

37i Superpro Designer: an Interactive Software Tool for Designing and Evaluating Integrated Chemical, Biochemical, and Environmental Processes

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The successful design and evaluation of integrated chemical manufacturing and end-of-pipe treatment processes is a challenging task that can be facilitated by the use of advanced computer-aided process design and simulation tools. Such tools also play an important role in teaching environmental engineering and other design-oriented courses. They are particularly useful in emphasizing the importance of systems approach in the design of integrated processes. In our department we have successfully used SuperPro Designer, a comprehensive simulator from Intelligen, Inc. SuperPro carries out material and energy balances, calculates environmentally significant stream properties, estimates the size and cost of equipment, and performs economic evaluation of integrated processes. Using SuperPro, the student and tomorrow's engineer can readily analyze the effect of changes in operating conditions on the environmental impact and the economics of a process. The functionalities of SuperPro and our experience in using this tool in several courses will be presented.