

## Special Issue on Generative AI in Radiation Imaging

### Call for papers

Generative AI is transforming radiation imaging by introducing cutting-edge methodologies for image generation, correction, enhancement, processing, and interpretation. Techniques such as diffusion models, foundation models, and vision-language models are driving breakthroughs across CT, PET, and SPECT imaging. These tools, built on expansive datasets and integrated with imaging physics, promise to redefine the accuracy, efficiency, and scope of existing diagnostic and therapeutic applications. They also hold the potential to optimize current imaging protocols, disease management, and treatment plans to achieve precision medicine. For Generative AI, apart from technical advancements, the development of benchmarks and domain-adaptation strategies is also essential to further enhance its potential for clinical translation. This special issue seeks high-quality submissions that explore the application of Generative AI in radiation imaging. We welcome contributions that address theoretical advancements, practical implementations, and clinical translational pathways for AI-driven imaging techniques.

We invite papers to this special issue on topics that include but are not limited to:

- Generative AI for image processing, analysis, enhancement, and artifact reduction
- Physics-informed Generative AI methods for image generation, reconstruction, and correction
- Generative AI for optimization of imaging protocols, dosimetry, and radiation treatment planning
- Vision-language models for medical imaging processing and interpretation
- Foundation models and domain-adaptation strategies for radiation imaging
- Novel datasets, benchmarks, and data augmentation strategies in training generative AI models
- Clinical evaluation and hallucination identification & evaluation of generative AI models

### Submission Guidelines

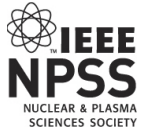
Authors must submit papers digitally to <https://mc.manuscriptcentral.com/trpms>, using standard IEEE Transactions format, indicating in their cover letter that the submission is aimed for this special issue. Codes and data sharing are encouraged. Authors are encouraged to contact the guest editors to determine the suitability of their submission for this special issue.

### Guest Editors:

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## IEEE Transactions on Radiation & Plasma Medical Sciences

### Schedule:

Deadline for Submission of manuscripts:	June 30, 2025
Acceptance/rejection notification:	September 2025
Revised manuscripts due:	November 2025
Publication:	February 2026