

DoseOptics Releases the World's First Radiation Beam Imaging System

C-Dose™ captures Cherenkov emissions for a novel look

HANOVER, NH – July 24, 2018 DoseOptics LLC, launched the world's first Cherenkov imaging system designed to work with radiation therapy linacs, C-Dose™ RESEARCH. By providing real-time video rate visualization of the beam shape at the point of incidence and exit, the radiotherapy team can now record and monitor the position, gantry movements, and the multi-leaf collimator jaw while imaging at the site of delivery. With its simple set-up and use, C-Dose, for the first time, enables direct imaging of radiation delivery on a routine basis.

DoseOptics President, Brian Pogue is encouraged about the potential. "We are extremely excited to be able to offer a Cherenkov imaging system to the field of Radiation Oncology where we believe it can change the paradigm of radiation delivery verification, and provide intuitive visualization of the treatment for everyone in the department," Dr. Pogue professor of Engineering Science at the Thayer School, Dartmouth College, and Professor of Surgery, Geisel School of Medicine, also believes the technology provides a missing piece to today's therapy, "As new delivery techniques improve and become more and more complex, verification remains a challenge. With C-Dose™, medical physicists charged with ensuring delivery accuracy can now literally see what they are doing."

Unique time-gating technology ensures that each pulse of the linac contributes to the image recovered, and time-integrating software allows for a cumulative delivered image which is overlaid in real time on the object being irradiated. The camera and software operate remotely to provide an independent check and measurement tool for beam shape and delivery.

"Up until now, we've been practicing blind," says Dr. Lesley Jarvis, MD, PhD, Associate Professor of Radiation Oncology at Dartmouth Hitchcock Medical Center, Lebanon, NH. "With Cherenkov imaging of phantoms and in clinical trials we have been able to visualize the treatment beams. It's an intuitive and valuable tool."

C-Dose™ RESEARCH comes ready to capture both photon and electron beam delivery and can be installed either as a fixed ceiling mounted device or on a tripod. Imaging for QA development or human research is available with a customized visual display and archiving software that matches the workflow of a radiotherapy department.

DoseOptics LLC is a core team of dedicated engineers developing Cherenkov imaging technology customized for radiotherapy applications. Financed by a series of grants from the National Cancer Institute (NCI) at the NIH, the discovery and development occurred at the Thayer School of Engineering at Dartmouth and was refined through clinical testing and research at the Norris Cotton Cancer Center, at the Dartmouth-Hitchcock Medical Center. The C-Dose system is now available to research customers. Systems have been successfully deployed at leading academic institutions across the United States. For more information, visit www.doseoptics.com.

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