

REFERENCES

- [1] Asmar, BN., Jones, W.E., and Wilson, J.A, "A process engineering approach to the ALSTOM gasifier problem," *Proceedings of the Institution of Mechanical Engineers Part I - Journal of Systems and Control Engineering*, Vol. 214, No. 16, pp. 441-452, 2000.
- [2] Bristol, E., "On a new measure of interaction for multivariable process control," *IEEE Transaction on Automatic Control*, Vol.11, No.1, pp.133-134, 1966.
- [3] Burnham, K., Young, P., and Dixon, R., "Special issue on the ALSTOM gasifier control engineering benchmark challenge," *Proceedings of the Institution of Mechanical Engineers Part I - Journal of Systems and Control Engineering*, Vol. 214, No. 16, 2000.
- [4] Chang, J.W., and Yu, C.C., "Relative disturbance gain array," *AICHE Journal*, Vol. 38, No.4, pp.521-534, 1992.
- [5] Chen, D., and Seborg, D.E., "Relative gain array analysis for uncertain process models," *AICHE Journal*, Vol. 48, No.2, pp.302-310, 2002.
- [6] Dixon, R., and Pike, A.W., "Introduction to the 2nd ALSTOM benchmark challenge on gasifier control," in *Control 2004*, Bath, UK.
- [7] Dixon, R., Pike, A.W., and Donne, M.S., "The ALSTOM benchmark challenge on gasifier control," *Proceedings of the Institution of Mechanical Engineers Part I - Journal of Systems and Control Engineering*, Vol. 214, No. 16, pp. 389-394, 2000.
- [8] Kariwala, V., Skogestad, S., and Forbes, J.F., "Relative gain array for norm-bounded uncertain systems," *Industrial and Engineering Chemistry Research*, Vol.45, No.5, pp.1751-1757, 2006.
- [9] Ljung, L., *System Identification – Theory for the Users*, Prentice Hall, 1997.
- [10] Luyben, W.L., Tyreus, B.D, and Luyben M.L, *Plantwide Process Control*, McGraw Hill, New York, 1998.
- [11] Skogestad, S., "Control structure design for complete chemical plants," *Computers and Chemical Engineering*, Vol. 28, pp.219-234, 2004.
- [12] Stanley, G, Marino-Galarraga, M., and McAvoy, T.J., "Shortcut operability analysis .1. The relative disturbance gain," *Industrial and Engineering Chemistry process Design and Development*, Vol.24, No.4, pp.1181-1188, 1985.

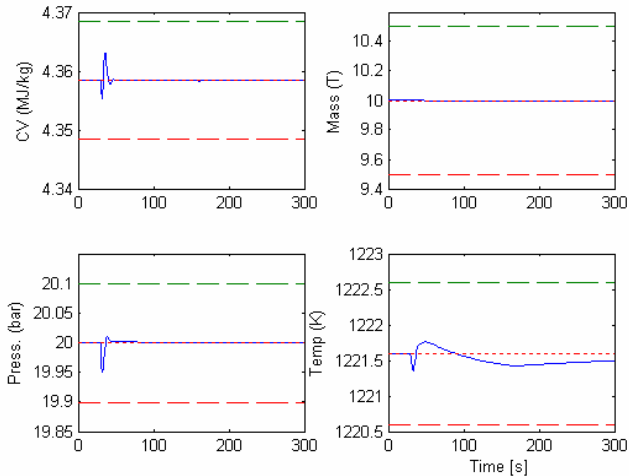


Figure 3. Process response to step pressure disturbance at 100 % load

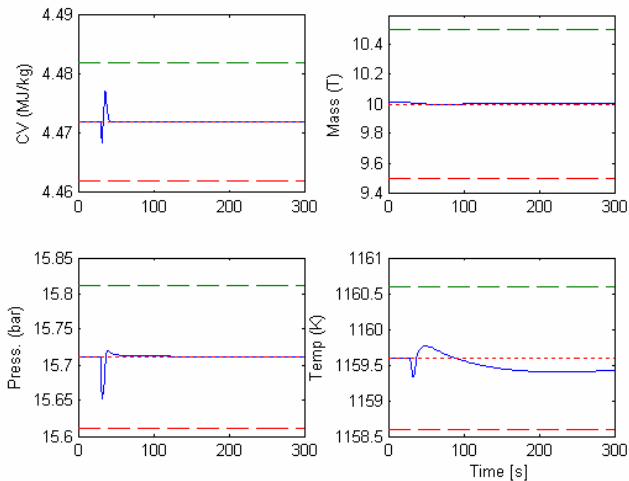


Figure 4. Process response to step pressure disturbance at 50% load

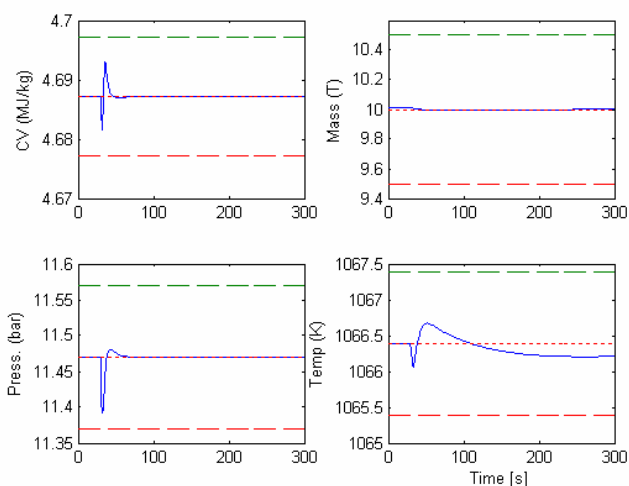


Figure 5. Process response to step pressure disturbance at 0% load