



Cairo University

**A GENERAL METHODOLOGY TO DEVELOP A
PREDICTIVE TOOL THAT CONTROLS THE
PRODUCTS YIELD OF CDU IN REFINERIES**

By

Mohamed Adly Mahmoud Nasr

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE

in

Interdisciplinary MSc. - Petroleum & Natural Gas Technology

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Title of Thesis:

A General Methodology to Develop a Predictive Tool That Controls the Products Yield of CDU in Refineries

Key Words:

General Methodology to Control the Products Yield of CDU; Refineries feedstock Optimization; Crude Blending; CDU products maximization; CDU mathematical models.

Summary:

This work introduces a general methodology that should be applicable and available for any crude distillation unit uses any number of crudes, Applying this methodology on the CDU understudy develops a mathematical model for each product able to optimize the refinery feedstock by manipulating different blends from different crudes according to the constraints required, without change in the refinery operating conditions, equipment design or products specifications. In this work, two case studies are used to prove this methodology; the first case is a Hypothetical CDU from literature, and the other case for one of Egypt's refineries, Assiut refinery.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Mohamed Adly Mahmoud Nasr

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Dedication

This thesis work is dedicated to my parents, wife and children. You have made me stronger, better and more fulfilled than I could have ever imagine.

I am truly thankful for having you in my life.

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