

CACHE Learning Resource Center

Product and Process Design
Web Site

And Related Design Items

June 14, 2013



Guide to Teaching Design with Internet Links

Provides guidance for teaching product and process design with 200 recommended links to websites associated with:

Textbooks
Monographs
Completed design case studies
Design problem statements
Design software
POWER POINT lectures

prepared by design instructors.

First Edition - August 2011

First Revision - August 2012*

* Article for CACHE News - Fall 2012



Guide has Materials in:

Area Editors in Parentheses

Product Design (Warren D. Seider)

Process Flowsheet Synthesis (Rafiqul Gani, Warren D. Seider)

Process Simulation (Chau-Chyun Chen, Warren D. Seider)

Process Integration (Mahmoud El-Halwagi)

Equipment Design (Gavin Towler)

Environment and Sustainability (David Shonnard)

Safety (Dan Crowl)

Optimization - Process Synthesis and Flowsheet Optimization (Larry Biegler,
Ignacio Grossmann)

Supply Chain Optimization, Planning, Scheduling (Ignacio Grossmann, Rex Reklaitis)

Process Modeling (Rafiqul Gani)

Design case studies and Design problem statements (Ignacio Grossmann,
Joseph Shaeiwitz, Richard Turton)



Second Year Revision - August 2013

Area Editors are checking links, adding new links

~25 of 200 links are not functioning properly - being replaced



Are AIChE Student Contest Problems (1932-present) available to appear on the CACHE web site with prize-winning solutions?

Do contest problems track well the development of our profession?

Commodity chemicals
Unit operations
Process simulation
Specialty chemicals
Batch processing
Pharmaceuticals
Product design

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Any emphasis on:

Molecular modeling?
Electronic materials?
Labs-on-a-chip, Microfluidics?
Use of CFD?

Bette Lawler
arranging to upload
problem statements and
solutions - some of
which are lengthy.
Also, checking to locate
missing entries.

**Will begin uploading in
July.**



Teaching Design Survey with AIChE Education Division - prepared by:

David Silverstein, Univ. of Kentucky
Lisa Bullard, N. Carolina State
Warren Seider, Penn

Created and distributed survey, last spring, to Dept. Chairs in N. America (and selected design instructors) and specific instructors abroad.

Respondents offered a free CACHE design case study - Cellulose to Biofuel (Grossmann and Martin)

Complete Results - being presented at the ASEE Meeting in Atlanta