عنوان مقاله:
An efficient coupled Genetic Algorithm-NLP method for heat exchanger network synthesis

محل انتشار:
پنجمین کنگره بینالمللی مهندسی شیمی (سال: 1386)

تعداد صفحات اصل مقاله: 10 صفحه

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خلاصه مقاله:
Synthesis of heat exchanger networks (HENs) is inherently a mixed integer and non-linear programming (MINLP) problem. Solving such problems leads to difficulties in optimization of continuous and binary variables. This paper presents a new efficient and robust method in which structural parameters are optimized by G.A. and continuous variables are handled due to a modified objective function for maximum energy recovery. Node representation is used for addressing the exchangers and networks considered as a sequence of genes. Each gene consists of nodes for generating different structures within a network. Results show that this method may find new or near optimal solutions with less than 1% increase in HENs annual cost.

کلمات کلیدی:
Heat exchanger networks (HENs); Optimization; Genetic Algorithm (G.A.); NLP formulation

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