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## **Modern DOE: From Definitive Screening Designs Towards Definitive Response Surface Designs?**

*Wednesday, 29 June 2022 11:30 (1 hour)*

The application of design of experiments has undergone major changes in the last two decades. For instance, optimal experimental design has gained substantial popularity, and definitive screening designs have been added to experimenters' toolboxes. In this keynote lecture, I will focus on some of the newest developments in the area of experimental design. More specifically, I will introduce a new family of response surface designs that possess technical properties similar to those of traditional response surface designs as well as definitive screening designs: orthogonal minimally aliased response surface designs or OMARS designs. The fact that OMARS designs are numerous offers much flexibility for experimenters in their choice of response surface designs. While the original OMARS designs included quantitative factors only, there are also many OMARS designs including two-level categorical factors. I will also demonstrate that many of the OMARS designs can be blocked orthogonally. So, we may be transitioning from a definitive screening design decade to a definitive response surface design era, with OMARS designs being one of the most important tools in the experimenter's toolbox.

### **Keywords**

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