



## MULTIFACTOR MIXTURE EXPERIMENTS : CONSTRUCTION AND ANALYSIS

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**Abstract :** An experiment in which there are two or more than two factors, each factor is a mixture of its components is called multifactor mixture experiment. Two methods of construction of multifactor mixture experiments have been developed. First method uses the algorithmic construction of efficient designs in less number of design points in comparison to existing designs obtained as a Kronecker product of single factor mixture designs. In the second method, Kronecker sum of matrices has been utilized for construction of multifactor designs where all the factors have same number of components. It has been illustrated with data that the designs developed allow the fitting of second order model.