



Webinar Tutorial Program

Convenient, Relevant, Interactive, and Affordable Education Opportunities

W-120

The SVC Webinar Program is a convenient approach to education, featuring SVC's most popular tutorials, covering topics relevant to technical staff and operators. These Webinars are presented by recognized professionals in the vacuum coating community and allow participants the ability to interact with the instructor during the live presentation. SVC offers both Live and On-Demand (recorded) versions of webinars.

<http://www.svc.org/Education/Webinars.cfm>

Design of Experiments for R & D

This course emphasizes issues of practical importance to those who use Design of Experiment (DOE) methodologies in the R&D or production environment. It is intended for scientists, engineers, and technicians who would like an understanding of DOE concepts and the practical challenges that can arise when incorporating them into one's experimental practices. The basic introduction to DOE and discussion of fundamental assumptions will be useful to those unfamiliar with DOE concepts. The discussion of complications and examples of how they can be addressed will be useful to those who are experienced with DOE and are interested in achieving better results from applying DOE principles. Managers of groups involved in R&D and production will find the material helpful in their efforts to support the work in their groups.

- Underlying assumptions of DOE
- DOE designs for screening factors
- DOE designs for modeling responses
- Response surface forms – the twisted plane, saddles, and domes
- Complications that arise – when is a factor not really a factor?
- More complications - dealing with non-linear responses
- Simulated experimental examples
 - screening factors
 - modeling responses
- Plasma web treatment example
 - determining a suitable process factor space
 - redefining the factor space using plasma diagnostics
 - applying a physical model of the modification process

Meet the Instructor

Jeremy M. Grace is currently a principal engineer at IDEX Health & Science | Semrock, where he works in the area of thin-film interference filters for life sciences and other applications. Prior to his position at Semrock, he was a senior principal scientist at the Eastman Kodak company, where he worked in the areas of plasma surface modification, thin-film adhesion, sputter deposition, and organic vapor deposition. As a young scientist at Kodak, Jeremy learned DOE principles, and he has applied them in his work for the past 25 years. His experience has provided him knowledge and perspective that have helped him to mentor scientists and engineers in the application of DOE principles. Most recently, he presented a tutorial on DOE to fellow engineers at IDEX Health & Science. Jeremy has written several patents and journal articles in the area of plasma modification of polymers. He is a member of the Society of Vacuum Coaters and the American Vacuum Society, and served as chair of the Upstate New York Chapter of the AVS (UNY-VAC) from 1998-2000.

