# **Special Issue**

# Engineering the Future of Radiotherapy: Innovations and Challenges

### Message from the Guest Editors

Cutting-edge advancements are transforming radiation therapy (RT), minimizing toxicity and maximizing efficacy. New techniques like stereotactic radiosurgery, proton therapy, and image-guided RT (IGRT) are improving outcomes. The combination of nanoparticles (NPs) and RT opens up a new frontier in cancer treatment. NPs can be used as contrast enhancement in IGRT and may lead to an increased local radiation dose by using particles with higher atomic numbers (Z). The introduction of AI in the routine clinical practice of radiation oncology automates processes, personalizes treatment, and improves guality control. Deep learning models are used for automatic delineation and the segmentation of tumors and organs at risk. Al has also been utilized in treatment planning and optimization. All innovations are driving the RT in the "era of excellence" in anticancer treatment, undertaking the challenge of developing more sophisticated and tailored RT.

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### Deadline for manuscript submissions

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