

AbstractID: 14448 Title: Robotic Brachytherapy - Overview of robotic brachytherapy approaches and synergistic applications

Image-guided robotics continues to make advances in assisting brachytherapy procedures and synergistic clinical applications. Each anatomical site, access route image guidance modality has its own unique challenges for both the physician and technology developer. Proper understanding of these is key importance for further advances in the field.

The lecture will provide a brief technological history and review the state art. We will examine relevant robotic systems, including available robotic systems for brachytherapy, from the perspectives of clinical features, image guidance modalities, and mechatronic techniques. We will identify their innovative and positive features, as well as limitations, challenges, and liabilities.

Based on progresses, successes and sometimes even failures, we will draw conclusions and offer recommendations for future consideration.

Learning Objectives:

1. Short historical background and review of the state of the art, including currently available robotic systems for brachytherapy
2. Analysis of pros and cons of the various approaches
3. Challenges, opportunities and trends in current research