

THE PHILOSOPHY OF EXPERIMENTATION

Why Design Experiments?
Organizing the Experiment
The Neglected Response Variable

STATISTICAL EXPERIMENTAL DESIGN

The Factorial Two-Level Design: General Factorial Designs
Fractional Factorials at Two Levels
Multilevel Designs
Three-Level Designs
Blocking in Factorial Designs
Randomized Block and Latin Square
Nested Designs
Evolutionary Operation

SORTING THE SIGNAL FROM THE NOISE

Simple Analysis
Analysis of Means by Using the Variance
Yates Analysis: Analysis of 2^k and 2^{k-p} Designs
Matrix Algebra
Least Squares Analysis
Putting ANOVA and Least Squares to Work
ANOVA for Blocked and Nested Designs

THE DERIVATION OF EMPIRICAL EQUATIONS FROM STATISTICALLY DESIGNED EXPERIMENTS

Case History of an Experimental Investigation

UTILIZATION OF EMPIRICAL EQUATIONS

Robust Design
Monte Carlo Simulation and Tolerance Design
Case History Completed: The Utilization of the Equation

SPECIAL TOPICS IN EXPERIMENTAL DESIGN MIXTURE EXPERIMENTS

Introduction to Mixture Experiments
Simplex Lattice Design
The Simplex Centroid Design
Constrained Mixtures
Statistical Tables and Graphs