

Chemical Product Engineering

G. D. Moggridge*

University of Cambridge

(gdm14@cam.ac.uk*)

“[C]hemical engineering science should not become exclusively identified with the “rigorous” subjects ... [W]e should be ready to use science to solve any of the problems of chemical engineering, however ill-formulated they may be ... [We] should take every opportunity to emphasise the versatility which our training provides.”

P. V. Danckwerts, 1966

Over the past few decades, the teaching of design to chemical engineers has increasingly become identified with the “rigorous” subjects, in particular computer modeling of processes. This has been appropriate for the commodity and petrochemicals industries, the dominant employers of our graduates over the past century. However, in recent years, high value added products have become more important to the chemical industry. As a response to this in Cambridge, I have developed a course on Chemical Product Design. A simple four step design procedure is used, the aim being to provide a template for chemical product design which is independent of case studies. I will illustrate how this design procedure works by reference to a number of case studies, including the design of an environmentally friendly method of controlling zebra mussels.