

# ROBUST PREDICTIVE CONTROL OF ENERGY INTENSIVE PROCESSES

Degree course: AUTOMATIC CONTROL AND INFORMATICS

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The aim of the dissertation thesis is to develop a systematic approach to effective robust predictive control for nonlinear systems with uncertainties and bounded variables. The research will be focused on decomposing of a nonlinear control problem to a sequence of linear problems in which the problem of non-convex optimization will be reduced on the problem of convex optimisation. The methods will be developed that allow conservativeness reduction and the robust predictive control algorithms based on solution of linear matrix inequalities. The developed methods and algorithms will be implemented on specific energy intensive process with the aim to show energy savings achieved by implementation of advanced control approaches.

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