



A Bond Graph Modeling for Health Monitoring and Diagnosis of the Tennessee Eastman Process

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Auteur	Tidriri, Khaoula [1], Chatti, Nizar [2], Verron, Sylvain [3], Tiplica, Téodor [4]
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Mots-clés	bond graph [5], chemical process [6], Fault detection and diagnosis [7], graphical approaches [8], Integrated design [9] Data-driven fault detection and diagnosis approaches are widely applicable in many real-time practical applications. Among these applications, the industrial benchmark of Tennessee Eastman Process (TEP) is widely used to illustrate and compare control and monitoring studies. However, due to the complexity of physical phenomena occurring in such process, no model-based approach for fault diagnosis has been developed and most of the diagnosis approaches applied to the TEP are based on experiences and qualitative reasoning that exploit the massive amount of available measurement data.
Résumé en anglais	In this paper, we propose to use the Bond Graph formalism as a multidisciplinary energetic approach that enables to obtain a graphical nonlinear model of the TEP not only for simulation purposes but also for monitoring tasks by generating formal fault indicators. In this study, the proposed BG model is validated from the experiment data and the problem of the TEP model design is hence overcome. A Bond Graph Modeling for Health Monitoring and Diagnosis of the Tennessee Eastman Process (PDF Download Available). Available from: https://www.researchgate.net/publication/314032904_A_Bond_Graph_Modeling... [10] [accessed May 30, 2017].
URL de la notice	http://okina.univ-angers.fr/publications/ua15564 [11]

Liens

- [1] <http://okina.univ-angers.fr/k.tidriri/publications>
- [2] <http://okina.univ-angers.fr/nizar.chatti/publications>
- [3] <http://okina.univ-angers.fr/sylvain.verron/publications>
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