UNIVERSIDADE FEDERAL DE VIÇOSA
CENTRO DE CIÊNCIAS EXATAS E TECNOLÓGICAS
DEPARTAMENTO DE TECNOLOGIA DE ALIMENTOS

Campus Universitário – Viçosa, MG – 36570-000 – Telefone (31)3899-2226 – fax: (31) 3899-2208 - E-mail: dta@ufv.br

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Aluno: Guilherme Mendes da Silva
Orientadores: Jane Sélia dos Reis Coimbra

Simulação de processos industriais
Simulation of industrial processes

In a process simulation, thermodynamic calculations can be quite time consuming for systems involving non-ideal gases. Most of the time, the facilities have different parts and a complex web of recycling streams. Some calculations require interactions or a specific thermodynamic equation/model for each unitary operation. So, how are such calculations performed in industry, or how will you do them efficiently in your design project? This can be performed by using softwares known as a "Process simulators". The biggest advantage of using simulators is that repetitive calculations using varying parameters are quickly achieved, so the project gains robustness regarding to the output response from a parameter input. Then, after the components, feed composition, conditions, constraints and thermodynamic models are defined, the researcher is able to compute the energy and mass balances of all streams in the process and evaluate the accuracy of the parameters selected. After simulation, the user can easily changes the inlet stream and conditions (e.g., temperature and/or pressure at various points of the process), and rerun the simulation. Using a process simulator increases the chance of successful parameter definition during the construction of prototypes to study more complex processes. Aspen Plus® is a process simulator for modeling chemical processes including complete chemical and pharmaceutical plants and petroleum refineries and now has been tested in others facilities like food plants.

Referências bibliográficas:

SANDLER, STANLEY I. **Using Aspen Plus® - In Thermodynamics Instruction: A Step-by-Step Guide.** American Institute of Chemical Engineers and John Wiley & Sons, Inc. New Jersy – USA. (2015)

ASPEN TECHNOLOGY, INC. **Aspen Plus® - Process modeling environment for conceptual design, optimization, and performance monitoring of chemical processes**. Disponível em: < http://www.aspentech.com /products/engineering/aspen-plus/>. Acesso em; 08 de abr. de 2017.