**ABSTRACT**

The objective functions used in Engineering Optimization are complex in nature with many variables and constraints. Conventional optimization tools sometimes fail to give global optima point. Very popular methods like Genetic Algorithm, Pattern Search, Simulated Annealing, and Gradient Search are useful methods to find global optima related to engineering problems. This paper attempts to review new nontraditional optimization algorithms which are used to solve such complicated engineering problems to obtain global optimum solutions