LIST OF TABLES

No.	Title	Page
2.1	Significance of the Relative Gain Array values features	24
2.2.	Significance of the Relative Interaction Array values features	27
3.1.	Coefficients for Equation 3.40	58
3.2	Coefficients for Equation 3.41	59
3.3	Coefficients for Equation 3.42	60
3.4	Antoine Equation coefficients for propylene	61
3.5	Constants for the specific heat capacity relationship	62
3.6	Coefficients for the equilibrium relations	62
4.1.	Comparison of the eigenvalues of the system	72
5.1	Ranges for measured variables	84
5.2	Ranges for manipulated variables	84
5.3	Maximum allowable gain factors on potential control loops	85
5.4	ISE values of controlled variables in conventional control approach, Base Case, using DPC. and Dacey's tuning settings	93
5.5	ISE values of controlled variables in all cases applying the three control approaches	93
5.6	Comparison of the control cases performance based on several performance factors	101
5.7	ISE values of potential controlled variables in cascade temperature control approach, basic case with reduced number of closed loops	102
5.8	ISE values of all potential controlled variables in cascade temperature control approach, basic case, with different	105

	disturbances	
6.1	Cases studied in the control analysis	112
6.2	Results of output effectiveness (OE) method	114
6.3	Controllability and resiliency analysis at steady state	116
6.4	Results of the RGA analysis	125
6.5	Results of the RIA analysis	126
6.6	Total RIA and NI results	127
6.7	JEC results	128
6.8	Recommended pairing using SVD method	129
6.9	Interaction measures results at steady state	134
6.10	Comparison of investigated indexes	135
7.1	IOIA results for the refrigeration system case study	154
7.2	Application of the IOIA pairing procedure	155
7.3	IOIA for the coal gasifier at 100% load	159