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过程工业的投资决策支持系统

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**摘要** Most studies on investment evaluation mainly focus on enterprise economic benefits only, without process operability and sustainability considered. In this paper, we suggest that investment evaluation in process industries should be executed under three strategic objectives--enterprise benefits, social benefits and customer benefits. A systematic investment evaluation and decision-making method with a four-step procedure based on the analytic hierarchy process (AHP) is proposed to evaluate various qualitative and quantitative elements with various criteria. At the first step, the decision hierarchy is constructed under the three strategic objectives. Second, pair-wise comparison is utilized to evaluate the weights of elements and criteria. Third, qualitative elements are quantified by pair-wise comparison and quantitative elements are re-scaled by a uniform criterion. At the last, the best choice is made through synthesizing values upward in the hierarchy. An investment decision support system (DSS) is developed based on Microsoft Excel, and applied to a retrofit investment of united fluid catalytic cracking(FCC) and liquefied gas separation process in a refinery plant.

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### An Investment Decision Support System for Process Industries

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**Key words** [investment evaluation](#); [decision support system](#); [process industries](#); [analytic hierarchy process](#).

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