Thesis Title	Numerical assessment of oil catalytic cracking reactor
Programme of Studies	MSc in Sustainable Energy Systems
Course	MES 580 Master Thesis
Area of Study	Sustainable Energy Technologies – Processes Modelling and Simulation
Student's Name	George Anastasiou
Students Reg. Number	13437
Supervisor	Dr.-Ing. Paris A. Fokaides, Ass. Professor, Mechanical Engineering Department
Supervisory Committee	Dr Chris Christodoulou, Professor, Mechanical Engineering Department Dr. George Karagiorgis, Assoc. Professor, Mechanical Engineering Department
Semester	Fall Semester 2018
Short Description	The scientific community still needs to provide tools and methodologies which will allow the flexibility in the design of catalytic cracking reactors, as well as for decision making for planners and engineers. In this effort the role of simulation schemes and numerical tools which will enable the flexible and time-efficient para-metric assessment of different pyrolysis plants design is essential. This study aims to present a solid and consistent simulation process for catalytic cracking, applicable for research and technical purposes .In terms of this study the steady-state, continuous pyrolysis of catalytic cracking via Aspen Plus® software will be delivered. Following the introductory section, a comprehensive description of the state of the art in catalytic cracking, as well as the advancements in numerical simulation of cracking process will be presented and discussed. The proposed model will be applied for several test cases. Additionally, the model will be assessed through the performance of experimental plants and results retrieved by experimental studies.