

ISO/TR 13195:2015-12 (E)

Selected illustrations of response surface method - Central composite design

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Terms and definitions	1
3	Symbols and abbreviated terms	6
3.1	Symbols	6
3.2	Abbreviated terms	6
4	Generic descriptions of central composite designs	7
4.1	Overview of the structure of the examples in Annexes A to D	7
4.2	Overall objective(s) of a response surface experiment	7
4.3	Description of the response variable(s)	8
4.4	Identification of measurement systems	8
4.5	Identification of factors affecting the response(s)	8
4.6	Selection of levels for each factor	8
4.6.1	Factorial runs	9
4.6.2	Star runs	9
4.6.3	Centre run	9
4.7	Layout plan of the CCD with randomization principle	10
4.8	Analyse the results -- Numerical summaries and graphical displays	10
4.9	Present the results	11
4.10	Perform confirmation run	12
5	Description of Annexes A through D	12
5.1	Comparing and contrasting the examples	12
5.2	Experiment summaries	13
Annex A (informative) Effects of fertilizer ingredients on the yield of a crop		14
Annex B (informative) Optimization of the button facility using central composite design		28
Annex C (informative) Semiconductor die deposition process optimization		41
Annex D (informative) Process yield-optimization of a palladium-copper catalysed C-C- bond formation		52
Annex E (informative) Background on response surface designs		70
Bibliography		80