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USE OF FUZZY SET THEORY TO OBTAIN TEMPERATURE SET POINT OF KEROSENE IN KALUNBORG REFINERY

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Lars E. Ebbesen in 1992 studied about the crude operating in Kalundborg refinery. This refinery operates with 10 to 12 different crudes on a regular basis. To study the crude fractionator he mainly uses mass and enthalpy balance method. From his study he concluded that in case of kerosene 90% stayed within 1 C of its set-points. After two hours the quality during crude switches was different indicating to a lower quality. One of the reasons for this is due to the improper prediction of the set-point of temperature for kerosene. To improve this in this paper we use fuzzy control methods to obtain a probable set-point. We feel the prediction of set-point for kerosene using this method will be better as this gives a range within which the set-point should fall and thus consequently giving the ranges of temperature for the maximum distillation of kerosene. We adopt fuzzy control technique to the data of Ebbesen. Using fuzzy rules we show that for the temperature 225 C the possible distillation will be 89% to 90% and quality stable even after two hours.

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