



**TITLE:** Efficient experimental designs for pharmaceutical production

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**ABSTRACT:**

We will present how the optimal design methodology can be utilised for complex experiments frequently encountered in pharmaceutical manufacturing. The primary goal was to explore the relationship between the experimental conditions (numerous factors) and the resulting response surface, ensuring the ability to make accurate predictions within that experimental region. We integrated specific optimality criteria to improve the quality of both the fitted model's inferences and its predictive capabilities. We discuss the rationale behind selecting this design approach and a review of some key results.