Professor Ling-Jian Meng

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Education

Sept. 1990-July. 1995	B.S.	Modern Physics	University of Science and Technology of China, China
Nov. 1996-Dec. 2001	Ph.D.	Physics	University of Southampton, UK

Postdoctoral Training

Jan. 2002-Mar. 2004		Departments of Radiology (50%) and Nuclear Engineering (50%)	University of Michigan, Ann Arbor

Faculty Academic Appointments

April 2004-Feb. 2006	Assistant Research Professor	Department of Nuclear Engineering and Radiological Science	University of Michigan, Ann Arbor
Mar. 2006-Aug. 2012	Assistant Professor	Department of Nuclear, Plasma and Radiological Engineering, Department of Bioengineering, Beckman Institute for Advanced Science Technology, The Cancer Center at Illinois	University of Illinois at Urbana-Champaign
Sept. 2012-Aug. 2017	Associate Professor	--	--
Aug. 2017 – Present	Professor	--	--
Sept. 2013-Aug. 2016	Visiting Associate Professor	Department of Radiology	Massachusetts General Hospital and Harvard Medical School

Report of Scholarship

2023- Current Member of the Steering Committee for the NIH BRAIN Initiative Non-Invasive Imaging Consortium

Journal Editorship

2014-present Associate Editor, IEEE Transactions on Medical Imaging

2021-present Associate Editor, Medical Physics

2013 Guest Associate Editor, Nuclear Instrumentation and Methods

2020-2023 Charter Member, NIH Imaging Technology Development (ITD) Study Section

Conference Organization

2026 Sub-Chair and Summary Speaker, Instrumentation Track, 2026 SNMMI Annual Meeting.

2025 Sub-Chair and Summary Speaker, Instrumentation Track, 2025 SNMMI Annual Meeting, New Orleans.

2024 Sub-Chair and Summary Speaker, Instrumentation Track, 2024 SNMMI Annual Meeting, Toronto.

2023 Sub-Chair and Summary Speaker, Instrumentation Track, 2023 SNMMI Annual Meeting, Chicago.

2023 Session Organizer, 2023 SORMA Meeting, Ann Arbor, Michigan.

2023 CE Session Organizer, Society of Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting, Chicago.

2022 CE Session Organizer, Society of Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting, Vancouver.

2023 Topical Convener, IEEE NSS/MIC/RTSD Conference, Vancouver

2020 Topical Convener, IEEE NSS/MIC/RTSD Conference, Boston

2019 Topical Convener, IEEE NSS/MIC/RTSD Conference, Manchester

2018 Topical Convener, IEEE NSS/MIC/RTSD Conference, Sydney

2017 Topical Convener, IEEE NSS/MIC/RTSD Conference, Atlanta

2015 Topical Convener, IEEE NSS/MIC/RTSD Conference, San Diego

2014 Topical Convener, IEEE NSS/MIC/RTSD Conference, Seattle

2013-2023 Session Chair, IEEE NSS/MIC/RTSD Conference

2017-2023 Session Chair, Society of Nuclear Medicine and Molecular Imaging Annual Meetings.

2018, 2023 Session Chair, Symposium on Radiation Measurements and Applications, Ann Arbor

Professional Societies

1999-present	IEEE Nuclear and Plasma Science Society	Member
2009-present	Society of Nuclear Medicine and Molecular Imaging	Member
2024-present	World Molecular Imaging Society	Member

Grant Review Activities

June 2005	NIH R21/R33 Novel Imaging Technology Study Section, MD	*Ad Hoc* Reviewer
May 2006	NIH Special Emphasis Panel/Scientific Review Group	*Ad Hoc* Reviewer
Feb. 2006	NIH ZRG1 SBMI-F (10) (B)	*Ad Hoc* Reviewer
May 2009	Reviewer for NIH Grand Challenge Grant	*Ad Hoc* Reviewer
Feb. 2011	NIH In Vivo Imaging and Bioengineering Research Study Section	*Ad Hoc* Reviewer
May 2011	Proliferation Deterrence Merit Review Team workshop	Reviewer
February 2013 to June 2017	Multiple appearances in the NIH BMIT-A Study Session	*Ad Hoc* Reviewer
May 2015 -Oct. 2018	NIH SBIB/AIP	*Ad Hoc* Reviewer
May 2018 & May 2019	NIH Brain Initiative	*Ad Hoc* Reviewer
June 2019	NIH ITD Study Session	*Ad Hoc* Reviewer
June 2020 - 2023	Imaging Technology Development (ITD) Study Section	Charter Member, Vice-Chair

Also served on numerous other review panels for DOE, NIH, NSF, NRC, NSERC (Canada), and EU funding agencies.

Selected Awards and Honors by Dr. Meng and his Advisee

2018	ANS Radiation Science and Technology Award, Ling-Jian Meng.
2017	Elena Maria Zannoni (PhD Advisee at the time of the award), IEEE NPSS Christopher J. Thompson Student Paper Award competition at the 2018 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS-MIC) in Sydney, Australia.
2021	Elena Maria Zannoni (PhD Advisee), Physics, Instrumentation and Data Sciences Council (PIDSC) Young Investigator Award, the Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2021 Annual Meeting.
2021	Ling Cai (PhD Advisee), The best oral paper in the 2021 IEEE NPSS Christopher J Thompson Student Award at the 2021 IEEE NSS/MIC.
2022	Elena Maria Zannoni (PhD Advisee), IEEE NPSS Edward J. Hoffman Early Career Development Grant.
2022	Ling Cai (PhD Advisee), 2nd place in the PIDS Poster Award Competition for the work titled "An Ultrahigh Energy Resolution SPECT System for Hyperspectral and Quantitative Imaging in Targeted Alpha Therapy".
2024	Elena Zannoni (PhD Advisee), Tracy Lynn Faber Memorial Award at the SNMMI Annual Meeting in Toronto.

2025	WMIC Commercial Innovation of the Year Award, as the Co-Founder of MH3D, Inc.
2026	Pioneering UK-US Breakthroughs Award by UK Research and Innovation (UKRI).
2023-2026	invited speaker for the Highlights Symposium at the 2023, 2024, 2025, and 2026 SNMMI Annual Meetings.

Report of Funded Research Projects

Major Research Funding

Current

9/1/2026 - 08/31/2031	Hyperspectral Single Photon Imaging of Targeted Alpha-Emitters (Renewal of R01EB031023) NCI R01CA309741, Total Indirect cost: ~$2.4M Role in the Project: Co-PI Project description: Developing a large animal molecular imaging system for studying alpha-labeled radiopharmaceuticals.
12/01/2024 - 11/30/2028	Spatial and Temporal Tracking of Neural Stem Cells Migration to Brain Metastases of Breast Cancer using High Resolution Imaging NCI CA297777A, Total direct cost: ~$2.5M Role in the Project: Co-I (Meng effort: 0.25 month/year) Project description: Studying neural stem cell therapy for brain cancer using spectral SPECT imaging techniques.
08/18/2023 - 07/31/2028	Multi-Functional Imaging of the Brain at Sub-1mm Spatial Resolution Brain Initiative, UG3/UH3 EB034715, Total direct cost: $2.8M Role in the project: PI. Project description: The objective of this project is to develop an advanced clinical SPECT system for imaging the cognitive function of the brain at sub-1 mm spatial resolution.
07/01/2021 - 06/30/2027	Hyperspectral Single Photon Imaging of Targeted Alpha-Emitters NIBIB, R01EB031023, Total direct cost: $2.5M (Currently in NCE) Role in the project: Co-PI. Technical lead for this major instrumentation development project. Project description: The objective of this project is to develop a hyperspectral single-photon imaging (HSPI) technique for multi-tracer, multi-functional assessment of alpha particle labeled radiopharmaceutical therapy.
09/01/2021 - 05/31/2027	High Energy and Spatial Resolution Multi-Isotope SPECT Imaging of Targeted Alpha-Emitters and their daughters NIBIB, 5U01EB031798, Total direct cost: $3.8M (Currently in NCE) Role in the project: Co-PI. Technical lead for this major instrumentation development project. Projection description: (a) to develop the next general-purpose clinical SPECT imaging system (Alpha-SPECT) based on synthetic compound eye gamma camera design and high-

performance CZT imaging spectrometers, and (2) to evaluate the Alpha-SPECT system for imaging therapeutic alpha emitters in patients.

01/01/2025 - 12/31/2030
In Vivo 3-D Multi-Isotope Autoradiography of Radiopharmaceutical Therapy
NCI, 1R01CA297470, Total direct cost: ~ $2.2M
Role in the project: PI of the UIUC subaward (The UIUC team will be leading the major instrumentation development under this award)
Project description: Developing a hyperspectral microscopy system with sub-100 um resolution for in vivo study of therapeutic alpha emitters in mice.

10/01/2026 - 09/30/2031
Development of Perovskite CsPbBr3 Sensors for SPECT Imaging of Higher-Energy Gamma Ray Emitters (The NIBIB has informed the team that this proposal will be funded)
NIBIB 1U01EB038438, Total direct cost: $4.1M
Role in the project: PI.
Project description: The objective of this project is to the develop a new semiconductor material ($CsPbBr_3$) for future gamma ray imaging applications.

Past

09/16/2019 - 09/15/2025
SPECT Imaging of Peripheral Vascular Diseases
NHLBI, R01HL145786, Total direct cost: ~$3.5M
Role in the project: PI
Project description: The objective of this project is to develop a clinical SPECT system for clinical studies of Peripheral Vascular Diseases.

9/16/2018 - 09/15/2022
Broadband X-ray Fluorescence Emission Tomography
NIBIB, R01EB026300, Total cost: ~$2.2M + $350k (Administrative supplement)
Role in the project: PI
Project description: The objective of this project is to develop a novel X-ray fluorescence emission tomography system for in vivo imaging a wide range of trace metals in mice.

09/16/2016 - 09/15/2022
An MR-Compatible Small Animal SPECT Based on Artificial Compound Eye Cameras
NIH/NIBIB, 1 R01 EB022388-01, Currently in NCE. Total Cost: $2.34M + $400k administrative supplement)
Role in the project: PI
Project Description: The objective of this project is to develop the second-generation MRC-SPECT system based on a novel artificial compound-eye gamma camera design.

10/1/2016 - 9/30/2021
Non-Destructive Assessment of Dry Cask through Time-Tagged Neutron Interrogation
DOE NEUP IRP, Award number: TBA, Total cost: ~$2.4M, ~350,000 to Meng
Role in the Project: Co-I.
Project description: In this project, we will explore a non-destructive evaluation (NDE) technique for assessing the structural integrity of spent-fuel dry casks.

05/01/2014 - 04/30/2019
Development of a Benchtop X-ray Fluorescence Tomography System Using a Novel Geometry
NIBIB, Total Direct Cost: $2M
Role in the project: PI
Project description: The objective of this project is to develop a novel XFCT imaging system based on the use of emission tomography geometry.

04/01/2014 - 03/31/2016
Superhigh Sensitivity SPECT Imaging with Dense Camera Arrays
NIBIB, 1R21EB018001-01, Total Direct Cost Requested: $435k
Role in the project: PI.
Project description: This project is to develop an ultrahigh sensitivity SPECT system based on a novel compound-eye gamma camera design.

09/16/2011 - 09/15/2016
An Ultrahigh Resolution MRI-compatible SPECT system
NIBIB, R01EB011640, Total Direct Cost: $1.55M
Role in the project: PI
Project Description: The objective of this project is to develop a high resolution SPECT system to be integrated with a high-field 9.4 T MRI scanner.

09/15/2010 - 09/14/2012
X-Ray Fluorescence Computer Tomography with Emission Tomography Apertures NIBIB, 1R21EB009450-01A1, Total Direct Cost: $275k
Role in the project: PI
Title: X-Ray Fluorescence Computer Tomography with Emission Tomography Apertures
This project is to explore the use of an emission tomography system for 3-D mapping of elemental distribution in volumetric samples.

09/01/2004 - 08/31/2009
A Very High Spatial Resolution SPECT/CT System
NIBIB, R21/R33 EB004940, Total Direct Cost: ~1.4M
Role in the Project: PI
Project Description: The major goal of this project is to develop a very high-resolution SPECT/CT system for 125-I imaging in small animals

06/01/2008 - 05/31/2011
An Ultrahigh Resolution MRI-compatible SPECT system
NCI, 1R21 CA135736-01A1, Total Direct Cost: ~$275k
Role in the Project: PI
Project Description: The major goal of this project is to develop a very high-resolution SPECT system that can be installed inside a 4.7T MRI scanner for simultaneous SPECT/MRI image acquisition.

09/15/2009 - 09/14/2011
A CZT Detector for MRI-Compatible SPECT Systems
DOE, DE-SC0001826, Total Cost: $600k
Role in the Project: PI
Title: An Ultrahigh Resolution MRI-compatible SPECT system

Project Description: This project is to develop a high resolution CZT detector for future MRI-compatible SPECT systems. In this effort, we will develop two prototype detectors and associated readout electronics.

09/01/2008 - 08/31/2011
An Ultrahigh-Resolution PET Detector
DOE, DE FG02-08ER64681, Total Cost: $597k
Role in the Project: PI of UIUC Subcontract
Title: An Ultrahigh-Resolution MRI-compatible SPECT system
Project Description: This project is to develop an ultrahigh-resolution gamma-ray sensor for positron emission tomography (PET) applications. The UI group is focused on the development of the readout electronics and the CZT detectors for use in the proposed PET system.

09/01/2008 - 08/31/2011
A PET/SPECT/CT System
NSF, Major Research Instrumentation, Total Cost: $1.8M
Role in the Project: Co-PI, PI: Steve Boppart
Project Description: For procurement of a Siemens Inveon PET/SPECT/CT tri-modality imaging system for molecular imaging.

09/01/2010 - 08/31/2012
Procurement of a Pulsed Neutron Source
NRC, Research and Educational Infrastructure Award, Total Cost: $154k
Role in the Project: Co-PI, PI: Brent Heuser
Project Description: For establishing a pulsed fast neutron source facility for material characterization and non-destructive testing.

Optimization of CZT Detectors with Sub-mm Pixel Pitches
03/01/2010 - 02430/2014
NASA, 08-APRA08-0122, Total Cost: $800k
Role in the project: PI of UI Subaward
Project Description: In this project, we will carry out a series of studies to optimize the design and fabrication techniques for a highly pixelated CZT detector that will be used in hard x-ray telescopes.

Publications

Peer-reviewed publications

[1] C P Datema, L.J. Meng, D. Ramsden, “Results obtained using a 61-pixel Hybrid Photodiode scintillation camera”, Nucl. Instr.& Meth., A422, pp656-660, 1999.

[2] C.P. Datema, L.J. Meng, D. Ramsden, “The detection of minimum ionizing particles with scintillating fibers using multi-pixel hybrid photodiodes”, IEEE Trans. Nucl. Sci., vol. 45, pp. 338-342, 1998.

[3] C.P. Datema, L.J. Meng, D. Ramsden, “A Compact Readout System for Multi-pixel Hybrid Photodiode”, IEEE Trans. Nucl. Sci., vol. 46, pp. 1880-1883, 1998.

[4] L.J. Meng, D. Ramsden, “Performance result of a DOI encoding PET detector”, IEEE Trans. Nucl. Sci., vol. 47, 1329-1336, 2000.

[5] L. J. Meng, D. Ramsden, “Inter-comparison of three algorithms for gamma-ray spectrum deconvolution”, IEEE Trans. Nucl. Sci., vol. 47, pp. 1011-1017, 2000.

[6] L. J. Meng and D. Ramsden, V.M. Chirkin, V.N. Potapov, O.P.Ivanov, S.M.Ignatov, “Design and Performance of a Large Volume Spherical CsI Scintillation Detector for Gamma Ray spectroscopy”, Nuclear Instruments and Methods A., vol. 485, pp. 468-476, 2002.

[7] L.J. Meng and D. Ramsden, V.M. Chirkin, V.N. Potapov, O.P.Ivanov, S.M.Ignatov, “‘Scintisphere’ – the shape of things to come in gamma-ray spectroscopy”, IEEE Trans. Nucl. Sci., vol. 49, pp. 1681- 1686, 2002.

[8] D. J. Herbert, L. J. Meng, D. Ramsden, “Improved Energy-resolution in Array of Small Scintillation Crystals”, IEEE Trans. Nucl. Sci., vol. 49, pp. 931- 936, 2002.

[9] L. J. Meng, D. K. Wehe, “A Feasibility Study of Using Combined Mechanical and Electronic Collimation for Nuclear Environment”, IEEE Trans. Nucl. Sci., Vol. 50, pp. 1103-1110, 2003.

[10] L. J. Meng, W. L. Rogers, N. Clinthorne, and J. F. Fessler, “Feasibility Study of Compton Scattering Enhanced Multiple Pinhole Imager for Nuclear Medicine”, IEEE Trans. Nucl. Sci., vol50, vol. 4, pp. 1103-1110, 2003.

[11] L. J. Meng, N. H. Clinthorne, W. L. Rogers, “A Modified Uniform Cramer-Rao Bound for Multiple Pinhole Aperture Design”, Medical Imaging, IEEE Trans. Med. Imaging, vol. 23 , pp. 896 – 902, 2004.

[12] L. J. Meng and Z. He, “Estimate interaction timing in large volume HgI_2 detector using cathode pulse waveforms”, Nuclear Instruments and Methods A vol. 545, pp234-251, 2005.

[13] L. J. Meng and Z. He, “Exploring the Limiting Timing Resolution for Large Volume CZT Detectors with Waveform Analysis”, Nuclear Instruments and Methods A, vol. 550, pp435-445, 2005.

[14] L. J. Meng, N. H. Clinthorne, S. Skinner, R. V. Hay, and M. Gross, "Design and feasibility study of a single photon emission microscope system for small animal I-125 imaging," IEEE Trans. Nucl Sci, vol. 53, pp. 1168-1178, Jun 2006.

[15] L. J. Meng, Z. He, B. Alexander, and J. Sandoval, "Spectroscopic performance of thick HgI2 detectors," IEEE Trans. Nucl Sci, vol. 53, pp. 1706-1712, Jun 2006.

[16] L. J. Meng, "An intensified EMCCD camera for low energy gamma ray imaging applications," IEEE Trans. Nucl Sci, vol. 53, pp. 2376-2384, Aug 2006.

[17] L. J. Meng and G. Fu, "Investigation of the Intrinsic Spatial Resolution of an Intensified EMCCD Scintillation Camera," IEEE Trans. Nucl Sci, vol. 55, pp. 2508-2517, Oct 2008.

[18] L. J. Meng and N. Li, "A Vector Uniform Cramer-Rao Bound for SPECT System Design," IEEE Trans. Nucl Sci, vol. 56, pp. 81-90, Feb 2009.

[19] L. J. Meng, G. Fu, E. J. Roy, B. Suppe and C. T. Chen, "An ultrahigh resolution SPECT system for I-125 mouse brain imaging studies," Nucl Instrum Meth A, vol. 600, pp. 498-505, Mar 1, 2009.

[20] L. J. Meng and N. Li, "Non-Uniform Object-Space Pixelation (NUOP) for Penalized Maximum-Likelihood Image Reconstruction for a Single Photon Emission Microscope System," IEEE Trans. Nucl Sci, vol. 56, pp. 2777-2788, Oct 2009.

[21] L. J. Meng, J. W. Tan, K. Spartiotis and T. Schulman, "Preliminary evaluation of a novel energy-resolved photon-counting gamma ray detector," Nucl Instr Meth A, vol. 604, pp. 548-554, Jun 11, 2009.

[22] L. J. Meng, N. Li, and P. J. La Riviere, "X-Ray Fluorescence Emission Tomography (XFET) With Novel Imaging Geometries-A Monte Carlo Study," IEEE Transactions on Nuclear Science, vol. 58, pp. 3359-3369, Dec 2011.

[23] N. Li and L. J. Meng, "Adaptive Angular Sampling for SPECT Imaging," IEEE Transactions on Nuclear Science, vol. 58, pp. 2205-2218, Oct 2011.

[24] Sergey Komarov, Yongzhi Yin , Heyu Wu, Jie Wen, Henric Krawczynski , Ling-Jian Meng and Yuan-

Chuan Tai, “Investigation of the limitations of highly pixilated CdZnTe detector for PET applications”, Physics in Medicine and Biology, 57 (2012) 7355-7380.

[25] Reis MA, Mejia J, Batista IR, Barboza MR, Nogueira SA, Wagner J, Cabral FR, Davoglio PM, Abílio VC, Fu G, Li N, Meng LJ, Shih MC, Chen CT, Amaro Junior E, Bressan RA, "SPEM: a state-of-the-art instrument for high resolution molecular imaging of small animal organs." Einstein (Sao Paulo) 10(2): 209-215, 2012.

[26] Y. Z. Yin, X. M. Chen, H. Y. Wu, S. Komarov, A. Garson, Q. Li, Q. Z. Guo, H. Krawczynski, L. J. Meng, and Y. C. Tai, "3-D Spatial Resolution of 350 mu m Pitch Pixelated CdZnTe Detectors for Imaging Applications," IEEE Transactions on Nuclear Science, vol. 60, pp. 9-15, Feb 2013.

[27] L. Cai and L. J. Meng, "Hybrid pixel-waveform CdTe/CZT detector for use in an ultrahigh resolution MRI compatible SPECT system," Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment, vol. 702, pp. 101-103, Feb 21, 2013.

[28]J. Mejia, M. A. Reis, A. C. C. Miranda, I. R. Batista, M. R. F. Barboza, M. C. Shih*, et al.*, "Performance assessment of the single photon emission microscope: high spatial resolution SPECT imaging of small animal organs," *Brazilian Journal of Medical and Biological Research,* vol. 46, pp. 936-942, Nov 2013.

[29] L J Meng and Nan Li, “SPECT system optimization against a discrete parameter space”, Physics in Medicine and Biology, Vol. 58(9), pp. 3037-59, 2013.

[30] Geng Fu, Ling-Jian Meng, Peter Eng, Matt Newville, Phillip Vargas, and Patrick La Riviere, Experimental demonstration of novel imaging geometries for x-ray fluorescence computed tomography, Medical Physics, vol. 40, 2013.

[31] L. Cai, X. Lai, Z. Shen, C.-T. Chen, and L.-J. Meng, "MRC-SPECT: A sub-500μm resolution MR-compatible SPECT system for simultaneous dual-modality study of small animals," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment,* vol. 734, Part B, pp. 147-151, 2014.

[32] A. Groll, P. LeViriere and L J Meng, “Element Identification in Organic Samples Utilizing a Benchtop X-Ray Fluorescence Emission Tomography (XFET) System”, IEEE Transactions on Nuclear Sciences, vol. 62, pp. 2310- 2317, 2015.

[33] A. Groll, K. Kim, J. Dutta, H. Bhatia, J. C. Zhang, J. H. Wang, Z. M. Shen, L. Cai, Q. Li, and L. J. Meng, “Hybrid Pixel-Waveform (HPWF) Enabled CdTe Detectors for Small Animal Gamma-Ray Imaging Applications”, IEEE Transactions on Nuclear Sciences, 2017.

[34] X. Lai and L. J. Meng, "Simulation study of the second-generation MR-compatible SPECT system based on the inverted compound-eye gamma camera design," Phys Med Biol, vol. 63, no. 4, p. 045008, 2018.

[35] K. Kim, J. Dutta, A. Groll, G. El Fakhri, L. J. Meng, and Q. Li, "A novel depth-of-interaction rebinning strategy for ultrahigh resolution PET," Phys Med Biol, vol. 63, no. 16, p. 165011, 2018.

[36] J. George, L. Giannoni, and L. J. Meng, "Energy-modulated X-ray fluorescence and luminescence emissions from therapeutic nanoparticles," Phys Med Biol, Vol. 64, p. 035020, 2019.

[37] X. C. Lai, E. M. Zannoni, J. George, and L. J. Meng, "System modeling and evaluation of a prototype inverted-compound eye gamma camera for the second generation MR compatible SPECT," Nucl Instru Meth A, vol. 954, Feb 21, 2020.

[38] Zannoni, E. M., Wilson, M. D., Bolz, K., Goede, M., Lauba, F., Schöne, D., Zhang, J., Veale, M. C., Verhoeven, M., & Meng, L. J, “Development of a multi-detector readout circuitry for ultrahigh energy resolution single-photon imaging applications”, Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, pp. 981, 2021.

[39] Elena Maria Zannoni, Can Yang, Ling-Jian Meng, “Design Study of an Ultrahigh Resolution Brain SPECT System Using a Synthetic Compound-Eye Camera Design with Micro-Slit and Micro-Ring Apertures”, IEEE Transactions on Medical Imaging, vol. 40, pp. 3711-3727, 2021.

[40] Z. Liu, M. Fanga, L. J. Meng, A. Di Fulvioa, “Neutron Tomography of Spent Fuel Casks”, Journal of Signal Processing Systems, vol. 94, pp.399-409, 2022.

[41] Xiaochun Lai; Liang Cai; Jia-Wei Tan; Elena Maria Zannoni; Boris Odintsov; Ling-Jian Meng, “Design, Performance Evaluation, and Modeling of an Ultra-High-Resolution Detector Dedicated for Simultaneous SPECT/MRI”, IEEE Transactions on *Radiation and Plasma Medical Sciences,* vol. 6, pp. 42- 51, *2022.*

[42] H. DeBrosse, T. Chandler, L. J. Meng and P. L. Rivière, "Joint Estimation of Metal Density and Attenuation Maps with Pencil Beam XFET,” IEEE Transactions on Radiation and Plasma Medical Sciences*, vol. 7, pp. 191-202, 2022.*

[43] Y. Jin, M. Streicher, H. Yang, S. Brown, Z. He, and L. -J. Meng, "Experimental Evaluation of a 3-D CZT Imaging Spectrometer for Potential Use in Compton-Enhanced PET Imaging," in IEEE Transactions on Radiation and Plasma Medical Sciences, vol. 7, no. 1, pp. 18-32, Jan. 2023.

[44] Can Yang, Elena Maria Zannoni and Ling-Jian Meng, “Joint estimation of interaction position and energy deposition in semiconductor SPECT imaging sensors using fully connected neural network”, Physics in Medicine and Biology, vol 68, 2023.

[45] Hadley Anna DeBrosse, Ling-Jian Meng, Patrick La Riviere, “Effect of Detector Placement on Joint Estimation in X-ray Fluorescence Emission Tomography”, IEEE TRPMS, vol. 8, pp. 21-30, 2023.

[46] Shubham Mandot, Elena M. Zannoni IEEE, Ling Cai, Xingchen Nie, Patrick J. La Rivière, Member, IEEE, Matthew D. Wilson, and Ling Jian Meng, “A High-Sensitivity Benchtop X-ray Fluorescence Emission Tomography (XFET) System with a Full-Ring of X-ray Imaging-Spectrometers and a Compound-Eye Collimation Aperture”, IEEE, Transactions on Medical Imaging, vol. 43, pp. 1782-1791, 2024.

[47] H. DeBrosse, G. Jadick, L. J. Meng, and P. La Rivière, "Contrast-to-noise ratio comparison between X-ray fluorescence emission tomography and computed tomography," J Med Imaging (Bellingham), vol. 11, no. Suppl 1, p. S12808, Dec 2024.

[48] E M Zannoni, P Sankar, Y Jin, C Liu, A J Sinusas, S D Metzler, L J Meng, "Design and development of the DE-SPECT system: a clinical SPECT system for broadband multi-isotope imaging of peripheral vascular disease", Physics in Medicine & Biology, vol 69, 2024.

[49] Yifei Jin and Ling-Jian Meng, “Exploration of Coincidence Detection of Cascade Photons to Enhance Preclinical Multi-Radionuclide SPECT Imaging”, IEEE Transactions on Medical Imaging, vol. 43, pp. 1766-1781, 2024.

[50] Majid Khorsandi, Shangzhen Zhu, Ling-Jian Meng, "Enhancement of CsPbBr3 detectors spectral performance for gamma-ray detection using simultaneous multi-waveform clustering method", Nuclear Instruments and Methods A, vol. 1075, 2025.

[51] Yifei Jin, Elena Zannoni, and Ling-Jian Meng, “Experimental Evaluation of Maximum-Likelihood-Based Data Preconditioning for DE-SPECT: A Clinical SPECT System Constructed with CZT Imaging Detectors”, IEEE TRPMS, Vol. 9, pp. 553-563, 2025.

[52] Elena Zannoni, Can Yang, Ling Cai, Matt Wilson, Ling-Jian Meng, “The Alpha-SPECT-Mini: A Small-Animal SPECT System based on Hyperspectral Compound-Eye Gamma Cameras”, IEEE TRPMS, Vol. 8,

pp. 1107-1117, 2025.

[53] Yifei Jin, Elena Zannoni, Poopalasingam Sankar, Feng Zhang, Michael Streicher, Hao Yang, Zhong He, Scott D. Metzler, Chi Liu, Albert J. Sinusas, Ling-Jian Meng, "Experimental Evaluation of DE-SPECT: A Hyperspectral SPECT System for Region-Selective 3-D Gamma-Ray Spectroscopy", IEEE TRPMS, Vol. 5, pp. 764-778, 2025.

[54] Yifei Jin, Junwei Du, S. R. Cherry, L. J. Meng, "Exploring Anti-Coincidence Technique for Scattering Contamination Rejection in a Simultaneous PET/SPECT Imaging System", IEEE TRPMS, accepted/In-press, 2026.

[55] Haibo Wang, Jiahao Xie, Yifei Jin, Ling-Jian Meng, Junwei Du, "High-Resolution GAGG-SiPM Detectors for Preclinical Coincidence SPECT", IEEE TRPMS, 2026, Vol. 1, pp. 1-8, 2026.

[56] Chi Liu, L. J. Meng, Jinyi Qi, Richard Laforest, Joyita Dutta and R. Glenn Wells, "2025 SNMMI Basic Sciences Summary Session Highlight Lectures: Physics, Instrumentation, and Data Sciences", Journal of Nuclear Medicine, jnumed.126.272025, July 2026.

[57] Yifei Jin, L. J. Meng, "Proof-of-Concept Study of Task-Based Adaptive SPECT Imaging via System Sampling Strategies on a 12-Head Robotic SPECT Platform", IEEE TMI, in press, 2026.

[58] Can Yang, L. J. Meng, "Initial In Vivo Imaging of Ac-225 and Its Daughters using the Alpha-SPECT-Mini System and Optimized Spectral Processing Procedures", IEEE TRPMS, in press, 2026.

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[115] J. Zhang, E. M. Zannoni, E. Frey, Y. Du, L. - J. Meng, “Hyperspectral single-photon imaging of targeted alpha therapy: development of the alpha-SPECT system based on advanced CZT imaging spectrometers”, IEEE NSS/MIC Conference, Manchester, UK, November 2019.

[116] L. - J. Meng, J. Zhang, E.M. Zannoni, M. Wilson, K. Iniewski, “Development of Large-Area Deformable HEXITEC-CZT Imaging-Spectrometer for Clinical SPECT Imaging Applications”, IEEE NSS/MIC Conference, Manchester, UK, November 2019

[117] E. M. Zannoni, J. Zhang, L.-J. Meng, “The MRC-SPECT-II System: Preliminary performance evaluation of the second-generation MR-compatible SPECT system”, IEEE NSS/MIC Conference, Manchester, UK, November 2019.

[118] Yunlai Chen, Xingchen Nie, Elena Maria Zannoni and Ling-jian Meng, “A Partial ring X-ray Fluorescence Computed Tomography Imaging Platform for In Vivo Imaging of Non-Radioactive Metal-based Therapeutic Agents in Small Animals”, J Nucl Med, May 1, 2019, vol. 60, no. Supplement 1, 318, Presented at SNMMI Annual Meeting in Anaheim, CA, USA, June 2019.

[119] Xingchen Nie, Yunlai Chen and Ling-Jian Meng, “Towards Zero Compton Background in X-ray Fluorescence Computed Tomography (XFCT)”, J Nucl Med, May 1, 2019, vol. 60, no. Supplement 1, 1352, Presented at SNMMI Annual Meeting in Anaheim, CA, USA, June 2019.

[120] Elena Maria Zannoni and Ling-Jian Meng, “Intraoperative C-arm SPECT for hybrid operating room: A design study”, J Nucl Med, May 1, 2019, vol. 60, no. Supplement 1, 316, Presented at SNMMI Annual Meeting in Anaheim, CA, USA, June 2019.

[121] Jiajin Zhang, Elena Maria Zannoni, Yong Du, Eric Frey and Ling-Jian Meng, “Alpha-SPECT: Hyperspectral single photon imaging of targeted a-emission therapy”, J Nucl Med, May 1, 2019, vol. 60, no. Supplement 1, 311, Presented at SNMMI Annual Meeting in Anaheim, CA, USA, June 2019.

[122] Y. Jin, M. Streicher, H. Yang, S. Brown, Z. He, L. - J. Meng, “Experimental Evaluation of an Ultrahigh-Resolution Small-Animal PET Scanner Based on 3-D Position-Sensitive CZT Detectors”, IEEE NSS/MIC Conference, Virtual, Boston (USA), November 2020.

[123] C. Yang, E. M. Zannoni, L. - J. Meng, “Design Study of the I-SPECT System: An Intraoperative SPECT System Using a Deformable Dense Camera Array (DCA) and High-resolution Imaging Spectrometers”, IEEE NSS/MIC Conference, Virtual, Boston (USA), November 2020.

[124] E. M. Zannoni, M. D. Wilson, L. - J. Meng, “The MRC-SPECT-II System: A MR-Compatible Small-Animal SPECT System Based on Imaging Spectrometer and Inverted Compound-Eye Gamma Camera Design”, IEEE NSS/MIC Conference, Virtual, Boston (USA), November 2020.

[125] L. - J. Meng, P. Tanton, Y. Jin, S. Brown, H. Yang, M. Streicher, Z. He, “Near-Field Compton Imaging of Alpha-Emitter Radiopharmaceutical Therapeutics (a-RPT) Using Large Volume CZT Detectors”, IEEE NSS/MIC Conference, Virtual, Boston (USA), November 2020.

[126] X. Nie, Y. Chen, E. M. Zannoni, L. - J. Meng, “A High-Sensitivity Full-Ring X-ray Fluorescence Emission Tomography System for In Vivo Imaging of Non-Radioactive Metal-based Therapeutic Agents in Small Animals”, IEEE NSS/MIC Conference, Virtual, Boston (USA), November 2020.

[127] E.M. Zannoni, C. Yang, L.-J. Meng, “Design study of a high-resolution and ultrahigh-sensitivity brain SPECT system for imaging medically intractable epilepsy”, J Nucl Med, May 1, 2021, vol. 62, no. Supplement 1, 39, presented at SNMMI 2021 Virtual Annual Meeting, June 2021.

[128] E.M. Zannoni, P. Sankar, S. Metzler, C. Liu, A. Sinusas, L.-J. Meng , “Design and development of the DE-SPECT system: A clinical SPECT system dedicated for dynamic imaging of peripheral vascular diseases”, J Nucl Med, May 1, 2021, vol. 62, no. Supplement 1, 1143, presented at SNMMI 2021 Virtual Annual Meeting, June 2021.

[129] L. Cai, E. M. Zannoni, X. Nie, L.-J. Meng, “Hyperspectral Single Photon Imaging of Targeted Alpha Therapy”, J Nucl Med, May 1, 2021, vol. 62, no. supplement 1, 1141, presented at SNMMI 2021 Virtual Annual Meeting, June 2021.

[130] Y. Jin, P. Tanton, M. Streicher, H. Yang, S. Brown, Z. He, and L.-J. Meng, “Experimental evaluation of a prototype combined PET-Compton imaging system based on 3-D position-sensitive CZT detectors for dedicated breast cancer imaging”, J Nucl Med, May 1, 2021, vol. 62, no. Supplement 1, 1129, presented at SNMMI 2021 Virtual Annual Meeting, June 2021.

[131] E. M. Zannoni, S. Poopalasingam, Y. Jin, F. Zhang, M. Streicher, H. Yang, Z. He, S. D. Metzler, C. Liu, A. J. Sinusas, L.-J. Meng, "Development of the DE-SPECT System: A hyperspectral SPECT System for Dynamic Broadband Imaging of Peripheral Vascular Diseases ", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[132] L. Cai, E. M. Zannoni, L.-J. Meng, "In Vivo Hyperspectral Single Photon Microscopy of Targeted Alpha Therapy", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[133] S. Mandot, L. Cai, E. M. Zannoni, L.-J. Meng, "X-ray Fluorescence Emission Tomography of Implantable Micro-Scintillators for X-ray-induced Optogenetic Applications", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[134] S. D. Metzler, E. M. Zannoni, P. Sankar, C. Liu, A. J. Sinusas, L.-J. Meng, "The Impact of Additional Sampling on Hot-Spot Contrast for DE-SPECT", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[135] Y. Jin, E. M. Zannoni, L.-J. Meng, "Compton Scattering Enhanced Pinhole Imaging with the DE-SPECT - A Clinical SPECT System Constructed with CZT Imaging Spectrometers", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[136] C. Yang, E. M. Zannoni, L.-J. Meng, "X-Y-Z-E 4-D Reconstruction of Charge Sharing Events in Small-Pixel CdTe and CZT Detectors Using Vector-Net and Joint-Net for Multi-Isotope Hyperspectral SPECT Imaging", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[137] Y. Jin, L.-J. Meng, "Imaging of Low-Activity Therapeutic Radionuclides through Time-Energy Double Coincidence (TEDC) Detection" , presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[138] C. Yang, L. Pan, V. Klepov, M. G. Kanatzidis, L.-J. Meng, "Machine Learning based Waveform Analysis for CsPbBr3 Perovskite Detector to Enhance Spectral Resolution", presented at the 2022 IEEE NSS/MIC/RTSD Conference, November 2022.

[139] E. M. Zannoni, S. Poopalasingam, Y. Jin, S. D. Metzler, C. Liu, A. J. Sinusas, L. J. Meng, "The DE-SPECT System: The First Clinical SPECT System for Broadband Multi-Isotope Imaging of the Lower Extremities", presented at the 2022 SNMMI Annual Meeting, June 2022.

[140] L. Cai, E.M. Zannoni, L.J. Meng, "An Ultrahigh Energy Resolution SPECT System for Hyperspectral and Quantitative Imaging in Targeted Alpha Therapy", presented at the 2022 SNMMI Annual Meeting, June 2022.

[141] C. Yang, E. M. Zannoni, L. J. Meng, "Machine-Learning Based Energy Correction Technique for use in Dedicated Pre-Clinical and Clinical SPECT Imaging of Targeted Alpha Therapy", presented at the 2022 SNMMI Annual Meeting, June 2022.

[142] S. Mandot, E.M. Zannoni, L.Cai, X. Nie, L.J. Meng, , "Performance evaluation of a Full-ring X-ray Fluorescence Emission Tomography System equipped with multi-slit and multi-pinhole collimators", presented at the 2022 SNMMI Annual Meeting, June 2022.

[143] S. Poopalasingam, E. M. Zannoni, C. Liu, A. J. Sinusas, L. J. Meng, S. D. Metzler, "Evaluation of DE-SPECT Pinholes Exchange Adaptive Mechanism", presented at the 2022 SNMMI Annual Meeting, June 2022.

[144] E. M. Zannoni, Y. Jin, P. Sankar, D. Gura, R. Wu, F. Zhang, M. Streicher, H. Yang, Z. He, S. D. Metzler, C. Liu, A. J. Sinusas, L.J. Meng, "The DE-SPECT System: A Hyperspectral SPECT System for in Vivo 3-D Gamma-Ray Spectrometry of Molecular Theranostics". 2023 IEEE NSS/MIC/RTSD Conference, Nov 2023.

[145] C. Yang, E. M. Zannoni, L. Cai, M. D. Wilson, R. Bastiaannet, Y. Du, G. Sgouros, E. Frey, L.J. Meng, "Alpha-SPECT-mini: A Preclinical SPECT system Using Ultrahigh Energy Resolution CdTe detectors for Low-Dose Alpha Emitter Radiopharmaceutical Therapy Imaging". 2023 IEEE NSS/MIC/RTSD Conference, Nov 2023.

[146] S. Mandot, E. M. Zannoni, M. D. Wilson, L.J. Meng, "Exploration of X-ray Fluorescence Emission Tomography for Imaging Micro-Scintillators used in Remote Optogenetics Application". 2023 IEEE NSS/MIC/RTSD Conference, Nov 2023.

[147] Y. Jin, E. M. Zannoni, L.J. Meng, "Experimental Evaluation of Maximum-Likelihood-Based Data Preconditioning for DE-SPECT: A Clinical SPECT System Constructed with CZT Imaging Detectors". 2023 IEEE NSS/MIC/RTSD Conference, Nov 2023.

[148] S. Mandot, E. M. Zannoni, P. La Rivière, L.-J. Meng, "X-ray Fluorescence Emission Tomography of Implantable Scintillating Microparticles for X-Ray induced Optogenetic Application", presented at the 2023 SNMMI Annual Meeting, June 2023.

[149] C.Yang, E. M. Zannoni, Y.Du, , L.Cai, G. Sgouros, E. Frey, L.-J. Meng, "An Ultrahigh Energy Resolution SPECT System for Quantitative Preclinical Imaging of Targeted Alpha Therapy", presented at the 2023 SNMMI Annual Meeting, June 2023.

[150] E. M. Zannoni, Y. Jin, S. Poopalasingam, S. D. Metzler, C. Liu, A. J. Sinusas, L.-J. Meng, "In Vivo 3-D Gamma-Ray Spectrometry for Multifunctional Molecular Imaging and Theragnostics in Lower Extremities", presented at the 2023 SNMMI Annual Meeting, June 2023.

[151] L.-J. Meng, "Towards In Vivo 3-D Dosimetry for Alpha-Radiopharmaceutical Therapy (alpha-RPT)", Invited Talk at 2023 SORMA XIX, May 2023.

[152] E. M. Zannoni, Y. Jin, S. Poopalasingam, F. Zhang, M. Streicher, H. Yang, Z. He, S. D. Metzler, C. Liu, A. J. Sinusas, L.-J. Meng, "Development of the DE-SPECT System: A hyperspectral SPECT System for in Vivo 3-D Gamma-Ray Spectrometry of Molecular Theranostics", 2023 SORMA XIX, May 2023.

[153] C. Yang, E. M. Zannoni, L.Cai, M.D.Wilson, R.Bastiaannet, Y.Du, G. Sgouros, E. Frey, L.-J. Meng, "A Small-Animal SPECT System for Alpha-Emitter Radiopharmaceutical Therapy Using Hyperspectral Photon Sensors", 2023 SORMA XIX, May 2023.

[154] Y.Jin, L.-J. Meng, "Spectral Temporal Double Coincidence Enhanced (STDC) SPECT", 2023 SORMA XIX, May 2023.

[155] C. Yang, E. M. Zannoni, L. Cai, M. D. Wilson, R. Bastiaannet, Y. Du, G. Sgouros, E. Frey, L.J. Meng, “Alpha-SPECT-mini: A Preclinical SPECT system Using Ultrahigh Energy Resolution CdTe detectors for Low-Dose Alpha Emitter Radiopharmaceutical Therapy Imaging”, IEEE NSS/MIC/RTSD, Vancouver, 2023.

[157] Y. Jin, E. M. Zannoni, L.J. Meng, “Experimental Evaluation of Maximum-Likelihood-Based Data Preconditioning for DE-SPECT: A Clinical SPECT System Constructed with CZT Imaging Detectors”, IEEE NSS/MIC/RTSD, 2023, Vancouver.

[158] E. M. Zannoni, Y. Jin, P. Sankar, D. Gura, R. Wu, F. Zhang, M. Streicher, H. Yang, Z. He, S. D. Metzler, C. Liu, A. J. Sinusas, L.J. Meng, “The DE-SPECT System: A Hyperspectral SPECT System for in Vivo 3-D Gamma-Ray Spectrometry of Molecular Theranostics, IEEE NSS/MIC/RTSD, Vancouver, 2023.

[159] Y. Jin, L.J. Meng, “Experimental Evaluation of Spectral-Temporal-Double-Coincidence-Enhanced Preclinical SPECT Imaging of Low-Dose Therapeutic Radionuclides”, Y. Jin, L.J. Meng, IEEE NSS/MIC/RTSD, Vancouver, 2023.

[160] S. Mandot, E. M. Zannoni, M. D. Wilson, L.J. Meng, “Exploration of X-ray Fluorescence Emission Tomography for Imaging Micro-Scintillators used in Remote Optogenetics Application”, IEEE NSS/MIC/RTSD, Vancouver, 2023.

[161] Shubham Mandot, Elena Maria Zannoni, Can Yang, Shangzhen Zhu and Ling Jian Meng, “Design study of the Neuro-Scope: A Sub-mm resolution Clinical Brain-SPECT Scanner based on Dual-FOV Gantry Design and Micro-Ring Apertures”, Journal of Nuclear Medicine, June 2024, 65 (supplement 2) 242468

[162] Can Yang, Elena Maria Zannoni, Ling Cai, Matthew Wilson, Remco Bastiaannet, Yong Du, George Sgouros, Eric Frey and Ling Jian Meng, “Quantitative Multi-Isotope Imaging of Alpha-Emitter Radiopharmaceutical Therapy with the Alpha-SPECT-Mini System”, Journal of Nuclear Medicine June 2024, 65 (supplement 2) 242352.

[163] Yifei Jin, Elena Maria Zannoni, Poopalasingam Sankar, Feng Zhang, Michael Streicher, Hao Yang, Drew Gura, Ryan Wu, Zhong He, Scott Metzler, Chi Liu, Albert Sinusas and Ling Jian Meng, “Experimental Evaluation of DE-SPECT: A Hyperspectral SPECT System for in Vivo 3-D Gamma-Ray Spectrometry of Multifunctional Molecular Imaging and Theragnostic”, Journal of Nuclear Medicine June 2024, 65 (supplement 2) 242341.

[164] C. Yang et al., "Experimental Evaluation of the Alpha-SPECT-Mini System with Machine-Learning-based Energy Reconstruction and Dynamic Windowing for In Vivo Imaging of Ac-225-labeled Radiopharmaceuticals," 2024 IEEE NSS/MIC/RTSD Conference, Oct 2024.

[165] L. J. Meng et al., "Design and Initial Experimental Evaluation of the Alpha-SPECT: A Full-Body Clinical SPECT System with High-Performance CZT Imaging Spectrometers and Micro-Rotating Dual-Aperture Collimation for Imaging Therapeutic Radionuclides," 2024 IEEE NSS/MIC/RTSD Conference**,** Oct 2024.

[166] M. Khorsandi, C. Yang, L. J. Meng and J. Palmer, "Simultaneous multi-waveform clustering analysis for improving the spectral performance of CsPbBr3 detectors," 2024 IEEE NSS/MIC/RTSD Conference, Oct 2024.

[167] Y. Jin et al., "Experimental Evaluation of DE-SPECT: A Hyperspectral SPECT System for Region-Selective 3-D Gamma-Ray Spectroscopy of Molecular Theragnostics," 2024 IEEE NSS/MIC/RTSD Conference, Oct 2024.

[168] S. Mandot, C. Yang, M. Wilson, and L.-J. Meng, "Large-Area Ultrahigh Resolution CZT Imaging Spectrometer with FPGA-Implemented Machine-Learning-based Spectral Enhancement for Clinical Spectral-SPECT Imaging Applications," 2024 IEEE NSS/MIC/RTSD Conference, Oct 2024.

[169] S. Mandot, E. M. Zannoni, C. Yang, S. Zhu, and L. -J. Meng, "NeuroScope: An Ultrahigh Resolution Clinical Brain Scanner with hardwareImplemented Super Resolution Sampling Strategies," 2024 IEEE NSS/MIC/RTSD Conference, Oct 2024.

[167] Yifei Jin, Junwei Du, Simon Cherry and Ling Jian Meng, “Exploring Anti-Coincidence Technique and Active Shielding for Scattering Contamination Rejection in a Simultaneous PET/SPECT Imaging System”, Journal of Nuclear Medicine June 2025, 66 (supplement 1) 25143.

[168] Shubham Mandot, Shangzhen Zhu, Scott Metzler and Ling Jian Meng, “Initial Assessment of Super-Resolution Sampling Strategies for Ultrahigh-Resolution Clinical Brain Scanner”, Journal of Nuclear Medicine June 2025, 66 (supplement 1) 252249.

[169] Can Yang, Elena Maria Zannoni, Ching Fong, Ansong Qing, Xiaopei Huang, Zhonghua Ouyang, Brendan Deleon, Yong Du, Sangeeta Ray, George Sgouros and Ling Jian Meng, “Small Animal Total-Body Dynamic Imaging of Alpha-Emitter Radiopharmaceutical Therapy with the Upgraded Alpha-SPECT-Mini System”, Journal of Nuclear Medicine June 2025, 66 (supplement 1) 25155.

[170] Yifei Jin, Elena Maria Zannoni, Stephanie Thorn, Sun-Joo Jang, Matthew Nazari, Rachel Burns, Poopalasingam Sankar, Feng Zhang, Michael Streicher, Zhong He, Scott Metzler, Chi Liu, Albert Sinusas and Ling Jian Meng, “First Multi-isotope Pre-Clinical Imaging Study with DE-SPECT: A Hyperspectral SPECT System for in Vivo 3-D Gamma-Ray Spectrometry of Multifunctional Molecular Imaging of Peripheral Vascular Disease”, Journal of Nuclear Medicine June 2025, 66 (supplement 1) 25142.

[171] S. Mandot, E.M. Zannoni, C. Yang, G. Sgouros, Y. Du, E.C. Frey, L.-J. Meng, “System Design and Performance Evaluation of Alpha-SPECT: A Full-Body CZT-Based SPECT Scanner for Quantitative Imaging of Alpha Emitters and Their Daughters”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2026.

[172] C. Yang, E. Zannoni, C. Fong, A. Qin, X. Huang, Z. Ouyang, B. Deleon, Y. Du, S. Ray, G. Sgouros, L.-J. Meng, “Dynamic Total-Body Imaging of Therapeutic Alpha-Emitters and Their Daughters in Mice with the Alpha-SPECT-mini-II: A Spectral-SPECT System with Total-Body/Microscopic Dual-FOV Apertures”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

[173] Y. Jin, E. M. Zannoni, S. L. Thorn, S.-J. Jang, M. Nazari, R. Burns, P. Sankar, F. Zhang, M. Streicher, Z. He, S. D. Metzler, C. Liu, A. J. Sinusas, L.-J. Meng “Multi-Isotope Pre-Clinical Imaging Studies with DE-SPECT: A Hyperspectral SPECT System for Region-Selective 3-D Gamma-Ray Spectrometry of Cardiovascular Disease”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

[174] S. Mandot, S. Zhu, S. D. Metzler, L.-J. Meng, “Preliminary Experimental Assessment of Hardware-Implemented Super-Resolution Sampling Strategies for a Dual-FOV Clinical Brain-SPECT Scanner”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

[175] Y. Jin, J. Du, S. R. Cherry, L.-J. Meng, “Exploring Anti-Coincidence Technique and Active Shielding for Scattering Contamination Rejection in a Simultaneous Pre-clinical PET/SPECT Imaging System”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

[176] Y. Jin, W. Zhang, L.-J. Meng, “Experimental Evaluation of a Near-Field Small-Animal Compton Camera Based on Ultrahigh-Resolution CdTe Detectors and Latent Compton Sequence (LCS) MLEM Reconstruction”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

[176] Y. Jin, W. Zhang, L.-J. Meng, “Experimental Evaluation of a Near-Field Small-Animal Compton Camera Based on Ultrahigh-Resolution CdTe Detectors and Latent Compton Sequence (LCS) MLEM Reconstruction”, IEEE NSS/MIC/RTSD Conference, Yokohama, 2025.

Selected Seminar Talks and Invited Presentations

[1] “System and Sensor Developments for Emission Tomography”, Colloquium Series, the Department of Nuclear Engineering and Radiological Sciences (NERS), University of Michigan. Nov. 2008.

[2] “System and Sensor Developments for Emission Tomography”, Invited Seminar, Department of Radiology, 2008.

[3] “Development of a Photon-Counting Detector CZT and CdTe Sensors for Emission Tomography Applications", Brookhaven National Lab., Nov. 2009.

[4] “Recent Development in Gamma Ray Sensor Technologies”, Invited Discovery Seminar Series, Institute of High Energy Physics, July 2009.

[5] “Small-Pixel CdTe and CZT Detectors for Medical Imaging Applications”, SPIE Optics and Photonics Conference, San Diego, 2009.

[6] “Development of a Photon-Counting Detector CZT and CdTe Sensors for Emission Tomography Applications”, invited, DOE Radiochemistry and Instrumentation PI Workshop, Jan 2010.

[7] “Nuclear Imaging Techniques for Oncology”, UIC Hematology-Oncology Seminar Series on UIUC Imaging and Experimental Therapeutics Research (Sponsored by the University of Illinois Chicago Cancer Center), May 2010.

[8] “Novel Photon Sensors for SPECT and CT Applications”, Research Seminar, Department of Radiology, Johns Hopkins University, May 2010.

[9] “Development of a Simultaneous MRI/SPECT System for In Vivo Molecular Imaging”, invited, DOE Radiochemistry and Instrumentation PI Workshop, Jan 2011.

[10] “Hybrid Pixel-Waveform Readout System for Small-Pixel CZT Detectors”, IEEE NSS/MIC/RTSD Conference, Valencia, 2011.

[11] “Recent Developments in Small-Pixel CZT and CdTe Detectors”, SPIE Optics and Photonics Conference, San Diego. 2011.

[12] “Technological Developments Towards Microscopic Emission Tomography,” Center for Gamma-Ray Imaging, University of Arizona, Jan. 2012.

[13] “A New Life to Some “Dying” Imaging Modalities”, Invited Seminar Presentation, Department of Radiology, Yale University, April 2013.

[14] “Technological Development Towards Future Nuclear Imaging Instrumentations”, Department of Radiology, Massachusetts General Hospital, April 2013.

[15] “Technological Development Towards Future Emission Tomography”, Invited Seminar Presentation, Department of Physics, University of Science and Technology of China, Hefei, P. R. China, July 2013.

[16] “MRC-SPECT System: A Sub-500um SPECT System for Simultaneous SPECT and MR Imaging of Small Animals”, Invited presentation at the IEEE NSS/MIC/RTSD Conference, Seoul. 2013.

[17] “Development of A Novel Energy-Resolved Photon-Counting Gamma Ray Detector”, Invited talk, Invited presentation at the IEEE NSS/MIC/RTSD Conference, Seoul, 2013.

[18] “Development of Small-Pixel CdTe and CZT Detectors”, Research Presentation at Brookhaven National Lab, Feb. 2014.

[19] “Development of Stimulated Emission Tomography Techniques”, Invited Seminar Presentation, Department of Bioengineering, University of Pisa, Italy, 2015.

[20] “Recent Developments in Emission Tomography Instrumentations”, Invited Seminar, School of Health Sciences, Oct. 2015.

[21] “X-ray Fluorescence Emission Tomography”, Research Seminar, Jefferson National Lab., May 2015.

[22] “Future Trends in Emission Tomography Instrumentations”, Invited Seminar, Department of Radiology, Washington University in St Louis, May 2015.

[23] “Future Trends in Emission Tomography Instrumentations – A Few Thoughts from Imaging Physics Perspectives”, Invited Presentation in the UIUC-MGH Exchange Seminar Series, Oct. 2015.

[24] “Broadband Emission Tomography”, Department of Radiology, Stanford, Jan. 2016.

[25] “Broadband Emission Tomography”, June 2016, Department of Radiology, University of Pennsylvania.

[26] “Broadband Emission Tomography with Room Temperature Semiconductor Detectors”, Department of Radiology, Johns Hopkins University, July 2017.

[27] “A Long Quest for “Perfect” Nuclear Emission Tomography Techniques”, Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Jan. 2018.

[28] “Broadband Emission Tomography”, April 2018, Department of Radiology, Stanford University.

[29] “Development of the MRC-SPECT-C: A High-Performance MR-Compatible Cardiac SPECT System”, Molecular Imaging Instrumentation Conference, Hong Kong, April 2018.

[30] “Development of Large-Area Transformable HEXITEC-CZT Imaging-Spectrometer for Clinical SPECT Imaging Applications”, Department of Biomedical Engineering, UC Davis, September 2019.

[31] “Hyperspectral Single Photon Imaging”, Siemens Healthcare, USA, March 2019.

[32] “Development of Large Area CZT Imaging-Spectrometers for Future SPECT Instrumentations”, Radiation Monitoring Devices (RMD), August 2019.

[33] “Towards Broadband Emission Tomography”, Department of Radiology, Johns Hopkins University School of Medicine, January 2020.

[34] “Broadband Emission Tomography”, Department of Radiology, WashU, January 2020.

[35] “Advanced Gamma Ray Sensors and Spectral Single Photon Imaging”, Department of Radiology, Stonybrook University, Feb 2020.

[36] “Intraoperative C-arm SPECT for Hybrid Operating Room: A Design Study,” the NIH Image-Guided Therapy (IGT) Workshop, March 2020.

[37] “Novel SPECT technology” (invited), the ASNC pre-meeting symposium: the Technological Advances and Innovation in Nuclear Cardiology: A Look into the Future, Sept. 2020.

[38] “Next-Generation Gamma-Ray Sensors and Hyperspectral Single Photon Imaging” (invited), the Radiological Physics Division (RPD) Monthly Seminar, Sept 2020.

[39] “Recent Advances in SPECT Imaging Technology and Potential Application in Epilepsy”, the Epilepsy Grand Rounds, Cleveland Clinic, to be delivered in October 2020.

[40] “Limits of SPECT imaging; possibilities for Compton cameras” (invited), The NIBIB Workshop on Engineering New Instrumentation for Imaging Unsealed Source Radiotherapy Agents, Aug. 2021.

[41] “Hyperspectral Single Photon Imaging”, Seminar talk in the Department of Biomedical Engineering, UC Merced, 2022.

[42] “Nuclear Medicine: A Nuclear Engineering Perspective”, invited seminar talk, Department of Nuclear, Plasma and Radiological Sciences, University of Michigan, Jan 27, 2023.

[43] “CZT Detectors for Imaging Therapeutic Radionuclides,” the jointly sponsored US Department of Energy Office of Nuclear Physics and the National Institutes of Health (NIBIB and NCI) workshop on Advancing Medical Care through Discovery in the Physical Sciences: Radiation Detection, Thomas Jefferson Lab, Virginia, March 2023.

[44] “High-Performance CZT Imaging Spectrometers for X-ray and Gamma-Ray Imaging Applications”, HEXITEC ASIC Users Workshop, Institute of Physics, London, Feb 21, 2023.

[45] “Nuclear Medicine: A Nuclear Engineering Perspective”, invited seminar talk, Department of Nuclear Engineering, University of Missouri, Rolla, Feb. 3, 2023.

[46] “Towards In Vivo 3-D Dosimetry for Alpha-Radiopharmaceutical Therapy”, SORMA 2023, Ann Arbor, Michigan, May 2023.

[47] “Imaging of Therapeutic Radionuclides with CZT Detectors” (invited), Society of Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting, 2023.

[48] “Bench-top X-ray Fluorescence Emission Tomography of Micro-scintillators for X-ray Induced Optogenetics”, Argonne National Lab, Advanced Photon Source (APS) Seminar, June 2023.

[49] “Multi-Nuclide Imaging of Alpha-Emitter Radiopharmaceutical Therapy”, UT Southwestern Medical Center, Sept. 9, 2023.

[50] “Towards Hyper-Spectral SPECT Microscopy of the Brain – An Imaging Hardware Perspective”, Sept 23, NIBIB Workshop for Biomedical Imaging and Biomedical Approaches to Alzheimer’s Disease, September 29, 2023.

[50] “Emission Tomography: From Grayscale to Color Images One More Time”, Seminar at the Department of Biomedical Engineering, UC Davis, Oct. 26, 2023.

[51] “Expanding the Dimensionality of Nuclear Medicine: A Technological Roadmap”, Seminar at the Department of Nuclear Engineering and Radiological Sciences, University of Michigan. Jan. 2024.

[52] “Hyperspectral Single Photon Imaging of Therapeutic Alpha-Emitters”, Invited talk at the HEXITEC user meeting, IOP, London, Feb 2024.

[53] “Semiconductor Imaging Sensors for Nuclear Medicine: Clinical Needs, Technical Challenges, and Future Opportunities”, invited talk in the Workshop on Radiation Detection Materials (WORDMAP), March 12-14, 2024, Brookhaven National Lab.

[54] “Emission Tomography: From Grayscale to Colorful Images One More Time”, Research seminar, Department of Nuclear Engineering, UC Berkley, April 2024.

[55] “Multi-Functional Molecular Imaging through Hyperspectral Single Photon Spectroscopy”, Invited talk at the ISMRM Workshop, MGH, Boston, Oct. 2024

[56] “Hyperspectral Imaging of Therapeutic Alpha-Emitters”, Invited talk at the Department of Radiology, MGH, Boston, Oct. 2024.

[57] “Development of Spectral SPECT Imaging System for Personalized Theragnostic Applications”, Invited talk at the HEXIECT ASIC User Group Workshop, London, Feb. 2025.

[58] “The Rise of Nuclear Theranostics and Precision Gamma-Ray Imaging”, Invited talk at the Department of NPRE, University of Illinois at Urbana-Champaign. 2025.

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