Chemical Process Design / Diseño de Procesos Químicos

Memo I. Guidelines Memo I

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Objective: In MEMO 1, you should decide the alternative you are going to follow to produce second generation bioethanol and you must draw the process flowsheet.

To-do list:

1. Perform a literature review of all alternatives to produce bioethanol from lignocellulosic biomass via hydrolysis: You can begin with Balat, 2011; Llano, 2016; Alvira et al., 2010; Xu and Huang, 2014.

2. Represent the alternatives analyzed in a superstructure diagram.

3. Briefly discuss the alternatives you considered. If there are three ways of performing a separation, what are they, and why did you choose one over the others?
4. **Select and display one flowsheet alternative.** The flowsheet must contain an appropriate level of detail, showing and labelling all equipment.

5. Lead the reader through your flowsheet, **briefly describing the function of each major unit.** Estimate operating conditions if you can (in SI units). Follow the major streams, starting with the feed. Then provide a complete equipment list in the appendix.

6. Perform a **gross profit calculation** for this process including the storage and transportation costs, making reasonable assumptions, to determine if it is worth proceeding.

7. Make a **list of your references** as you encounter them. For each entry, write a phrase or two describing its contents, thereby forming an annotated bibliography. Just a long list of references is of limited value to someone using your report. Use the format specified in the “cite” in the Library of the University of Cantabria.

Memo 1 must contain:

- **Cover letter** (1 page).

- **Main Text** (6 pages max. of text; place figures and tables in appendix):
  - State the problem.
  - Overview of the alternatives you considered.
  - Briefly describe the function of each unit of your flowsheet.
  - Gross profit results.

- **References**: articles, patents, encyclopedias, web.

- **Appendix**: superstructure diagram; flowsheet; equipment list; figures, tables; gross profit calculation.

Some references to consult:


