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ASSESSMENT OF INDUSTRIAL SOLID WASTE USING THE INTELLIGENT DECISION SYSTEM (IDS) METHOD

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Abstract

About 1800 tons of daily solid waste disposal is one of the consequences of the speedy industrial expansion in the province of Khuzestan in the south west of Iran. There are more often than not diverse criteria for assessing the resulted pollution loads from solid waste disposal. In this paper, a new application for the Intelligent Decision System (IDS) is demonstrated for industrial solid waste assessment. IDS software is a Windows-based package for handling Multiple Criteria Decision Making (MCDM) problems considering both qualitative and quantitative criteria under uncertainties. The basis of IDS is a recently developed theory named the Evidential Reasoning (ER) approach. The major features, superiority and excellence of IDS will be clarified through its application to the ranking of the industrial units located in the Khuzestan Province. Moreover, as a complimentary assessment, a sensitivity analysis is carried out in which the effect of decision maker's attitude toward risk on the total utility which each industry would gain is investigated. The results show that Ahwaz, Abadan, and Khoramshahr are respectively the three most polluting cities in the Khuzestan province. It is concluded that IDS can be utilized not only to handle problems which traditional methods can work out, but also to arrange and evaluate more difficult decision problems that traditional methods are not sufficiently expert of handling.

Key words: Evidential Reasoning Approach, Industrial Solid Waste Assessment, Intelligent Decision System, Khuzestan Province, Multiple-Criteria-Decision-Making (MCDM)

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