

ADVANCED CONTROL FOR AN ETHYLENE REACTOR

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Rezumat. *Obiectivul central al acestei lucrari este de a dezvolta si implementa o solutie de control pentru procese petrochimice si anume controlul si optimizarea unui reactor de piroliza, instalatie cheie in industria petrochimica. Sunt prezentate caracteristicile tehnologice ale acestui proces petrochimic si unele aspecte despre sistemul de control propus pentru instalatia de etilena. In cele din urma, o solutie optimala este gasita, considerand ca procesul are o structura neliniara multivariabila. Rezultatele au fost implementate pe un ansamblu de reactoare de piroliza pe o platforma petrochimica din Romania.*

Abstract. *The main objective of this work is the design and implementation of control solutions for petrochemical processes, namely the control and optimization of a pyrolysis reactor, the key-installation in the petrochemical industry. We present the technological characteristics of this petrochemical process and some aspects about the proposed control system solution for the ethylene plant. Finally, an optimal operating point for the reactor is found, considering that the process has a nonlinear multivariable structure. The results have been implemented on an assembly of pyrolysis reactors on a petrochemical platform from Romania.*

Keywords: *ethylene pyrolysis, numerical control system design, robust control, optimization*

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