

## **The Role of Modeling and Simulation in Industrial Processing**

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Treatment planning systems for external beam radiation therapy have, for decades, used various methods of modeling the dose delivered to patient. These methods have evolved from simple projections and curve fits to Monte Carlo methods that were developed for high energy physics.

Applying these Monte Carlo simulations will allow better understanding of radiation sterilization. It will improve dose uniformity, optimize packaging, and reduce the need for verification runs. Ultimately, it can be used to account for the effects of radiation in initial product design.

This presentation will show how the experience of the radiation oncology field can be applied to radiation sterilization. It will review the Monte Carlo programs currently available and their status.