



## WEBINARS

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# Fused Silica in Radiation Environments

Tuesday, December 13, 2022 1:00 PM - 2:00 PM EST

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Presented by

# Heraeus

## Conamic

### .: About This Webinar

An increasingly wide range of applications need to be able to function in harsh environments, not only on space missions but also here on Earth, in particle detectors, for example. It is important to understand radiation's key processes and their effects on fused silica in order to design optical instrumentation that can avoid harm to its systems, enabling it to complete its mission.

Eduard Klett of Heraeus Conamic provides an overview of fused silica as an optical material and how it is affected by different types and doses of radiation. He classifies types of radiation and discusses their causes. Radiation has many effects on fused silica, including induced absorption, densification, luminescence, laser-induced damage threshold (LIDT) filamentation, as well as effects on mechanical properties. Klett discusses these effects and whether or how they can be countered. Finally, he reveals how to gain a better understanding of the basic principles of radiation's effect on fused silica, with the aim of improving optical designs so that can they endure any mission.



#### Who should attend:

Optical designers and optical engineers, R&D engineers, and research scientists who want to learn more about the radiation hardness properties of fused silica to aid in the design of demanding applications. Those in aerospace, astronomy, automation, defense, environmental research, and medicine working with technologies such as cameras, coatings, detectors, fiber optics, imaging, lasers, optical components, test & measurement, and spectroscopy.

#### About the presenters:

Eduard Klett is sales manager for Science & Research Optics for Europe at Heraeus Conamic. He began working at the company in 2021 and is new to the optics and photonics industry. Before joining Heraeus, he worked for several years as an application engineer for the startup Heraeus Additive Manufacturing, where he focused on metal additive manufacturing. He also worked as a technical project manager for British engineering company Renishaw, where he supported customers in the aerospace and automotive industries in identifying and implementing new applications for additive manufacturing. Klett began his career as a quality assurance engineer in the aerospace industry for Northrop Grumman LITEF. He received a degree in aerospace engineering from the University of Stuttgart in Germany.

Frank Nürnberg, Ph.D., is Head of Sales Optics at Heraeus Conamic in Kleinostheim, Germany. He has more than 10 years of experience with Heraeus in the optics and photonics industry with a special focus on technical support and scientific projects. He is frequently invited for conference presentations on lasers, astronomy, and space, and has published various works on fused silica challenges. He received his doctorate in laser and accelerator physics from the Technical University of Darmstadt, Germany, in collaboration with the Lawrence Berkeley National Laboratory in California.

#### About Heraeus Conamic (Heraeus Quarzglas GmbH & Co. KG):

Heraeus is a family-owned, leading international technology group headquartered in Hanau, Germany. The company's origin dates back to 1660, when a family pharmacy was opened. Today, the Heraeus Group includes businesses in the environmental, electronics, health, and industrial application sectors. Heraeus Conamic is a global business unit of the Heraeus Group and is a technology leader and a leading-edge material specialist for the manufacturing and processing of the industry's highest-purity fused silica and other high-end materials, such as ceramics and composites.

### .: Mark Your Calendar

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