Select a major organic commodity chemical (not including one of the principal petrochemical feedstocks, i.e., methane, ethylene, propylene, benzene, toluene, xylenes, or a C₄ or C₅ hydrocarbon) or a large-volume downstream product. Periodicals such as Chemical Week, Chemical & Engineering News, and Chemical Market Reporter are good sources of ideas for topic chemicals.

Prepare a comprehensive report discussing all pertinent aspects of the process(es) used to manufacture this chemical.

Appropriate topics for discussion include (but are not necessarily limited to) the following:

1.) Principal downstream demand or end uses for the chemical.

2.) History of prior process(es), if any, for manufacturing the chemical, including a timeline for the development of improved or larger volume processes.

3.) Thermodynamics of the reaction(s) used, and consequent limitations, if any, on process yields.

4.) Kinetics of the reaction(s) involved, including kinetic expressions, if available.

5.) Reactor designs used.

6.) Typical ranges of operating conditions (temperature, pressure, contact time, etc.) and reasons for their selection.

7.) Detailed description of the catalyst(s) used for the process(es), including promoters, supports, lifetime, susceptibility to deactivation, and nature of the “active sites” (if known).

8.) List of the pertinent patent(s) covering the process.

A minimum of six literature references should be used as sources in preparing the paper. Of these, no more than two may be un-refereed web sites. Note that Wikipedia should not be used as the sole on-line source for a topic, without corroboration from other sources. Total length of the paper should be 15-20 double-spaced pages, not including the list of cited literature references and supplementary material such as Tables and Figures.

Paper is due no later than Monday, April 26th.