based digital radiography in terms of sensitivity and resolution.

ADVISING AND SUPERVISION**A. Supervision of Postdoctoral Fellows**

Nov. 2018 – Present: Avachat, Ashish, Ph.D.

B. Graduate Student Advising

A total of 17 graduate students (9 Ph.D. and 8 M.S.) have received degrees from Missouri S&T under Dr. Lee’s supervision (100% advising)

- 2020 **Tucker, Wesley, Ph.D.**, Dissertation: “Design of X-Ray Source for Real-Time Computed Tomography”
- 2019 **Paaren, Kyle, Ph.D.**, Dissertation: “Development of a Switchable Radioisotope Generator”
Galib, Shaikat, Ph.D., Dissertation: “Applications of Machine Learning in Nuclear Imaging and Radiation Detection”
- 2018 **Avachat, Ashish, Ph.D.**, Dissertation: “Design and Development of a Compact X-ray Tube for Stationary CT Architecture”
- 2017 **Islam, Fahima, Ph.D.**, Dissertation: “Studies on Neutron Diffraction and X-Ray Radiography for Material Inspection”
Bingham, Andrew, M.S., Thesis: “The Viability of ADVANTG Deterministic Method for Synthetic Radiography”
- 2015 **Abir, Muhammad, Ph.D.**, Dissertation: “Iterative CT Reconstruction from Few Projections for The Nondestructive Post Irradiation Examination of Nuclear Fuel Assemblies”
Galib, Shaikat, M.S., Thesis: “Computer-Aided Detection of Oral Lesions on CT Images”
Scott, Jonathan, M.S., Thesis: “Computer-Aided Diagnosis of Oral Cancer: Using Time-Step CT Images”
- 2014 **Mohd, Khairul, Ph.D.**, Dissertation: “Local Liquid Velocity Measurement of Trickle Bed Reactor Using Digital Industrial X-Ray Radiography”
Grant, Edwin, Ph.D., Dissertation: “Development of a Flat-Panel X-Ray Source”
- 2013 **Sinha, Vaibhav, Ph.D.**, Dissertation: “Design, Development, and Characterization of a Novel Neutron and X-Ray Combined Computed Tomography System”
Islam, Fahima, MS, Thesis: “Directional TV Regularized Accelerated Iterative Method for High-Quality Reconstruction of Sparse Data Neutron Tomography”
- 2012 **Avachat, Ashish, M.S.**, Thesis: “Wavelet-based Contrast Limited Histogram Equalization for Contrast Enhancement of Digital Mammography”
Shah, Varun, M.S., Thesis: “A Study of Wavelet Based Noise Reduction Techniques in Mammograms”
- 2011 **Abir, Muhammad, M.S.**, Thesis: “Contrast Enhancement of Digital Mammography based on Multi-Scale Analysis”
Strantz, Frank, M.S., Thesis: “Density Determination of Tristructural-Isotropic Nuclear Fuel using Multiple Projection X-Ray Radiography.”

TEACHING

Received a Commendation of Teaching Excellence in AY 2013-2014.

Sept. 2009 – Present: Missouri University of Science and Technology, Rolla, MO

Undergraduate level: Nuclear Radiation Measurements and Spectroscopy (3 credit hours; Spring of 2013, 2016 – present), Nuclear Fuel Cycle (3 credit hours; Fall of 2010 – 2014), Reactor Physics I (3 credit hours; Spring of 2011 and 2012), Radiochemistry & Nuclear Forensics (3 credit hours with 25% responsibility; Spring of 2012), Introduction to Nuclear Medical Science (3 credit hours; Fall of 2015 – present). Introduction to Biomedical Engineering (3 credit hours with 15% responsibility; Spring of 2016, 2017)

Graduate level: Advanced Nuclear Medical Science (3 credit hours; Spring of 2010, 2011, 2014, Fall of 2011, 2015 – present), Radiation Shielding (3 credit hours; Fall of 2009, Spring of 2011), Nuclear Radiation Measurements and Spectroscopy (3 credit hours; Spring of 2016 – present), Nuclear Fuel Cycle (3 credit hours; Fall of 2014).

Mar. 1997 – Jun. 2009: Catholic University of Korea, Korea

Undergraduate level: Introduction to Medical Engineering (1 credit hour)

Graduate level: Medical Image Processing (3 credit hours), Radiation Imaging (3 credit hours), Advanced Medical Physics Research Projects (3 credit hours), Physics of Nuclear Medicine (3 credit hours), Radiation Detection (3 credit hours) and Seminars on Medical Physics and Engineering (1 credit hour)

Dr. Lee was invited by several universities in Korea to teach radiation detection and medical imaging-related courses as a part-time lecturer:

Mar. 2005 – Dec. 2006: Korea University, Korea

Undergraduate level: Introduction to Medical Engineering (3 credit hours)

Mar. 2004 – Dec. 2006: Hanyang University, Korea

Undergraduate level: Nuclear Medical Science (3 credit hours) and Radiation Imaging (3 credit hours)

Mar. 2004 – Dec. 2006: Kyonggi University, Korea

Graduate level: Theory and Experiments of Nuclear Medicine (6 credit hours)

Mar. 1996 – Jun. 1996: Yonsei University, Korea

Undergraduate level: Radiation Detection (3 credit hours)

DEPARTMENT AND UNIVERSITY SERVICE**A. Missouri S&T**

2020 – Present **Miner Immersion Participating Faculty**, Missouri S&T

2019 – Present **General Education Oversight Committee**, Missouri S&T

2019 – Present **Campus P&T Committee**, Missouri S&T

2019 – Present **Imaging Subcommittee of Translational Precision Medicine Complex Work Group**, University of Missouri System

2018 – Present **Translational Precision Medicine Complex Work Group**, University of Missouri System

2018 – Present **Scholarship Committee**, Dept. of Mining and Nuclear Engineering

2014 – 2015 **Outstanding Teaching Awards Committee**

2013 – Present **P&T Committee**, Dept. of Mining & Nuclear Engineering

2013 – 2019 **Program Chair**, Nuclear Engineering

2013 – 2017 **Director of MSTR**, Dept. of Mining & Nuclear Engineering

- Oversaw reactor staff activities, faculty and student research activities at the reactor, and reactor usage. Planned and managed reactor equipment and facilities upgrade.

2013 – 2017 **Post-Tenure Review Committee**, Dept. of Psychological Science

- 2013 – 2014 **Best-In-Class Strategic Expansion Committee**, Dept. of Mining & Nuclear Engineering
- 2013 **UM Research Board proposal reviewer**, University of Missouri System
- 2012 – 2013 **Graduate Council**
- 2012 **Research Policy Committee**
- 2011 – 2013 **Information Technology and Computing Committee (ITCC)**
- 2011 **Space Representative**
- 2010 – 2016 **Faculty Search Committee**, Dept. of Mining and Nuclear Engineering

B. The Catholic University of Korea

- 2007 – 2009 **Institutional Review Board (IRB)**
- 2007 **Symposium Moderator**, Dept. of Biomedical Engineering
- 2005 **Research Committee**
- 2004 **Scientific Committee**
- 2004 **Research Committee**, POSTECH-CATHOLIC Biomedical Engineering Center

PROFESSIONAL SERVICE AND SOCIETY MEMBERSHIPS

A. Professional Society Activities

- Senior and Life Member, International Society for Optical Engineering (SPIE)
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, American Nuclear Society (ANS)
- Member, American Association of Physics in Medicine (AAPM)
- Member, International Society for Neutron Radiology (ISNR)
- Life Member, Korean Society of Medical and Biological Engineering
- Life Member, Korean Society of Medical Physics
- Life Member, Korean Nuclear Society
- Member, Korean Association for Radiation Protection

- 2018 – 2019 **Organizing Committee**, International Conference on Nuclear and Radiation Chemistry
- 2018 **Session Chair**, Computed Tomography | Medical Imaging | Neuroradiology, 4th World Congress on Medical Imaging and Clinical Research
- 2018 **Organizing Committee**, 4th World Congress on Medical Imaging and Clinical Research
- 2017 – Present **Vogt Scholarship Committee**, ANS
- 2017 – 2018 **Nominating Committee Chair**, Isotopes and Radiation Division, ANS
- 2016 – 2018 **Vice Chair**, US Chapter, Korean Nuclear Society
- 2016 – 2017 **Chair**, Isotopes and Radiation Division, ANS
- 2016 – 2017 **Technical Program Committee**, 9th International Conference on Isotopes and Expo

- 2016 **International Organizing Committee**, 2016 Vacuum Electronics for Energy Materials and Nanotechnology (EMN)
- 2016 **Session Chair**, Advances in Technical Nuclear Forensics: Methods and Analysis, ANS Winter Meeting
- 2015 – 2016 **Vice Chair**, Isotopes and Radiation Division, ANS
- 2014 **Session Chair**, Advancements in Imaging, Nuclear Instrumentation, and Measurement, ANS Winter Meeting
- 2014 – 2019 **Chair of Gamma and Neutron Imaging Technical Committee**, Isotopes and Radiation Division, ANS
- 2012 – 2015 **Executive Committee**, Isotopes and Radiation Division, ANS
- 2010 **Advisory Committee**, Korea Electrotechnology Research Institute (KERI)
- 2009 – 2011 **Advising Expert**, Korean Scientists and Engineers Network (KOSEN)
- 2006 – 2009 **Chair of Industrial Cooperation Committee**, Korean Photodynamics Association
- 2000 – 2009 **Editorial Committee**, Korean Society of Medical Physics
- 2000 – 2009 **Session Chair**, Korean Society of Medical Physics Meetings
- 2006 **Chair of Educational Committee**, Korean Society of Medical Physics
- 2006 **Scientific Committee and Session Chair**, World Congress on Medical Physics and Biomedical Engineering 2006
- 2006 **Scientific Committee**, World Congress of Nuclear Medicine and Biology 2006
- 2002 – 2003 **Finance Director**, KSMP
- 2002 **Financial Committee**, Korea-Japan Joint Meeting on Medical Physics

B. Journal and Conference Paper Review

Received a Certificate of Excellence in Reviewing from Nuclear Engineering and Technology in 2019.

Reviewed manuscripts from the following journals: Computers in Biology and Medicine, Current Applied Physics, IEEE Journal of Microelectromechanical Systems, IEEE Transactions on Nuclear Science, International Journal of Precision Engineering and Manufacturing, Journal of Biomedical Engineering Research, Journal of Imaging, Journal of Korean Physical Society, Journal of Radiation Research and Applied Sciences, Journal of Radioanalytical and Nuclear Chemistry, Journal of X-Ray Science and Technology, Korean Journal of Medical Physics, Nuclear Engineering and Design, Nuclear Engineering and Technology, Nuclear Medicine and Molecular Imaging, Nuclear Science and Techniques, Optics Express.

C. Proposal Review

DOD National Defense Science and Engineering Graduate (NDSEG) Fellowship, DOE Nuclear Energy University Programs (NEUP), DOE SBIR/STTR, Estonian Research Council, Research Executive Agency (European Commission), Korea Institute of Energy Technology Evaluation and Planning, Korea Science and Engineering Foundation, Ministry of Science and Technology (Korea), Ministry of Education (Korea), etc.

SCHOLARLY CONTRIBUTIONS

A. Plenary Presentations

1. “Advances in Diagnostic X-Ray Sources,” 4th World Congress on Medical Imaging and Clinical Research, London, United Kingdom, 9/3/2018.

B. Books

1. Book Chapter Edition, “Nondestructive Detection of Explosives” in Reference Module in Materials Science and Materials Engineering, ed. M. S. Hashmi, Elsevier Inc. Amsterdam, Netherlands, ISBN: 978-0-12-803581-8, 2016.

C. Refereed Journal Papers

(Dr. Lee has published 116 refereed journal papers)

- Z. Jin, S. Kilby, A. Avachat, B. Kanies, N. Woolstenhulme, **H. K. Lee**, J. Graham, “Accelerated Radiation Transport Modeling Techniques for Pencil Beam Computed Tomography Using Gamma Rays,” *J. Radioanal. Nucl. Ch.*, *submitted*. (Impact Factor = 1.282)
- S. N. Lekakh, Z. Xueliang, W. Tucker, **H. K. Lee**, T. Selly, and J. D. Schiffbauer, “Micro-CT 3D Evaluation of Cast Iron with Spherical Graphite,” *Metallurgical and Materials Trans. A*, *submitted*. (Impact Factor = 1.887)
1. **A. Avachat***, W. Tucker, C. Castano, D. Pommerenke, and **H. K. Lee (corresponding author)**, “Looking Inside a Prototype Compact X-ray Tube Comprising CNT-Based Cold Cathode and Transmission-Type Anode,” *Radiation Research*, 193, pp.497-504, 2020. (Impact Factor = 2.539)
 2. **K. Paaren***, S. Kilby and **H. K. Lee (corresponding author)**, “Active Interrogation of Special Nuclear Material Containers using Quasi-Forward Biased AmBe Source and PGNA,” *Applied Radiation and Isotopes*, Vol 160, 109107, 2020. (Impact Factor = 1.128)
 3. S. N. Lekakh, Z. Xueliang, W. Tucker, **H. K. Lee**, T. Selly, and J. D. Schiffbauer, “Micro-CT Quantitative Evaluation of Graphite Nodules in SGI,” *Int. J. of Metalcasting*, 14(2), pp.318-327, 2020. (Impact Factor = 0.779)
 4. **S. Galib***, **H. K. Lee**, C L. Guy, M. J. Riblett, and G. D. Hugo, “A Fast and Scalable Method for Quality Assurance of Deformable Image Registration on Lung CT Scans Using Convolutional Neural Networks,” *Med. Phys.*, 47(1), pp. 99-109, 2020. (Impact Factor = 3.177)
 5. S. N. Lekakh, **H. K. Lee**, J. D. Schiffbauer, T. Selly, W. Tucker, and X. Zhang, “3D Characterization of Structure and Micro-porosity in Two Cast Irons with Spherical Graphite,” *Materials Characterization*, Vol 158, 109991, 2019. (Impact Factor = 3.220)
 6. S. Kilby, Z. Jin, A. Avachat, B. Kanies, N. Woolstenhulme, **H. K. Lee**, and J. Graham, “A Source Biasing and Variance Reduction Technique for Monte Carlo Radiation Transport Modeling of Emission Tomography Problems,” *J. Radioanal. Nucl. Ch.*, 320(1), pp.37, 2019. (Impact Factor = 1.282)
 7. **K. Paaren*** and **H. K. Lee (corresponding author)**, “Simulation Study of Alpha-Neutron Reactions from AmBe Directional Source using MCNP 6.1.1 with TENDL 2012, 2014, and 2017 libraries,” *Applied Radiation and Isotopes*, 146, pp.104-114, 2019. (Impact Factor = 1.128)
 8. **A. Avachat***, W. Tucker, C. Castano, and **H. K. Lee (corresponding author)**, “Particle-In-Cell Simulations of Electron Focusing for a Compact X-Ray Tube Comprising CNT-Based Electron Source and Transmission Type Anode,” *IEEE. Trans. Electron Devices*, 66 (3), pp.1525-1532, 2019. (Impact Factor = 2.605)
 9. **A. Bingham*** and **H. K. Lee (corresponding author)**, “The Viability of ADVANTG Deterministic

*The first author was a graduate student of Dr. Lee

- Method for Synthetic Radiography Generation,” *Comput. Phys. Commun.*, 222, pp.5-10, 2018. (Impact Factor = 3.936)
10. X. Liu and **H. K. Lee**, “A Simulation Study of the Spent Nuclear Fuel Cask Condition Evaluation Using High Energy X-Ray Computed Tomography,” *NDT & E International*, 80, pp.58-64, 2016. (Impact Factor = 2.726)
 11. **M. I. Abir***, F. F. Islam, A. Craft, W. J. Williams, D. M. Wachs, D. L. Chichester, M. K. Meyer, and **H. K. Lee**, “Determination of Optimal Imaging Parameters for the Reconstruction of a Nuclear Fuel Assembly Using Limited Angle Neutron Tomography,” *Journal of Instrumentation*, 11(01), C01016, 2016. (Impact Factor = 1.220)
 12. M. Sharma, A. Alajo and **H. K. Lee**, “Three-Dimensional Localization of Low Activity Gamma ray Sources in Real-Time Scenarios,” *Nucl. Instr. and Meth. in Phys. Res. A*, 813, pp.132-138, 2016. (Impact Factor = 1.362)
 13. **M. Abir***, F. Islam, D. Wachs, and **H. K. Lee (corresponding author)**, “Sparse-View Neutron CT Reconstruction of Irradiated Fuel Assembly Using Total Variation Minimization with Poisson Statistics,” *J. Radioanal. Nucl. Ch.*, 307, pp.1967-1979, 2016. (Impact Factor = 1.282)
 14. **S. Galib***, F. Islam, M. Abir, and **H. K. Lee (corresponding author)**, “Computer Aided Detection of Oral Lesions on CT Images,” *Journal of Instrumentation*, 10(12), C12030, 2015. (Impact Factor = 1.220)
 15. **K. Salleh***, **H. K. Lee**, and M. Al-Dahhan, “Studying Local Liquid Velocity in Liquid-Solid Packed Bed Using the Newly Developed X-Ray DIR Technique,” *Flow Meas. Instrum.*, 42, pp.1-5, 2015. (Impact Factor = 1.203)
 16. X. Liu and **H. K. Lee**, “Detector Response Function of an Energy-Resolved CdTe Single Photon Counting Detector,” *J. X-Ray Sci. Technol.*, 22(6), pp.735-744, 2014. (Impact Factor = 0.699)
 17. **K. Salleh***, **H. K. Lee**, and M. Al-Dahhan, “Local Liquid Velocity Measurement in Trickle Bed Reactors (TBRs) Using the X-Ray Digital Industrial Radiography (DIR) Technique,” *Meas. Sci. Technol.*, 25, 075401, 2014. (Impact Factor = 1.585)
 18. C. M. Posada, C. H. Castano, E. J. Grant, **H. K. Lee (PI of the research project)**, R. Divan, A. V. Sumant, D. Rosenmann, and L. Stan, “Nitrogen Incorporated Ultrananocrystalline Diamond (N-UNCD) Based Field Emitter Array (FEA) for a Flat-Panel X-ray Source,” *J. Appl. Phys.*, 115, 134506, 2014. (Impact Factor = 2.068)
 19. **V. Sinha***, A. Srivastava, **H. K. Lee (corresponding author)**, and X. Liu, “Performance Analysis of a Neutron and X-Ray Combined Computed Tomography System,” *Nucl. Instr. and Meth. in Phys. Res. A*, 750, pp.12-18, 2014. (Impact Factor = 1.362)
 20. **V. Sinha***, A. Srivastava, and **H. K. Lee (corresponding author)**, “A Novel Method for NDT Applications using NXCT System at the Missouri University of Science & Technology,” *Nucl. Instr. and Meth. in Phys. Res. A*, 750, pp.43-55, 2014. (Impact Factor = 1.362)
 21. **V. Sinha***, A. V. Avachat, and **H. K. Lee (corresponding author)**, “Design and Development of a Neutron/X-Ray Combined Computed Tomography System at Missouri S&T,” *J. Radioanal. Nucl. Ch.*, 296(2), pp.799-806, 2013. (Impact Factor = 1.282)
 22. **E. J. Grant***, C. M. Posada, C. H. Castaño, and **H. K. Lee (corresponding author)**, “A Monte Carlo Simulation Study of a Flat-Panel X-ray Source,” *Applied Radiation and Isotopes*, 70, pp.1658-1666, 2012. (Impact Factor = 1.128)
 23. C. M. Posada, C. H. Castano, E. J. Grant, and **H. K. Lee (PI of the research project)**, “Simulation of the Electron Field Emission Characteristics of a Flat Panel X-Ray Source,” *J. of Vacuum Sci. and Tech. B*, 30(2), pp.022201-022201-9, 2012. (Impact Factor = 1.573)
 24. S. Chang, **H. K. Lee**, and G. Cho, “Application of a Dual Energy Monochromatic X-Ray CT Algorithm to the Polychromatic X-Ray CT: A Feasibility Study,” *Nuclear Engineering and Technology*, 44(1), pp.61-70, 2012. (Impact Factor = 1.144)
 25. J. E. Oh, H. S. Cho, S. I. Choi, Y. O. Park, M. S. Lee, H. M. Cho, Y. J. Yang, T. H. Woo, B. S. Lee, and **H. K. Lee**, “Self-Masking Noise Subtraction (SMNS) in Digital X-Ray Tomosynthesis for the Improvement of Tomographic Image Quality,” *Nucl. Instr. and Meth. in Phys. Res. A*, 652, pp.708-712, 2011. (Impact Factor = 1.362)

*The first author was a graduate student of Dr. Lee

26. S. I. Choi, Y. O. Park, H. S. Cho, J. E. Oh, H. M. Cho, D. K. Hong, M. S. Lee, Y. J. Yang, U. K. Je, D. S. Kim, and **H. K. Lee**, "Development of a Digital Panoramic X-Ray Imaging System of Adaptive Image Layers for Dental Applications," Nucl. Instr. and Meth. in Phys. Res. A, 652, pp.767-770, 2011. (Impact Factor = 1.362)
27. H. S. Cho, J. E. Oh, S. I. Choi, H. M. Cho, Y. O. Park, D. K. Hong, M. S. Lee, Y. J. Yang, E. G. Jae, D. S. Kim, T. H. Woo, B. S. Lee, and **H. K. Lee**, "Performance Evaluation of a Gamma ray Imaging System for Nondestructive Testing of Welded Pipes," Nucl. Instr. and Meth. in Phys. Res. A, 652, pp.650-653, 2011. (Impact Factor = 1.362)
28. S. J. Lee, H. S. Cho, J. E. Oh, S. I. Choi, H. M. Cho, Y. O. Park, D. K. Hong, M. S. Lee, Y. J. Yang, E. G. Jae, D. S. Kim, and **H. K. Lee**, "High Precision Carbon-Interspaced Antiscatter Grids: Performance Testing and Moiré Pattern Analysis," Nucl. Instr. and Meth. in Phys. Res. A, 652, pp.858-861, 2011. (Impact Factor = 1.362)
29. **C. J. Park***, **H. K. Lee**, W. Y. Song, T. G. Achterkirchen, and H. K. Kim, "Defective Pixel Map Creation Based on Wavelet Analysis in Digital Radiography Detectors," Nucl. Instr. and Meth. in Phys. Res. A, 634, pp.101-105, 2011. (Impact Factor = 1.362)
30. **S. H. Kim***, T. S. Suh, B. Y. Choe, and **H. K. Lee (corresponding author)**, "Objective and Quantitative Evaluation of Image Quality Using Fuzzy Integral: Phantom Study," Korean J. Medical Phys., 19(4), pp.201-208, 2008.
31. **S. H. Kim***, T. S. Suh, B. Y. Choe, and **H. K. Lee (corresponding author)**, "Image Enhancement and Clinical Evaluation in Digital Chest Radiography," Korean J. Medical Phys., 19(3), pp.143-149, 2008.
32. **C. J. Park***, D. I. Kim, D. Y. Jang, H. B. Yoon, B. Y. Choe, H. K. Kim, and **H. K. Lee (corresponding author)**, "Contrast Enhancement for X-ray Images Based on Combined Enhancement of Scaling and Wavelet Coefficients," Korean J. Medical Phys., 19(3), pp.150-156, 2008.
33. **D. Y. Jang***, **H. K. Lee (corresponding author)**, B. Y. Choe, C. J. Park, D. I. Kim, T. S. Suh, J. S. Kim, N. K. Jung, S. W. Seo, and W. Seong, "Performance Evaluation of Carbon-Interspaced Antiscatter Grids in Mammography: Empirical Formula and Monte Carlo Simulation Studies," J. Korean Phys. Soc., 53(2), pp.863-867, 2008. (Impact Factor = 0.467)
34. **J. W. Yoon***, Y. G. Park, C. J. Park, D. I. Kim, J. H. Lee, N. K. Chung, B. Y. Choe, T. S. Suh, and **H. K. Lee (corresponding author)**, "Reduction of a Grid Moiré Pattern by Integrating a Carbon-interspaced High Precision X-ray Grid with a Digital Radiographic Detector," Medical Physics, 34(11), pp.4092-4097, 2007. (Impact Factor = 2.617)
35. **D. I. Kim***, **H. K. Lee (corresponding author)**, S. H. Kim, C. J. Park, B. Y. Choe, and T. S. Suh, "A Quantitative Study of the Relationship between Absorbed Energy and DR Pixel Values Based on the X-Ray Energy Spectrum Model," J. Korean Phys. Soc., 51(1), pp.224-229, 2007. (Impact Factor = 0.467)
36. C. H. Kim, J. H. O, Y. A. Chung, I. R. Yoo, H. S. Sohn, S. H. Kim, S. K. Chung, and **H. K. Lee**, "Determination of Appropriate Sampling Frequency and Time of Multiple Blood Sampling Dual Exponential Method with ^{99m}Tc -DTPA for Calculating GFR," Nucl. Med. Mol. Imaging., 40(1), pp.33-39, 2006.
37. **J. W. Yoon***, **H. K. Lee (corresponding author)**, B. Y. Choe, T. S. Suh, and S. J. Lee, "Application of a Mobile C-arm Fluoroscopy System to Bone Densitometry Utilizing Dual Energy X-ray Spectrum," J. Korean Phys. Soc., 47(3), pp.529-532, 2005. (Impact Factor = 0.467)
38. **D. I. Kim***, S. H. Kim, D. S. Ho, B. Y. Choe, T. S. Suh, J. M. Lee, and **H. K. Lee (corresponding author)**, "Quantitative Analysis of Digital Radiography Pixel Values to Absorbed Energy of Detector Based on the X-ray Energy Spectrum Model," Korean J. Medical Phys., 15(4), pp.202-209, 2004.
39. H. S. Jin, J. Y. Song, R. H. Ju, S. K. Jeong, B. Y. Choe, **H. K. Lee**, and T. S. Suh, "Accuracy Evaluation of Three-Dimensional Multimodal Image Registration Using a Brain Phantom," J. Biomedical Eng. Research, 25(1), pp.33-41, 2004.
40. J. N. Jang, T. S. Suh, **H. K. Lee**, and S. C. Yun, "Comparison Study of Conventional Film-based and CT-Reconstruction Method in HDR Brachytherapy," Korean J. Medical Phys., 15(2), pp.63-69, 2004.
41. J. W. Lee, B. Y. Choe, S. I. Yun, **H. K. Lee**, T. S. Suh, and S. N. Heo, "Development of Birdcage

*The first author was a graduate student of Dr. Lee

- Resonator for Various Absorption Regions at 3T," Korean J. Medical Phys., 15(1), pp.54-58, 2004.
42. S. Oh, T. S. Suh, J. Y. Song, B. Y. Choe, **H. K. Lee**, M. C. Kim, and T. Lee, "Development of a Rapid Planning Technique Based on Heuristic Target Shaping for Stereotactic Radiosurgery," Medical Physics, 31(2), pp.175-182, 2004. (Impact Factor = 2.617)
 43. **D. S. Ho***, **H. K. Lee (corresponding author)**, S. H. Kim, D. I. Kim, T. S. Suh, B. Y. Choe, U. N. Kim, and J. H. Lee, "Feature Extraction and Image Segmentation of Mechanical Structures from Human Medical Images," Korean J. Medical Phys., 15(2), pp.112-119, 2004.
 44. H. G. Yun, S. N. Huh, **H. K. Lee**, H. G. Woo, K. C. Shin, and S. W. Ha, "Modification of transmission dose algorithm for irregularly shaped radiation field and tissue deficit," J. Nuclear Science and Technology, 41(sup4), pp. 211-214, 2004. (Impact Factor = 0.965)
 45. H. G. Yun, S. N. Huh, **H. K. Lee**, H. G. Woo, K. C. Shin, and S. W. Ha, "Development of transmission dose estimation algorithm for in vivo dosimetry in high energy radiation treatment," J. Nuclear Science and Technology, 41(sup4), pp. 124-127, 2004. (Impact Factor = 0.965)
 46. G. S. Choe, S. J. Oh, T. S. Suh, **H. K. Lee**, B. Y. Choe, and H. J. Jeon, "Search of Characteristic for Dose Distribution Presented by Multi isocentric Stereotactic Radiosurgical Plan Using Linear Accelerator," Korean J. Medical Phys., 14(4), pp.225-233, 2003.
 47. G. H. Jeong, T. S. Suh, H. S. Jin, **H. K. Lee**, and B. Y. Choe, "Three Dimensional Target Volume Reconstruction from Multiple Projection Images," Korean J. Medical Phys., 14(3), pp.167-174, 2003.
 48. H. S. Jin, J. W. Sohn, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Quality Assurance of Multileaf Collimator Using Electronic Portal Imaging," Korean J. Medical Phys., 14(3), pp.151-160, 2003.
 49. B. Y. Choe, H. M. Baik, S. S. Jeon, B. C. Son, M. C. Kim, B. S. Kim, J. M. Lee, **H. K. Lee**, and T. S. Suh, "Neurometabolic Improvement in Parkinson's Disease after Stereotactic Functional Neurosurgery by Follow-up MR Spectroscopy," J. Korean Mag. Res. Soc., 7(1), pp.1-15, 2003.
 50. J. N. Jang, T. S. Suh, S. N. Heo, H. N. Kim, S. C. Yun, B. Y. Choe, and **H. K. Lee**, "Dose Verification Using Pelvic Phantom in High Dose Rate (HDR) Brachytherapy," Korean J. Medical Phys., 14(1), pp.15-19, 2003.
 51. H. M. Baik, B. Y. Choe, B. C. Son, M. C. Kim, E. N. Kim, **H. K. Lee**, and T. S. Suh, "Feasibility of Proton Chemical Shift Imaging with a Stereotactic Headframe," Magnetic Resonance Imaging, 21, pp.55-59, 2003. (Impact Factor = 2.225)
 52. J. Y. Song, T. S. Suh, **H. K. Lee**, B. Y. Choe, and S. C. Yun, "A Study on the Image Registration Algorithms for the Accurate Application of Multimodality Image in Radiation Treatment Planning," Korean J. Medical Phys., 13(4), pp.209-217, 2002.
 53. H. S. Jin, D. H. Shin, S. N. Heo, C. E. Gwak, B. Y. Choe, **H. K. Lee**, and T. S. Suh, "Simulation Study for the Distortion Correction of Digital Angiographic Images using Geometric Transformation," J. Biomedical Eng. Research, 23(5), pp.365-373, 2002.
 54. B. Y. Choe, U. N. Kim, Y. A. Jeong, H. S. Sohn, S. H. Kim, S. G. Jeong, **H. K. Lee**, and T. S. Suh, "Evaluation of SPECT Analyses in Patients with Transient Global Amnesia," J. Korean Mag. Res. Soc., 6(1), pp.45-53, 2002.
 55. H. G. Yun, U. G. Jee, S. N. Heo, **H. K. Lee**, H. G. Woo, G. C. Shin, S. Y. Kim, and S. H. Ha, "Transmission Dose Estimation Algorithm for in vivo Dosimetry," J. Korean Asso. Radiat. Prot., 27(3), pp.147-154, 2002.
 56. G. H. Jung, T. S. Suh, **H. K. Lee**, B. Y. Choe, and S. C. Yun, "A Preliminary Study for the Development of Diagnostic X-ray Simulator Using Visible Light Source," Korean J. Medical Phys., 13(3), pp.169-175, 2002.
 57. S. J. Oh, J. H. Park, C. E. Gwak, **H. K. Lee**, B. Y. Choe, T. G. Lee, M. C. Kim, and T. S. Suh, "A Comparison Study with the Variation of Isocenter and Collimator in Stereotactic Radiosurgery," Korean J. Medical Phys., 13(3), pp.129-134, 2002.
 58. B. Y. Choe, S. S. Jeon, B. S. Kim, J. M. Lee, S. T. Jeong, C. B. An, C. H. Oh, S. I. Kim, **H. K. Lee**, and T. S. Suh, "Evaluation of Metabolic Abnormality in Brain Tumors by In Vivo 1H MR Spectroscopy at 3 Tesla," Korean J. Medical Phys., 13(3), pp.120-128, 2002.
 59. H. M. Baik, B. Y. Choe, **H. K. Lee**, T.S. Suh, B. C. Son, and J. M. Lee, "Metabolic Alterations in

*The first author was a graduate student of Dr. Lee

- Parkinson's Disease after Thalamotomy, as Revealed by 1H MR Spectroscopy," Korean J. Radiol., 3(3), pp.180-188, 2002. (Impact Factor = 2.156)
60. H. G. Youn, U. G. Jee, S. N. Heo, H. G. Woo, **H. K. Lee**, G. C. Shin, S. Y. Kim, and S. H. Ha, "Transmission Dose Estimation Algorithm for Irregularly Shaped Radiation Field," J. Korean Soc. Ther. Radiol. Oncol., 20(3), pp.274-282, 2002.
 61. T. S. Suh, C.K. Joo, Y. C. Kim, M.S. Lee, **H. K. Lee**, B.Y. Choe, and H.J. Chun, "Surface Modification of Polymethyl Methacrylate Intraocular Lenses with the Mixture of Acrylic Acid and Acrylamide via Plasma-Induced Graft Copolymerization," J. Appl. Polymer Sci., 85, pp.2361-2366, 2002. (Impact Factor = 1.860)
 62. M. J. Chu, B. Y. Choe, S. G. Kang, C. B. Choi, **H. K. Lee**, and T. S. Suh, "Development of Birdcage RF Coil for 3T Animal MR Imaging," Korean J. Medical Phys., 13(2), pp.85-89, 2002.
 63. H. G. Youn, U. G. Jee, S. N. Heo, H. G. Woo, **H. K. Lee**, G. C. Shin, and S. H. Ha, "Transmission Dose Estimation Algorithm for Tissue Deficit," J. Korean Soc. Ther. Radiol. Oncol., 20(2), pp.186-192, 2002.
 64. R. Y. Juh, T. S. Suh, C. E. Gwak, B. Y. Choe, **H. K. Lee**, Y. A. Jung, S. H. Kim, and S. G. Jung, "Quantitative Evaluation of Regional Cerebral Blood Flow by Visual Stimulation in 99mTc-HMPAO Brain SPECT," Korean J. Nucl. Med., 36(3), pp.166-176, 2002.
 65. B. K. Kim, E. K. Chie, S. N. Huh, **H. K. Lee**, and S. W. Ha, "Clinical Application of in Vivo Dosimetry System in Radiotherapy of Pelvis," J. Korea Asso. Radiat. Prot., 27(1), pp.37-49, 2002.
 66. S. N. Kim, B. C. Cho, T. S. Suh, H. S. Bae, B. Y. Choe, and **H. K. Lee**, "A Preliminary Study of Virtual-micro Intensity Modulated Radiation Therapy," Korean J. Medical Phys., 13(1), pp.32-36, 2002.
 67. S. K. Kang, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "Theoretical Evaluation of Magnetization Behavior in PRESS: For Determination of the Spin-lattice Relaxation Time, T1," J. Korean Phys. Soc., 40(3), pp.516-519, 2002. (Impact Factor = 0.467)
 68. B. Y. Choe, E. N. Kim, Y. A. Chung, H. S. Sohn, S. H. Kim, S. K. Chung, **H. K. Lee**, and T. S. Suh, "Evaluation of SPECT Analysis in Patients with Transient Global Amnesia," J. Korean Mag. Res. Soc., 6, pp. 45-53, 2002.
 69. B. Y. Choe, S. K. Kang, M. J. Chu, H. M. Baik, E. N. Kim, B. S. Kim, J. M. Lee, S. T. Chung, C. B. Ahn, C. H. Oh, J. H. Kim, S. I. Kim, K. N. Lee, T. S. Suh, **H. K. Lee**, and K.S. Shinn, "High Resolution MR Images from 3T Active-Shield Whole-Body MRI System", J. Korean Soc. Mag. Res. Med., 5(2), pp.138-148, 2001.
 70. **H. M. Kim***, T. S. Suh, B. Y. Choe, Y. A. Chung, S. H. Kim, S. K. Chung, and **H. K. Lee (corresponding author)**, "Calculation of Renal Depth by Conjugate-View Method Using Dual-head Gamma Camera," Korean J. Nucl. Med, 35(6), pp.378-388, 2001.
 71. B. Y. Choe, C. B. Choi, S. K. Kang, M. J. Chu, E. N. Kim, **H. K. Lee**, and T.S. Suh, "Canine MR Images from 3T Active-Shield MRI System," Korean J. Medical Phys., 12(2), pp.113-123, 2001.
 72. **J. A. Lee***, T. S. Suh, B. Y. Choe, and **H. K. Lee (corresponding author)**, "A Study of the Registration of Simulator Images and Portal Images Using Landmarks in Radiation Treatment," Korean J. Medical Phys., 12(2), pp.177-184, 2001.
 73. B. Y. Choe, H. M. Baik, S. S. Chun, B. C. Sohn, M. C. Kim, B. S. Kim, **H. K. Lee**, and T. S. Suh, "Metabolic Changes in Patients with Parkinson's Disease after Stereotactic Neurosurgery by Follow-up 1H MR Spectroscopy," J. Korean Mag. Res. Soc., 5, pp.99-109, 2001.
 74. G. Cho, H. K. Kim, Y. H. Chung, D. K. Kim, **H. K. Lee**, T. S. Suh, and K. S. Joo, "Monte Carlo Analyses of X-ray Absorption, Noise and Detective Quantum Efficiency Considering Therapeutic X-ray Spectrum in Portal Imaging Detector," IEEE Trans. Nucl. Sci., 48(4), pp.1423-1427, 2001. (Impact Factor = 1.171)
 75. **J. Y. Song***, **H. K. Lee (corresponding author)**, T. S. Suh, B. Y. Choe, K. S. Shinn, Y. A. Chung, S. H. Kim, and S. K. Chung, "Development of Program for Renal Function Study with Quantification Analysis of Nuclear Medicine Image," Korean J. Nucl. Med., 35(2), pp.89-99, 2001.
 76. B. Y. Choe, I. H. Paik, C. U. Lee, **H. K. Lee**, and T. S. Suh, "Evaluation of Neuronal Dysfunction in Schizophrenia before and after Neuroleptic Treatment by 1H MRS," J. Korean Mag. Res. Soc., 5(1), pp.56-65, 2001.

*The first author was a graduate student of Dr. Lee

77. **H. K. Lee**, J. Y. Song, T. S. Suh, B. Y. Choe, and K. S. Shinn, "Development of Automated Region of Interest for the Evaluation of Renal Scintigraphy: Study on the Inter-Operator Variability," Korean J. Medical Phys., 12(1), pp.41-50, 2001.
78. S. H. Ha, B. Y. Choe, Y. S. Kim, S. E. Kim, T. S. Suh, **H. K. Lee**, K. S. Shinn, and H. K. Lee, "Development of TEM Resonator Head Coil for 3T MRI," J. Korean Soc. Mag. Res. Med., 4(2), pp.203-208, 2000.
79. B. Y. Choe, E. N. Kim, C. W. Lee, I. H. Baik, K. S. Lee, B. C. Son, H. J. Chun, **H. K. Lee**, T. S. Suh, J. M. Lee, and K. S. Shinn, "Neuronal Dysfunction in Patients with Chronic Alcoholism Evaluated by In Vivo 1H Magnetic Resonance Spectroscopy", J. Korean Soc. Mag. Res. Med., 4(2), pp.94-99, 2000.
80. I. R. Yoo, S. H. Kim, Y. A. Chung, H. S. Jung, H. G. Lee, Y. H. Park, S. Y. Lee, H. S. Sohn, S. K. Chung, H. M. Kim, and **H. K. Lee**, "Development of Formulae for the Estimation of Renal Depth and Application in the Measurements of Glomerular Filtration Rate in Koreans," Korean J. Nucl. Med., 34(5), pp.418-425, 2000.
81. B. Y. Choe, H. M. Baik, B. C. Son, M. C. Kim, E. N. Kim, T. S. Suh, **H. K. Lee**, and K. S. Shinn, "In Vivo 1H MR Spectroscopic Study on Levodopa-Treated Parkinson's Disease," J. Korean Soc. Mag. Res. Med., 4(1), pp.19-28, 2000.
82. Y. H. Chung, H. K. Kim, G. S. Cho, S. K. Ahn, **H. K. Lee**, and S. C. Yoon, "Characterization of X-ray Detector for CCD-based Electronic Portal Imaging Device," J. Biomedical Eng. Research, 21(2), pp.119-127, 2000.
83. B. Y. Choe, H. M. Baik, T. S. Suh, **H. K. Lee**, H. J. Chun, and K. S. Shinn, "Evaluation of Inhomogeneous Shimming in 1H MR Spectroscopy", Korean J. Medical Phys., 11(1), pp.73-83, 2000.
84. J. H. Park, T. S. Suh, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "The Determination of Optimum Beam Position and Size in Radiation Treatment," Korean J. Medical Phys., 11(1), pp.49-57, 2000.
85. D. H. Shin, T. S. Suh, S. N. Huh, B. C. Son, **H. K. Lee**, B. Y. Choe, and K. S. Shinn, "Optimal Localization through DSA Distortion Correction for SRS," Korean J. Medical Phys., 11(1), pp.39-47, 2000.
86. H. M. Baik, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "Correlation between Metabolite Peak Area Ratios on the Influence of Poor Shimming by 1H MR Spectroscopy", J. Korean Soc. Mag. Res. Med., 3(2), pp.140-148, 1999.
87. K. S. Tae, T. S. Suh, B. Y. Choe, **H. K. Lee**, K. S. Shinn, S. E. Chung, and J. M. Lee, "Evaluation of Cardiac Function Analysis System using Magnetic Resonance Images," Korean J. Medical Phys., 10(3), pp.159-168, 1999.
88. **J. W. Youn***, **H. K. Lee (corresponding author)**, T. S. Suh, B. Y. Choe, K. S. Shinn, I. K. Mun, H. K. Kim, Y. W. Han, and S. B. Nam, "Comparison of Image Quality of the Amorphous Silicon DR System and the Film-Screen Systems," J. Korean Asso. Radiat. Prot., 24(3), pp.161-170, 1999.
89. B. Y. Choe, S. E. Kim, **H. K. Lee**, T. S. Suh, H. K. Lee, and K. S. Shinn, "Localized In Vivo 31P NMR Studies on Rabbit Skeletal Muscle Tissue from Premortem to Postmortem Period," J. Korean Mag. Res. Soc., 3(1), pp.1-11, 1999.
90. H. K. Kim, G. Cho, Y. H. Chung, **H. K. Lee**, and S. C. Yoon, "Monte Carlo Studies of Metal/Phosphor Screen in Therapeutic X-Ray Imaging," Nucl. Instr. and Meth. in Phys. Res. A, 422, pp.713-717, 1999. (Impact Factor = 1.362)
91. S. H. Ha, B. Y. Choe, Y. S. Kim, S. E. Kim, T. S. Suh, **H. K. Lee**, K. S. Shinn, and H. K. Lee, "Development of TEM Head-size Resonator for 3T MRI Head Coil," J. Korean Soc. Magn. Reson. Med., 3(3), pp.232-238, 1999.
92. T. Kim, B. Y. Choe, E. N. Kim, T. S. Suh, **H. K. Lee**, and K. S. Shinn, "The Comparison of Susceptibility Changes in 1.5T and 3.0T MRIs due to TE Change in Functional MRI," J. Korean Soc. Magn. Reson. Med., 3(2), pp. 154-158, 1999.
93. T. Kim, T. S. Suh, B. Y. Choe, S. E. Kim, **H. K. Lee**, and K. S. Shinn, "Metabolic Changes on Occipital Cortex during Visual Stimulation with Functional MR Imaging and 1H Spectroscopy," J. Korean Soc. Magn. Reson. Med., 3(1), pp. 47-52, 1999.
94. A. Miresghhi, T. Jing, S. N. Kaplan, **H. K. Lee**, and V. Perez-Mendez, "Amorphous Silicon Flat Panel

*The first author was a graduate student of Dr. Lee

- Imagers for Medical Application," International J. of Engineering, 12(1), pp. 29-39, 1999.
95. T. S. Suh, B. Y. Choe, **H. K. Lee**, S. K. Kim, K. T. Kim, J. W. Yeo, S. H. Park, M. C. Kim, and K. S. Shinn, "Development of mini PACS System," J. Korean PACS Soc., 4(2), pp.101-109, 1998.
 96. H. G. Wu, S. N. Huh, **H. K. Lee**, and S. W. Ha, "Inhomogeneity Correction in On-line Dosimetry Using Transmission Dose," J. Korean Asso. Radiat. Prot., 23(3), pp.139-147, 1998.
 97. **H. K. Lee** and K. S. Shinn, "Monte Carlo Studies on an Amorphous Silicon (a-Si H) Digital X-Ray Imaging Device," J. Biomedical Eng. Research, 19(3), pp.225-232, 1998.
 98. B. Y. Choe, J. W. Park, K. S. Lee, B. C. Son, M. C. Kim, B. S. Kim, T. S. Suh, **H. K. Lee**, and K. S. Shinn, "Neuronal Laterality in Parkinson's Disease with Unilateral Symptom by In Vivo 1H Magnetic Resonance Spectroscopy," Investigative Radiology, 33(8), pp.450-455, 1998. (Impact Factor = 5.195)
 99. B. Y. Choe, J. W. Park, S. R. Hahn, Y. I. Kim, K. S. Lee, W. H. Jee, S. E. Choi, **H. K. Lee**, T. S. Suh, **H. K. Lee** and K. S. Shinn, "Metabolic Abnormalities in Patients with Mitochondrial Myopathy Evaluated by In Vivo 31P Magnetic Resonance Spectroscopy," J. Korean Soc. Mag. Res. Med., 2(1), pp.89-95, 1998.
 100. T. S. Suh, B. Y. Choe, **H. K. Lee**, M. C. Kim, T. Kim, S. H. Kim, J. W. Yeo, S. H. Park, and K. S. Shinn, "Clinical Application of CUMC Pilot Mini-PACS for Radiation Therapy Planning," J. Korean PACS Soc., 4(1), pp.37-43, 1998.
 101. B. Y. Choe, W. H. Jee, T. S. Suh, **H. K. Lee**, and K. S. Shinn, "Evaluation of the Effects of High Dose Irradiation on Canine Thigh Muscle by Follow-up Magnetic Resonance Imaging and Phosphorus-31 Magnetic Resonance Spectroscopy," Investigative Radiology, 33(5), pp.300-307, 1998. (Impact Factor = 5.195)
 102. Y. W. Bahk, S. K. Chung, Y. H. Park, S. H. Kim, and **H. K. Lee**, "Pinhole SPECT Imaging in Normal and Morbid Ankles," Journal of Nuclear Medicine, 39(1), pp.130-139, 1998. (Impact Factor = 6.646)
 103. **H. K. Lee**, T. S. Suh, B. Y. Choe, K. S. Shinn, and G. Cho, "Transient Photocurrent in Amorphous Silicon Radiation Detectors," Nuclear Engineering and Technology, 29(6), pp 468-475, 1997. (Impact Factor = 1.144)
 104. **H. K. Lee**, T. S. Suh, B. Y. Choe, K. S. Shinn, G. Cho, and V. Perez-Mendez, "Transient Photoconductive Gain in a-Si:H Devices and its Applications in Radiation Detection," Nucl. Instr. and Meth. in Phys. Res. A, 399, pp.324-334, 1997. (Impact Factor = 1.362)
 105. **H. K. Lee** and K. S. Shinn, "Characteristics of Photoconductive Gain in Radiation Detection with a-Si:H Devices," J. Biomedical Eng. Research, 18(3), pp.307-313, 1997.
 106. B. Y. Choe, **H. K. Lee**, T. S. Suh, and K. S. Shinn, "Clinical and Experimental Applications of H-1 MRS," Korean J. Med. Phys., 7(1), pp.37-52, 1996.
 107. T. Jing, C. A. Goodman, G. Cho, W. S. Hong, J. S. Drewery, **H. K. Lee**, S. N. Kaplan, V. Perez-Mendez, and D. Wildermuth, "Detection of Charged Particles and X-Rays by Scintillator Layers Coupled to Amorphous Silicon Photodiode Arrays," Nucl. Instr. and Meth. in Phys. Res. A, 368, pp.757-764, 1996. (Impact Factor = 1.362)
 108. W. S. Hong, J. S. Drewery, T. Jing, **H. K. Lee**, S. N. Kaplan, A. Miresghhi, and V. Perez-Mendez, "Thick (~50 um) Amorphous Silicon p-i-n Diodes for Direct Detection of Minimum Ionizing Particles," Nucl. Instr. and Meth. in Phys. Res. A, 365, pp.239-247, 1995. (Impact Factor = 1.362)
 109. **H. K. Lee**, V. Perez-Mendez, and K. S. Shinn, "Application of Hydrogenated Amorphous Silicon (a-Si:H) Radiation Detectors in Nuclear Medicine," Korean J. Med. Phys., 6(1), pp.65-77, 1995.
 110. A. Miresghhi, **H. K. Lee**, W. S. Hong, J. S. Drewery, T. Jing, S. N. Kaplan, and V. Perez-Mendez, "Improvement of Electronic Transport Characteristics of Amorphous Silicon by Hydrogen Dilution of Silane," Japanese J. Applied Physics, 34, pp.3012-3018, 1995. (Impact Factor = 1.384)
 111. W. S. Hong, A. Miresghhi, J. S. Drewery, T. Jing, Y. Kitsuno, **H. K. Lee**, S. N. Kaplan, and V. Perez-Mendez, "Charged Particle Detectors Based on High Quality Amorphous Silicon Deposited with Hydrogen or Helium Dilution of Silane," IEEE Trans. Nucl. Sci., 42, pp.240-246, 1995. (Impact Factor = 1.171)
 112. A. Miresghhi, G. Cho, J. S. Drewery, W. S. Hong, T. Jing, **H. K. Lee**, S. N. Kaplan, and V. Perez-Mendez, "High Efficiency Neutron Sensitive Amorphous Silicon Pixel Detectors," IEEE Trans. Nucl.

- Sci., 41, pp.915-921, 1994. (Impact Factor = 1.171)
113. T. Jing, C. A. Goodman, G. Cho, J. S. Drewery, W. S. Hong, **H. K. Lee**, S. N. Kaplan, A. Miresghhi, V. Perez-Mendez, and D. Wildermuth, "Amorphous Silicon Pixel Layers with Cesium Iodide Converters for Medical Radiography," IEEE Trans. Nucl. Sci., 41, pp.903-909, 1994. (Impact Factor = 1.171)
114. G. Cho, J. S. Drewery, W. S. Hong, T. Jing, S. N. Kaplan, **H. K. Lee**, A. Miresghhi, V. Perez-Mendez, and D. Wildermuth, "Signal Readout in a-Si:H Pixel Detectors," IEEE Trans. Nucl. Sci., 40, pp.323-327, 1993. (Impact Factor = 1.171)
115. G. Cho, S. Qureshi, J. S. Drewery, T. Jing, S. N. Kaplan, **H. K. Lee**, A. Miresghhi, V. Perez-Mendez, and D. Wildermuth, "Noise in a-Si:H p-i-n Detector Diodes," IEEE Trans. Nucl. Sci., 39, pp.641-644, 1992. (Impact Factor = 1.171)
116. **H. K. Lee** and S. H. Hong, "Ideal MHD Beta Limit for Optimum Stable Operation of Axisymmetric Tokamak Reactor with a Circular Cross Section," Nuclear Engineering and Technology, 21, pp.32-40, 1989. (Impact Factor = 1.144)

D. Peer-Reviewed Conference Proceedings (Dr. Lee has published 41 refereed proceedings)

1. **K. Paaren***, S. M. Kilby, and **H. K. Lee (corresponding author)**, "Active Interrogation Using AmBe Directional Source and PGNA," Transactions of the American Nuclear Society, *accepted for publication*, 2019.
2. **K. Paaren*** and **H. K. Lee (corresponding author)**, "Simulation Study of Alpha-Neutron Reactions from AmBe Directional Source," Transactions of the American Nuclear Society, *accepted for publication*, 2019.
3. **K. Paaren*** and **H. K. Lee (corresponding author)**, "Experimental Measurement of ^{58}Ni Alpha-Capture Reactions," Transactions of the American Nuclear Society, Vol. 117, pp.480-481, 2017.
4. **A. Avachat*** and **H. K. Lee (corresponding author)**, V. Sinha, "Simulation Study on Electron Focusing for the First Prototype of a Compact X-ray Tube," Transactions of the American Nuclear Society, Vol. 117, p.499, 2017.
5. **M. Abir***, F. Islam, D. Wachs, and **H. K. Lee (corresponding author)**, "Sparse Sampling Tomographic Reconstruction of Radioactive Fuel Assembly," Transactions of the American Nuclear Society, Vol. 111, pp.523-524, 2014.
6. **M. Abir***, F. Islam, **H. K. Lee (corresponding author)**, and D. Wachs, "Assessment of Nuclear Fuels using Radiographic Thickness Measurement Method," Transactions of the American Nuclear Society, Vol. 111, pp.520-522, 2014.
7. **H. K. Lee**, K. Salleh, and M. H. Al-Dahhan, "X-ray Digital Industrial Radiography (DIR) and Particle Tracking Velocimetry (PTV) for Local Liquid Velocity (VLL) measurement in Trickle Bed Reactors (TBRs)," Transactions of the American Nuclear Society, Vol. 111, pp.518-519, 2014.
8. **F. Islam***, M. Abir, and **H. K. Lee (corresponding author)**, "Insufficient CT Data Reconstruction Based on MLEM-DTV Method," Transactions of the American Nuclear Society, Vol. 111, pp.527-530, 2014.
9. **S. Galib***, F. Islam, and **H. K. Lee (corresponding author)**, "A Novel Approach to Automatic Detection of Oral Lesions from CT Images," Transactions of the American Nuclear Society, Vol. 111, pp.515-517, 2014.
10. A. Srivastava, B. J. Heisinger, V. Sinha, **H.K. Lee**, and Xin Liu, "Determination of Minor and Trace Elements in Kidney Stones by X-Ray Fluorescence Analysis," SPIE Proc., Vol. 9033, 90335R, 2014.
11. **K. A. Salleh***, **H. K. Lee (corresponding author)**, and M. H. Al-Dahhan, "New Local Liquid Velocity Measurement Technique in Trickle Bed Reactors (TBRs) Using X-Ray Digital Industrial Radiography and Particle Tracking (DRPT) Techniques," Transactions of the American Nuclear Society, Vol. 109,

*The first author was a graduate student of Dr. Lee

- pp. 515-516, 2013.
12. **E. J. Grant***, C. M. Posada, A. Avachat, C. H. Castano, X. Liu, **H. K. Lee (corresponding author)**, R. Divan, A. Summant, and D. Lopez, "Construction of a Ultrananocrystalline Diamond based Cold Cathode Arrays for a Flat-Panel X-ray Source," SPIE Defense, Security, and Sensing, SPIE Vol. 8709, pp. 8709U-1-9, 2013.
 13. **V. Sinha***, A. Srivastava, **H. K. Lee (corresponding author)**, and X. Liu, "Feasibility Studies on Explosive Detection and Homeland Security Applications Using a Neutron and X-ray Combined Computed Tomography System," SPIE Defense, Security, and Sensing, SPIE Vol. 8710, pp. 87100W-1-9, 2013.
 14. **V. Sinha*** and **H. K. Lee (corresponding author)**, "Performance Evaluation of a Combined Neutron and X-ray Digital Imaging System," SPIE Smart Structures/NDE, SPIE Vol. 8694, pp. 86940R-1-11, 2013.
 15. X. Liu, A. Srivastava, **H. K. Lee**, and J. Hsieh, "Monte Carlo simulation of bowtie scatter on a wide-cone low dose CT system," SPIE Medical Imaging, SPIE Vol. 8668, pp. 86685W-1-7, 2013.
 16. **M. Abir***, F. Islam, D. Wachs, and **H. K. Lee (corresponding author)**, "Multiscale Based Adaptive Contrast Enhancement," SPIE Electronic Imaging, SPIE Vol. 8657, pp. 86570X-1-9, 2013.
 17. **H. K. Lee**, E. J. Grant, C. M. Posada, and C. H. Castaño, "Monte Carlo Simulation Study of a Flat-Panel X-Ray Source," Transactions of the American Nuclear Society, Vol. 105, pp. 355-356, 2011.
 18. **H. K. Lee** and F. A. Strantz, "Determination of TRISO Nuclear Fuel Density Using Multiple Projection X-ray Radiography," Transactions of the American Nuclear Society, Vol. 105, pp. 234-235, 2011.
 19. C. M. Posada, E. J. Grant, **H. K. Lee (PI of the research project)**, and C. H. Castaño, "Particle in Cell simulation of the Electron Source for a Distributed Flat-Panel X-Ray Source," Transactions of the American Nuclear Society, Vol. 105, pp. 15-17, 2011.
 20. **E. J. Grant***, C. M. Posada, C. H. Castano, and **H. K. Lee (corresponding author)**, "Electron Field Emission PIC Coupled with MCNPX Simulation of a CNT-based Flat-Panel X-Ray Source," SPIE Proc. Vol. 7961, 2011
 21. Y. Park, S. Han, J. Chae, C. Kim, K. S. Chon, **H. K. Lee**, and D. S. Han, "Quasi-Monochromatic X-Ray Filter with Thin Film Multilayer for a Large Area Radiation Field," SPIE Proc. Vol. 7258, pp.3L1-9, 2009.
 22. **D. Y. Jang***, D. I. Kim, C. J. Park, J. S. H. Kim, N. K. Jung, S. W. Seo, W. Seong, and **H. K. Lee (corresponding author)**, "Performance Evaluation of Carbon-Interspaced Antiscatter Grids in Mammography: Empirical Formula and Monte Carlo Simulation Studies," 2007 IEEE Nuclear Science Symposium Conference Record, pp.3621-3624, 2007.
 23. D. H. Yim, G. B. Kim, D. I. Kim, **H. K. Lee**, and S. J. Lee, "Medical X-ray PIV technique for visualizing quantitative velocity field distributions of blood flows," IFMBE Proceedings, 14(1), pp.742-745, 2007.
 24. **S. H. Kim***, D. I. Kim, J. W. Yoon, **H. K. Lee (corresponding author)**, T. S. Suh, and B. Y. Choe, "Image Quality Analysis of an a-Si:H/CsI(Tl) Flat-Panel Based Digital Radiography System Using a Chest Phantom," World Congress on Medical Physics and Biomedical Engineering, pp. 1559-1562, 2006
 25. **J. W. Yoon***, T. S. Suh, and **H. K. Lee (corresponding author)**, "A mechanical method to remove Moire patterns of an X-ray antiscatter grid with a fixed type of grid in digital radiography," International conference on quality assurance and new techniques in radiation medicine, Book of extended synopses, pp. 162-163, 2006.
 26. **H. K. Lee**, D. I. Kim, S. H. Kim, J. W. Youn, D. S. Park, B. Y. Choe, and T. S. Suh, "An Iterative Method for Flat-field Correction of Digital Radiography When Detector is at Any Position," SPIE Proc. Vol. 5745, pp.1025-1029, 2005.
 27. J. S. Kim, S. S. Jeun, B. S. Kim, S. L. Jung, G. H. Lee, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "Neural Correlates in Implicit and Explicit Face Perception Tests by Event-Related fMRI," Proc. Intl. Soc. Mag. Reson. Med., 11, p.1151, 2004.
 28. D. H. Shin, T. S. Suh, H. K. Lee, B. Y. Choe, and K. S. Shinn, "Optimal Localization and Image Fusion for DSA/CT/MRI using Leksell Frame," Proceedings of the 22nd Annual EMBS International

*The first author was a graduate student of Dr. Lee

- Conference, pp.1445-1446, 2000.
29. G. Cho, H. K. Kim, S. W. Lee, D. K. Kim, **H. K. Lee**, and K. S. Joo, "Monte Carlo Analyses of X-ray Absorption, Noise and Detective Quantum Efficiency Considering Therapeutic X-ray Spectrum in Portal Imaging Detector," 2000 IEEE Nuclear Science Symposium Conference Record, pp.19/64-68, 2000.
 30. J. H. Park, T. S. Suh, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Search of the optimum beam position and size in radiation treatment," 22nd Conference of the IEEE Engineering in Medicine and Biology Society, 3, pp. 1846-1847, 2000.
 31. T. S. Suh, K. H. Cho, H. N. Kim, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Dosimetric evaluation with/without a flattening filter in stereotactic radiosurgery," 22nd Conference of the IEEE Engineering in Medicine and Biology Society, 4, pp. 2694-2695, 2000.
 32. **H. K. Lee**, K. S. Shinn, T. S. Suh, B. Y. Choe, S. K. Chung, and G. Cho, "Monte Carlo Studies on the Amorphous Silicon Based Digital X-Ray Imagers," 1997 IEEE Nuclear Science Symposium Conference Record, pp.1288-1292, 1997.
 33. **H. K. Lee**, J. S. Drewery, W. S. Hong, T. Jing, S. N. Kaplan, and V. Perez-Mendez, "Photoconductive Gain in Hydrogenated Amorphous Silicon Devices and Its Applications," MRS Symp. Proc., 377, pp.767-772, 1995.
 34. W. S. Hong, V. Petrova-Koch, J. Drewery, T. Jing, **H. K. Lee**, and V. Perez-Mendez, "Thick amorphous silicon layers suitable for the realization of radiation detectors," MRS Symp. Proc., 377, pp.773-778, 1995.
 35. **H. K. Lee**, J. S. Drewery, W. S. Hong, T. Jing, S. N. Kaplan, A. Mireshghi, and V. Perez-Mendez, "Hydrogenated Amorphous Silicon (a-Si:H) Based Gamma Camera - Monte Carlo Simulations," SPIE Proc. Vol. 2163, pp.427-438, 1994.
 36. W. S. Hong, A. Mireshghi, J. S. Drewery, T. Jing, Y. Kitsuno, **H. K. Lee**, S. N. Kaplan, and V. Perez-Mendez, "Charged Particle Detectors Based on High Quality Amorphous Silicon Deposited with Hydrogen or Helium Dilution of Silane," 1994 IEEE Nuclear Science Symposium Conference Record, 1, pp.218-222, 1994.
 37. A. Mireshghi, W. S. Hong, J. S. Drewery, T. Jing, S. N. Kaplan, **H. K. Lee**, and V. Perez-Mendez, "Improved Electrical and Transport Characteristics of Amorphous Silicon by Enriching with Microcrystalline Silicon," MRS Symp. Proc., 336, pp.377-382, 1994.
 38. T. Jing, C.A. Goodman, G. Cho, J. Drewery, W. S. Hong, **H. K. Lee**, S. N. Kaplan, A. Mireshghi, V. Perez-Mendez, and D. Wildermuth, "Evaluation of a structured cesium iodide film for radiation imaging purposes," IEEE Nuclear Science Symposium & Medical Imaging Conference Proc. pp.1878-1882, 1994.
 39. **H. K. Lee**, G. Cho, J. S. Drewery, W. S. Hong, T. Jing, S. N. Kaplan, A. Mireshghi, V. Perez-Mendez, and D. Wildermuth, "New a-Si:H Photo-Detectors for Long-Term Charge Storage," MRS Symp. Proc., 297, pp.1023-1028, 1993.
 40. G. Cho, J. S. Drewery, W. S. Hong, T. Jing, **H. K. Lee**, S. N. Kaplan, A. Mireshghi, V. Perez-Mendez, and D. Wildermuth, "Utilization of a-Si:H Switching Diodes for Signal Readout from a-Si:H Pixel Detectors," MRS Symp. Proc., 297, pp.969-974, 1993.
 41. G. Cho, S. Qureshi, J. S. Drewery, T. Jing, S. N. Kaplan, **H. K. Lee**, A. Mireshghi, V. Perez-Mendez, and D. Wildermuth, "Noise in a-Si:H p-i-n Detector Diodes," 1991 IEEE Nuclear Science Symposium Conference Record, 1, pp.121-124, 1991.

E. Invited Presentations

(Dr. Lee has given 28 invited presentations)

1. "Advanced Radiation Imaging Research at Missouri S&T," University of Missouri, Kansas City, MO, 9/10/2019.

2. "Advanced Radiation Imaging Research at Missouri S&T," University of Illinois, Urbana, 1/15/2019.
3. "Advanced Radiation Imaging Research at Missouri S&T," Lawrence Livermore National Laboratory, Livermore, CA, 12/5/2018.
4. "Beyond Traditional Imaging," Lawrence Livermore National Laboratory, Livermore, CA, 12/13/2016.
5. "Medical Applications of Nuclear Engineering Technologies," Washington University, St. Louis, MO, 12/5/2016.
6. "Flat-Panel X-ray Source based on Electron Field Emitter," Energy Materials and Nanotechnology Meeting on Vacuum Electronics, Las Vegas, NV, 11/21/2015.
7. "Development of an N-UNCD Based Field Emitter Array for a Flat Panel X-Ray Source," Plenary Session of APS/CNM/EMC Users Meeting, Argonne National Laboratory, 5/12/2014.
8. "Flat-Panel X-Ray Source," Samsung Advanced Institute of Technology, Kiheung, Korea, 7/5/2013.
9. "Beyond the Traditional Imaging: Neutron/X-Ray Combined CT and Flat-Panel X-Ray," Korea Advanced Institute of Science and Technology, Daejun, Korea, 7/3/2013.
10. "Radiation Imaging Research Activities at Missouri S&T," Mines and Metallurgy Academy, Rolla, MO, 4/14/2011.
11. "Current CT Technologies in Medical and Dental Fields," Korean Society of Medical Physics, Gangreung, Korea, 4/10/2009.
12. "Current Status of Dental CT Technology in Korea: Cone Beam CT, Fast Reconstruction, and Metal Artifact Reduction," International Symposium on Biomedical Imaging, Seoul, Korea, 10/10/2008.
13. "Medical Applications of Radiation," Nuclear Relay Forum, Wonju, Korea, 9/2/2008.
14. "Current Status of X-ray Imaging: DR, Cone Beam CT, and Nano X-ray Imaging," International Symposium on Radiation Physics and Radiation Oncology, Seoul, Korea, 9/1/2007.
15. "Introduction to Medical Imaging Modalities," Korean Society of Visualization, Daejeon, Korea, 4/20/2007.
16. "Basic and Hands-on Technologies for X-ray Image Optimization and Enhancement," Nano-Imaging Symposium, Iksan, Korea, 1/20/2006.
17. "Image Processing Techniques for Radiographic Images," Korean Society of Radiological Science, Seoul, Korea, 10/8/2005.
18. "Trend of Medical Imaging Technology," Symposium of Korean Intellectual Property Office, Seoul, Korea, 12/10/2004.
19. "Technology Trend of Diagnostic Imaging Modalities and Introduction to DR Technology," The First Hongcheon Forum, Hongcheon, Korea, Dec. 2004.
20. "Definition and Trend of Medical Imaging Technology," Symposium of Medical Image Diagnosis System Technology, Seoul, Korea, Mar. 2004.
21. "PET/CT Principle," Korean Radiological Society, Seoul, Korea, 10/20/2004.
22. "The Past, Present, and Future of Digital Radiography," Bio Forum, Pohang, Korea, 10/1/2003.
23. "Digital Radiography," National Taiwan University Hospital, Taipei, Taiwan, Feb. 2003.
24. "Technology of Digital Radiography," The First Workshop on Radiation Detection Technology and Nuclear Physics School, Daejeon, Korea, 1/7/2003.
25. "Current Status and Future Aspect of Radiation Technology in Medicine," Seoul Rotary Club, Seoul, Korea, 2001.
26. "Program Development for Quantification Analysis of Nuclear Medicine Image & Application to a Renal Function Study," BMRC Symposium, Daejeon, Korea, Aug. 2000.
27. "Flat Panel Digital Radiography," Korean Society of Digital Imaging Technology, Seoul, Korea, Mar. 2000.

28. "Amorphous Silicon Based Medical Imaging" BMRC symposium, Daejeon, Korea, 12/6/1997.

F. Abstracted Presentations

(Dr. Lee has given 111 abstracted presentations at conferences)

1. **H. K. Lee** and A. Avachat, "Compact X-Ray Tubes for Stationary CT Architectures," 4th World Congress on Medical Imaging and Clinical Research, London, UK, 9/3/2018.
2. **H. K. Lee** and A. Avachat, "Development of a Compact X-ray Tube Comprising Field-Emission Based Cold Cathode and Transmission Type Anode for Semi-stationary and Stationary CT Architectures," Energy Materials and Nanotechnology (EMN), Barcelona, Spain, 9/11/2018.
3. **A. Avachat***, W. Tucker, and **H. K. Lee**, "Development of Compact X-ray Tubes for Stationary CT Architecture," Ozark Biomedical Initiative Research Symposium, 8/18/2018.
4. **H. K. Lee** and K. M. Paaren, "Development of Switchable Radioisotope Generator," 18th Radiochemical Conference, Marianske Lazne, Czech Republic, 5/17/2018.
5. **K. M. Paaren*** and **H. K. Lee**, "Experimental Measurement of ⁶³Cu Alpha-Capture Reactions," ANS Student Conference, Pittsburgh, PA, 4/6/2017.
6. **H. K. Lee**, "Design and Development of a Compact X-ray Tube for Semi-Stationary and Stationary CT Architectures," International Conference on Advancements in Nuclear Instrumentation Measurement Methods and their Applications (ANIMMA), Liege, Belgium, 6/19/2017.
7. **M. Abir***, F. Islam, W. Williams, A. Craft, D. Chichester, M. Meyer, D. Wachs, and **H. K. Lee**, "Determination of optimal imaging parameters for the reconstruction of a nuclear fuel assembly using limited angle neutron tomography," International Workshop on Imaging, Varenna, Italy, 9/7/2015.
8. **F. Islam***, M. Abir, and **H. K. Lee**, "Inspection of TRISO fuel coating layer thickness using sparse view CT reconstruction," International Workshop on Imaging, Varenna, Italy, 9/7/2015.
9. **S. Galib***, F. Islam, M. Abir, and **H. K. Lee**, "Computer aided detection of oral lesions on CT images," International Workshop on Imaging, Varenna, Italy, 9/7/2015.
10. **M. Abir***, F. Islam, D. Wachs, and **H. K. Lee**, "Sparse-View Neutron CT Reconstruction of Irradiated Fuel Assembly using Total Variation Minimization with Poisson Statistics," Tenth International Conference on Methods and Applications of Radioanalytical Chemistry, Kona, HI, 4/12/2015.
11. **K. A. Salleh***, **H. K. Lee**, and M. H. Al-Dahhan, "Application of Digital Industrial Radiography (DIR) in hydrodynamic study of Trickle Bed Reactors (TBRs)," International Symposium on Digital Industrial Radiography and Computed Tomography, 2015.
12. C. Posada, E. Grant, R. Divan, A. Sumant, D. Rosenmann, L. Stan, **H. K. Lee**, and C. H. Castano, "Fabrication and testing of planar N-UNCD film based field emitter array for a flat panel transmission x-ray source," New Diamond and Nano Carbons Conference (NDNC 2014), Chicago, IL, 5/25/2014.
13. **K. A. Salleh***, **H. K. Lee**, and M. H. Al-Dahhan, "Development of a New Liquid Velocity Measurement Technique in Trickle Bed Reactors (TBRs) Using Combined Digital Radiography and Particle Tracking (DRPT) Techniques," AIChE Annual Meeting, 11/3/2013.
14. **E. Grant***, C. Posada, A. Avachat, C. Castano, and **H. K. Lee**, "A Fabricated Ultra-Nanocrystalline Diamond Field Emission Array for a Flat-Panel X-ray Source," 4th Annual Nanofrontiers Symposium, Columbia, MO, 6/6/2013.
15. **E. Grant***, C. Posada, R. Divan, A. Sumant, D. Rosenmann, L. Stan, A. Avachat, C. Castano, and **H. K. Lee**, "A Micro Patterned Field Emission Cathode Array Based on Ultra-Nanocrystalline Diamond for a Flat-Panel X-ray Emitter," CNM/APS/EMC user meeting, Argonne National Lab, 5/7/2013.
16. A. Srivastava, V. Sinha, **H. K. Lee**, and X. Liu, "Determination of Minor and Trace Elements in Kidney Stones by X-ray Fluorescence and Neutron Activation Analysis Techniques," Council on Ionizing Radiation Measurements and Standards (CIRMS), Gaithersburg, MD, 3/10/2012.

*The first author was a graduate student of Dr. Lee

17. **V. Sinha*** and **H. K. Lee**, "A New Type of a Combined Neutron/X-ray Digital Imaging System for Explosive Detection and Homeland Security Applications," Council on Ionizing Radiation Measurements and Standards (CIRMS), Gaithersburg, MD, 10/23/2012.
18. **F. Islam***, M. Abir, and **H. K. Lee**, "Optimally Regularized Globally Convergent Iterative Reconstruction Method for Neutron Tomosynthesis," Council on Ionizing Radiation Measurements and Standards (CIRMS), Gaithersburg, MD, 10/23/2012.
19. **V. Sinha*** and **H. K. Lee**, "Characterization of the Neutron/X-Ray Combined Computed Tomography System (NXCT) at Missouri S&T," American Society for Nondestructive Testing (ASNT) Fall Conference, Orlando, FL, 10/29/2012.
20. **V. Sinha*** and **H. K. Lee**, "A Novel Neutron X-Ray Combined Computed Tomography System at Missouri S&T," American Society for Nondestructive Testing (ASNT) Fall Conference, Orlando, FL, 10/29/2012.
21. **V. Sinha*** and **H. K. Lee**, "Design and Development of Missouri S&T Neutron/X-Ray Combined Computed Tomography System," International Conference on Methods and Applications of Radioanalytical Chemistry (MARC) IX, Kailua-Kona, HI, 3/30/2012.
22. **V. Sinha*** and **H. K. Lee**, "Development of Algorithms for Fusion of Neutron and X-Ray Images using Missouri S&T Neutron/X-Ray Combined CT Facility," International Conference on Methods and Applications of Radioanalytical Chemistry (MARC) IX, Kailua-Kona, HI, 3/27/2012.
23. **A. Avachat*** and **H. K. Lee**, "Wavelet based Contrast Limited Adaptive Histogram Equalization for Contrast Enhancement of Mammograms," Memphis BioImaging Symposium, Memphis, TN, 11/3/2011.
24. **M. Abir*** and **H. K. Lee**, "Contrast Enhancement of Digital Mammography based on Multiscale Image Pyramid," Memphis BioImaging Symposium, Memphis, TN, 11/3/2011.
25. **H. K. Lee**, S. Chang, G. Cho, and H. S. Cho, "A Feasibility Study of Applying a Dual-Energy Monochromatic X-Ray CT Algorithm to a Polychromatic X-Ray CT," Memphis BioImaging Symposium, Memphis, TN, 11/4/2010.
26. **H. K. Lee**, S. Y. Kim, and H. S. Cho, "A Preliminary Study of a Dual-Gantry Cone Beam CT," Memphis BioImaging Symposium, Memphis, TN, 11/4/2010.
27. C. M. Posada, E. J. Grant, **H. K. Lee**, and C. H. Castano, "Electron Field Emission and X-Ray Generation Simulation Studies of a CNT-based Flat-Panel X-Ray Source," Memphis BioImaging Symposium, Memphis, TN, 11/4/2010.
28. **C. J. Park***, C. S. Sohn, M. K. Cho, **H. K. Lee**, B. Y. Choe, T. U. Suh, and H. K. Kim, "Reducing Blur Artifacts in Digital Tomosynthesis: Iterative Self-Layer Subtraction," 2008 IEEE Medical Imaging Conference, Dresden, Germany, 10/19/2008.
29. **C. J. Park***, M. K. Cho, H. B. Youn, B. Y. Choe, D. I. Kim, D. Y. Jang, H. K. Kim, and **H. K. Lee**, "Defective Pixel Detection and Compensating Algorithm for Digital Radiography Based on Combined Wavelet and Local Verification Analysis," The 5th KOREA-JAPAN Joint Meeting on Medical Physics, Jeju, Korea, Sept. 9/11/2008.
30. **D. Y. Jang***, D. I. Kim, C. J. Park, and **H. K. Lee**, "Performance Evaluation of Carbon-interspaced Antiscatter Grids: Monte Carlo Simulation Studies," The 5th KOREA-JAPAN Joint Meeting on Medical Physics, Jeju, Korea, 9/10/2008.
31. **D. Y. Jang***, D. I. Kim, C. J. Park, T. E. Choi, J. N. Lee, and **H. K. Lee**, "Performance Evaluation of Mammographic Antiscatter Grids: Empirical Formula and Monte Carlo Simulation Studies," Radiological Society of North America, Chicago, IL, 11/25/2007.
32. **H. K. Lee**, D. I. Kim, T. E. Choi, C. J. Park, D. Y. Jang, B. Y. Choe, T. S. Suh, and S. Y. Kim, "A Preliminary Study of a Cone Beam CT System with Dual Gantry," CARS, Berlin, Germany, 6/27/2007.
33. **H. K. Lee**, J. W. Yoon, D. I. Kim, Y. G. Park and T. S. Suh, "Fixed Grid: Usage in Digital Radiography: Moiré Pattern Elimination with Carbon-interspaced Grids," Radiological Society of North America, Chicago, IL, 11/29/2006.

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34. **J. W. Yoon***, D. I. Kim, Y. G. Park, N. G. Chung, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "Alignment of a Fixed Carbon-Interspaced Grid for the Removal of Moiré Pattern in Digital Radiography," World Congress on Medical Physics and Biomedical Engineering, Seoul, Korea, 8/29/2006.
35. **H. K. Lee**, D. I. Kim, B. Y. Choe, T. S. Suh, T. E. Choi, C. J. Park, D. Y. Jang, and S. Y. Kim, "A Preliminary Study of a New Concept Cone Beam CT System," World Congress on Medical Physics and Biomedical Engineering, Seoul, Korea, 8/29/2006.
36. **T. E. Choi***, I. S. Hahn, D. I. Kim, J. W. Yoon, C. J. Park, D. Y. Jang, T. W. Kim, Y. K. Jin, Y. S. Koo, and **H. K. Lee**, "Optimization of Gain Image Acquisition Technique for Low Noise Flat-field Correction with DR Sensors," World Congress on Medical Physics and Biomedical Engineering, Seoul, Korea, 8/29/2006.
37. **D. I. Kim***, J. W. Yoon, J. G. Kim, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "Monte-Carlo Simulation Studies for the Performance Characteristics of Antiscatter Grids," World Congress on Medical Physics and Biomedical Engineering, Seoul, Korea, 8/29/2006.
38. **D. I. Kim***, B. Y. Choe, T. S. Suh, and **H. K. Lee**, "An Iterative Method for Flat Field Correction in Digital Radiography Detector," World Congress on Medical Physics and Biomedical Engineering, Seoul, Korea, 8/29/2006.
39. **S. H. Kim***, **H. K. Lee**, D. I. Kim, J. W. Yoon, T. S. Suh, and B. Y. Choe, "Diagnostic Utility Evaluation of an a-Si:H/CsI(Tl) Flat Panel Based Digital Radiography System," American Association of Physicists in Medicine, Orlando, FL, 7/30/2006.
40. **J. W. Yoon***, **H. K. Lee**, D. I. Kim, Y. M. Kim, B. Y. Choe, and T. S. Suh, "Dual Energy X-ray Spectrum Measurement for the Application of a Mobile Fluoroscopic C-arm to DXA," The 4th Japan-Korea Joint Meeting on Medical Physics, Kyoto, Japan, 9/29/2005.
41. **H. K. Lee**, D. I. Kim, J. W. Youn, Y. G. Park, and N. K. Chung, "Development of Antiscatter Grid Characteristics Evaluation System," The 4th Japan-Korea Joint Meeting on Medical Physics, Kyoto, Japan, 9/29/2005.
42. **H. K. Lee**, J. W. Youn, Y. M. Kim, D. I. Kim, S. H. Kim, D. S. Park, B. Y. Choe, and T. S. Suh, "X-ray Spectrum Measurement for the Dual Energy X-ray Bone Densitometry in a Mobile Fluoroscopic C-arm," CARS, Berlin, Germany, 6/23/ 2005.
43. **H. K. Lee**, J. A. Lee, S. H. Kim, B. Y. Choe, T. S. Suh, and J. S. Kim, "Performance Evaluation of Digital Radiography Antiscatter Grids using Film Digitizers," Radiological Society of North America, Chicago, IL, 12/2/2003.
44. K. H. Cheong, T. S. Suh, **H. K. Lee**, B. Y. Choe, H. N. Kim, and S. C. Yoon, "Monte Carlo Calculation Time Reduction Technique for Photon and Electron Beam Using Denoising Filter," Radiological Society of North America, Chicago, IL, 12/2/2003.
45. **H. K. Lee**, D. I. Kim, S. H. Kim, D. S. Ho, T. S. Suh, and B. Y. Choe, "Calculation of Absorbed Energy in DR Detector Using SPEC-78," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
46. **D. S. Ho***, **H. K. Lee**, S. H. Kim, D. I. Kim, T. S. Suh, and B. Y. Choe, "Development of the Human Body Model Based on CT and MR Images," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
47. J. N. Chang, T. S. Suh, S. N. Huh, H. N. Kim, S. C. Yoon, **H. K. Lee**, and B. Y. Choe, "Dose Verification using a Pelvic Phantom in High Dose Rate (HDR) Brachytherapy," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
48. S. J. Oh, T. S. Suh, J. Y. Song, B. Y. Choe, **H. K. Lee**, M. C. Kim, and T. K. Lee, "Rapid Optimization Technique Using Geometrical Shaping For SRS," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
49. H. S. Jin, J. Y. Song, R. H. Juh, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Accuracy Evaluation of Multimodal Image Registration Using a Brain Phantom," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.

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50. J. B. Chung, T. S. Suh, B. Y. Choe, **H. K. Lee**, and W. K. Chung, "The Development of a New Whole Body Stereotactic Frame for Radiotherapy," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
51. K. H. Cheong, T. S. Suh, **H. K. Lee**, B. Y. Choe, H. N. Kim, S. C. Yoon, and B. C. Cho, "Comparison Study for the Evaluation of Dose Accuracy in Heterogeneous Phantoms for 6MV X-Ray - Measurements, Pencil Beam Model and Monte Carlo Simulation," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
52. R. H. Juh, T. S. Suh, B. Y. Choe, **H. K. Lee**, J. S. H. Kim, and D. H. Moon, "Quantification Analysis of Dopamine Transport Imaging using 123I- IPT SPECT," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
53. R. H. Juh, T. S. Suh, B. Y. Choe, **H. K. Lee**, J. S. H. Kim, and D. H. Moon, "The Utility of 18F-FDG PET for Diagnosis of the Parkinsonism," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
54. J. H. Park, T. S. Suh, and **H. K. Lee**, "Integration of Bone Densitometry Data with PACS system," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
55. T. S. Suh, D. H. Shin, **H. K. Lee**, and B. Y. Choe, "Development of PC-Based 3D Radiation Therapy Planning System," World Congress on Medical Physics and Biomedical Engineering, Sydney, Australia, 8/24/2003.
56. T.S. Suh, H.S. Jin, J.Y. Song, R.H. Juh, B.Y. Choe, and **H. K. Lee**, "Verification of Multimodal Image Registration using CT/MR/SPECT Brain Phantom," International Society for Magnetic Resonance in Medicine, Toronto, Canada, 7/10/2003.
57. H.M. Baik, B.Y. Choe, B.C. Son, M.C. Kim, E.N. Kim, **H. K. Lee**, and T.S. Suh, "Feasibility of Proton Chemical Shift Imaging with a Stereotactic Headframe," International Society for Magnetic Resonance in Medicine, Toronto, Canada, 7/10/2003.
58. H.M. Baik, B.Y. Choe, B.C. Son, M.C. Kim, E.N. Kim, H.K. Lee, and T.S. Suh, "Proton Magnetic Resonance Spectroscopy of the Primary Motor Cortex in Hemiparetic Patients due to Deep Intracerebral Hematoma," International Society for Magnetic Resonance in Medicine, Toronto, Canada, 7/10/2003.
59. B.Y. Choe, S.S. Jeun, B.C. Son, M.C. Kim, B.S. Kim, S.T. Chung, C.B. Ahn, C.H. Oh, S.I. Kim, **H.K. Lee**, and T.S. Suh, "Assessment of Malignancy in Human Brain Tumors by In vivo 1H MR Spectroscopy at 3 Tesla," International Society for Magnetic Resonance in Medicine, Toronto, Canada, 7/10/2003.
60. J. B. Chung, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "The Development of a new Stereotactic Whole Body Frame for Fractionated extra-cranial Radiotherapy," 6th International Stereotactic Radiosurgery Society Congress, Kyoto, Japan, 6/22/2003.
61. S. J. Oh, T. S. Suh, J. Y. Song, B. Y. Choe, **H. K. Lee**, M. C. Kim, and T. K. Lee, "Rapid Planning Technique based on Heuristic Target Shaping for SRS," 6th International Stereotactic Radiosurgery Society Congress, Kyoto, Japan, 6/22/2003.
62. **J. Y. Song***, H. S. Jin, T. S. Suh, **H. K. Lee**, B. Y. Choe, B. S. Nah, and W. K. Chung, "Evaluation of the Chamfer Matching Technique and the Mutual Information Technique in the Registration of Multimodality Images (CT-MRI, CT-SPECT)," 6th International Stereotactic Radiosurgery Society Congress, Kyoto, Japan, 6/22/2003.
63. H. S. Jin, J. Y. Song, R. H. Juh, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Verification of Multimodal Image Registration using CT/MR/SPECT Brain Phantom," 6th International Stereotactic Radiosurgery Society Congress, Kyoto, Japan, 6/22/2003.
64. H. G. Yun, S. N. Huh, **H. K. Lee**, H. G. Woo, K. C. Shin, and S. W. Ha, "Modification of Transmission Dose Algorithm for Irregularly Shaped Radiation Field and Tissue Deficit," The 1st Asian and Oceanic Congress for Radiation Protection, Seoul, Korea, 10/21/2002.
65. K. H. Cheong, T. S. Suh, H. N. Kim, **H. K. Lee**, B. Y. Choe, and S. C. Yoon, "A Comparative Study for Dose Calculation in Radiation Therapy: Pencil Beam Kernel Based vs. Monte Carlo Simulations

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- vs. Measurements," The 1st Asian and Oceanic Congress for Radiation Protection, Seoul, Korea, 10/21/2002.
66. S. R. Kim, J. W. Sohn, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Comparison of Film Dosimetry and Monte Carlo Simulations in Small Field IMRT," The 1st Asian and Oceanic Congress for Radiation Protection, Seoul, Korea, 10/22/2002.
 67. S. J. Oh, T. S. Suh, **H. K. Lee**, and B. Y. Choe, "The Development of Optimization Protocol in SRS," The 1st Asian and Oceanic Congress for Radiation Protection, Seoul, Korea, 10/22/2002.
 68. **D. S. Ho***, **H. K. Lee**, T. S. Suh, B. Y. Choe, S. H. Kim, and D. I. Kim, "Monte Carlo Studies on Mammography System," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/28/2002.
 69. K. H. Cheong, T. S. Suh, H. N. Kim, **H. K. Lee**, B. Y. Choe, and S. C. Yoon, "Photon Dose Calculation of Pencil Beam Kernel Based Treatment Planning System Compared to the Monte Carlo Simulation," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/28/2002.
 70. J. N. Jang, T. S. Suh, S. N. Huh, H. N. Kim, S. C. Yoon, **H. K. Lee**, and B. Y. Choe, "Development of a Pelvic Phantom for Verification in High Dose Rate (HDR) Brachytherapy," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 71. S. J. Oh, T. S. Suh, J. Y. Song, B. Y. Choe, and **H. K. Lee**, "Optimization Technique using Ideal Target Model and Data Base for SRS," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 72. H. S. Jin, T. S. Suh, J. Y. Song, R. H. Juh, C. Kwark, **H. K. Lee**, and B. Y. Choe, "Development of a Brain Phantom for Multimodal Image Registration in Radiotherapy Treatment Planning," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 73. **S. H. Kim***, **H. K. Lee**, D. S. Ho, D. I. Kim, B. Y. Choe, and T. S. Suh, "Automatic Anatomically Adaptive Image Enhancement in Digital Chest Radiography," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 74. K. H. Cheong, T. S. Suh, **H. K. Lee**, and B. Y. Choe, "Three Dimensional Target Volume Reconstruction from Multiple Projection Images," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 75. J. B. Chung, T. S. Suh, B. Y. Choe, **H. K. Lee**, and W. K. Chung, "Study on the Development of New Whole Body Frame," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 76. **J. Y. Song***, T. S. Suh, **H. K. Lee**, B. Y. Choe, S. D. Ahn, E. K. Choi, J. H. Kim, S. W. Lee, and B. Y. Yi, "Practical Virtual Compensator Design with Dynamic Multi-Leaf Collimator (dMLC) from Iso-Dose Distribution," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/27/2002.
 77. **J. W. Yoon***, **H. K. Lee**, and H. K. Lee, "Application of An Energy Sensitive CZT Detector to A DXA Type of Bone Densitometer," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/26/2002.
 78. **H. K. Lee**, J. A. Lee, S. H. Kim, D. S. Ho, D. I. Kim, T. S. Suh, B. Y. Choe, J. S. H. Kim, and J. W. Kim, "Performance Evaluation of Digital Radiography Antiscatter Grids using Film Digitizers," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/26/2002.
 79. **D. I. Kim***, **H. K. Lee**, T. S. Suh, B. Y. Choe, S. H. Kim, and D. S. Ho, "DR Responses to X-Ray: in Terms of Absorbed Dose," The 3rd Korea-Japan Joint Meeting on Medical Physics and the 2nd Asia Oceania Congress of Medical Physics, Gyeongju, Korea, 9/26/2002.
 80. S. J. Oh, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Rapid Optimization Technique Using Ideal Target Model and Data Base for SRS," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.

*The first author was a graduate student of Dr. Lee

81. R. H. Juh, T. S. Suh, C. Kwark, B. Y. Choe, **H. K. Lee**, Y. A. Chung, S. H. Kim, and S. K. Chung, "Quantitative Evaluation of Regional Cerebral Blood Flow by Visual Stimulation in Tc-99m HMPAO Brain SPECT," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.
82. R. H. Juh, T. S. Suh, C. Kwark, B. Y. Choe, **H. K. Lee**, Y. A. Chung, S. H. Kim, and S. K. Chung, "A Usefulness of Simultaneous I-123 and Tc-99m HMPAO Dual Isotope SPECT in Parkinson's Patients," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.
83. H. S. Jin, T. S. Suh, R. H. Juh, **H. K. Lee**, C. Kwark, and B. Y. Choe, "Accuracy of Image Registration for Radiation Treatment Planning Using a Brain Phantom," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.
84. K. H. Cheong, T. S. Suh, B. Y. Choe, and **H. K. Lee**, "Three Dimensional Target Volume Reconstruction from Multiple Projection Images," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002
85. T. S. Suh, R. H. Juh, H. S. Jin, C. Kwark, **H. K. Lee**, and B. Y. Choe, "Evaluation of Accuracy in Target Positions of CT, MR and SPECT Images Using Multi-Modality Brain Phantom," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.
86. **J. Y. Song***, S. D. Ahn, E. K. Choi, J. H. Kim, S. W. Lee, **H. K. Lee**, T. S. Suh, B. Y. Choe, and B. Y. Yi, "Practical Virtual Compensator Design with Dynamic Multi-Leaf Collimator (dMLC) from Iso-Dose Distribution," American Association of Physicists in Medicine, Montreal, Canada, 7/14/2002.
87. **J. A. Lee***, **H. K. Lee**, T. S. Suh, B. Y. Choe, and K. S. Shinn, "A Comparative Study of Methods for the Registration of Portal and Simulator Images Using Landmarks," American Association of Physicists in Medicine, Salt Lake City, UT, 7/22/2001.
88. **H. K. Lee**, H. M. Kim, T. S. Suh, B. Y. Choe, and K. S. Shinn, "Calculation Renal Depth from Nuclear Medicine Imaging Used Conjugate-View Method," American Association of Physicists in Medicine, Salt Lake City, UT, 7/22/2001.
89. **J. Y. Song***, **H. K. Lee**, T. S. Suh, B. Y. Choe, and K. S. Shinn, "Development of Automated Region of Interest for the Evaluation of Renal Scintigraphy: Study on the Inter-Operator Variability," American Association of Physicists in Medicine, Salt Lake City, UT, 7/22/2001.
90. T. S. Suh, J. H. Park, B. C. Son, **H. K. Lee**, B. Y. Choe, and K. S. Shinn, "Determination of Optimal Beam Position and Size in Stereotactic Radiosurgery," 5th International Stereotactic Society Congress Radiosurgery, Las Vegas, NV, 6/10/2001.
91. T. S. Suh, D. H. Shin, S. N. Huh, **H. K. Lee**, B. Y. Choe, and K. S. Shinn, "Localization Error with Distortion Correction for DSA/CT/MRI," 5th International Stereotactic Society Congress Radiosurgery, Las Vegas, NV, 6/10/2001.
92. D. H. Shin, T. S. Suh, **H. K. Lee**, B. Y. Choe, K. S. Shinn, and B. C. Son, "Optimum Localization & Image Fusion for DSA/CT/MRI," The 3rd BMRC Symposium, Daejeon, Korea, 8/17/2000.
93. J. H. Park, T. S. Suh, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Research of Optimum Beam Position and Field Sizes in RT/SRS," The 3rd BMRC Symposium, Daejeon, Korea, 8/17/2000.
94. T. S. Suh, K. H. Cho, H. N. Kim, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Dosimetric Evaluation with/without a Flattening Filter in Stereotactic Radiosurgery," World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, Jul. 2000.
95. D. H. Shin, T. S. Suh, **H. K. Lee**, B. Y. Choe, and K. S. Shinn, "Optimum Localization and Image Fusion for DSA/CT/MRI Using Leksell Frame," World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, Jul. 2000.
96. J. H. Park, T. S. Suh, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Search of the Optimum Beam Position and Size in Radiation Treatment," World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, Jul. 2000.
97. J. H. Park, T. S. Suh, B. Y. Choe, **H. K. Lee**, and K. S. Shinn, "Research of Beam Position Avoiding Critical Organ in Voxel Space," The Second JAPAN-KOREA Joint Meeting on Medical Physics, Jiva, Japan, 11/5/1999.

*The first author was a graduate student of Dr. Lee

98. D. H. Shin, T. S. Suh, B. Y. Choe, **H. K. Lee**, K. S. Shinn, B. C. Son, and S. H. Kim, "Optimal Localization and Image Fusion for DSA/MRI/CT Using Leksell Frame," The Second JAPAN-KOREA Joint Meeting on Medical Physics, Jiva, Japan, 11/5/1999.
99. K. H. Cho, T. S. Suh, N. H. Kim, S. I. Kwon, K. S. Shinn, **H. K. Lee**, and B. Y. Choe, "A Study of Dosimetric Evaluation with/without Flattening Filter in Stereotactic Radiosurgery," The Second JAPAN-KOREA Joint Meeting on Medical Physics, Jiva, Japan, 11/5/1999.
100. T. Lee, T. S. Suh, S. C. Yoon, **H. K. Lee**, B. Y. Choe, and K. S. Shinn, "Radiotherapy Registration Management System Using Database System," The 4th ASIA-PACIFIC Conference on Medical & Biological Engineering, Seoul, Korea, 9/14/1999.
101. **J. W. Youn***, **H. K. Lee**, S. H. Huh, T. S. Suh, B. Y. Choe, and K. S. Shinn, "Development of software for real time evaluation of tumor dose from transmission dose," The 4th ASIA-PACIFIC Conference on Medical & Biological Engineering, Seoul, Korea, 9/14/1999.
102. **H. K. Lee**, T. S. Suh, B. Y. Choe, K. S. Shinn, H. K. Kim, Y. W. Han, and I. K. Mun, "Digital Radiography Based on Amorphous Silicon Pixel Detectors," The 4th ASIA-PACIFIC Conference on Medical & Biological Engineering, Seoul, Korea, 9/14/1999.
103. T. S. Suh, S. H. Kim, B. Y. Choe, **H. K. Lee**, **H. K. Lee**, K. S. Choi, and K. S. Shinn, "Evaluation of Image Distortion for MR-image guided Surgery System," The 4th ASIA-PACIFIC Conference on Medical & Biological Engineering, Seoul, Korea, 9/14/1999.
104. Y. A. Chung, S. H. Kim, **H. K. Lee**, Y. H. Park, H. S. Sohn, S. Y. Lee, S. K. Chung, and K. S. Shinn, "Pinhole SPECT - a New Nuclear Imaging Method: Diagnostic Uses in Normal and Pathologic Ankles," The First Sino-Korea Nuclear Medicine Conference, Beijing, China, Oct. 1998.
105. Y. A. Chung, S. H. Kim, **H. K. Lee**, Y. H. Park, H. S. Sohn, S. Y. Lee, S. K. Chung, and K. S. Shinn, "Comparison of Normal Fractional Mean Transit Time (MTT) between Living Donor Kidney (LDK), Transplanted Living Donor Kidney (TLDK) and Transplanted Cadaver Donor Kidney (TCDK)," Joint Congress of the European Association of Nuclear Medicine and the World Federation of Nuclear Medicine and Biology, Berlin, Germany, Sept. 1998.
106. S. W. Ha, S. N. Huh, **H. K. Lee**, H. G. Wu, and I. H. Kim, "Development of a New Algorithm for in vivo Dosimetry," ESTRO, Edinburgh, UK, 9/21/1998.
107. T. S. Suh, **H. K. Lee**, B. Y. Choe, S. Yoon, and K. S. Shinn, "Fast Dose Computation on any Oblique Dose Grid in 3-D Radiation Treatment Therapy," American Association of Physicists in Medicine, San Antonio, TX, Jul. 1998.
108. H. K. Kim, G. Cho, Y. H. Chung, **H. K. Lee**, and S. C. Yoon, "Monte Carlo Studies of Metal/Phosphor Screen in Therapeutic X-Ray Imaging," 1998 Symposium on Radiation Measurements and Applications, Ann Arbor, MI, 5/11/1998.
109. T. S. Suh, B. Y. Choe, **H. K. Lee**, K. J. Yoon, J. W. Yeo, S. H. Park, and K. S. Shinn, "Clinical Application of CUMC Pilot Mini-PACS for Radiosurgery and Radiation Therapy," 5th International Conference on Image Management and Communication, Seoul, Korea, 10/11/1997.
110. V. Perez-Mendez, J. S. Drewery, W. S. Hong, T. Jing, S. N. Kaplan, **H. K. Lee**, and A. Miresghhi, "Amorphous Silicon Pixel Radiation Detectors and Associated Thin Film Transistor Electronics Readout," Electrical Society Thin Film Technology Symposium, Miami, FL, Oct. 1994.
111. T. Jing, J. C. Delgado, J. Bertomeu, J. S. Drewery, W. S. Hong, **H. K. Lee**, S. N. Kaplan, A. Miresghhi, and V. Perez-Mendez, "Charge Collection in a-Si:H/a-Si_{1-x}C_x Multilayers Photodetectors," International Conference on Thin Film Physics and Applications, Shanghai, China, Apr. 1994.

*The first author was a graduate student of Dr. Lee