less prestigious programs. Several factors may explain this phenomenon. On the one hand, the data suggest that the consistently high rankings of elite programs are due to the large number of graduates that those very same programs put into the discipline each year. While they place some graduates in other elite schools, most descend into mid-level schools or less renowned institutions where they continue to subjectively rank their alma maters as the very best. The high number of elite school graduates at all levels also seems to enable them to play a disproportionate role in shaping opinion within the discipline.

There is another way of explaining the relative stability in the ranking of elite programs over time. Obviously, there are not enough faculty from elite schools at middle and lower level programs for them to maintain the high ranking of their alma maters without some support from their non-elite colleagues. Tradition may be a partial explanation for the non-elite's acceptance of their inferior status. Elite schools have been accorded high esteem for decades, and these traditions typically have gone unchallenged.

A more likely explanation, however, is that the non-elite, in a classic example of Marxian \emph{false consciousness}, have adopted their elite peers' assessment that the latters' programs and faculties are superior. Buttressed by only a few subjective government surveys and contact with a handful of individuals from elite programs, the non-elite have not only accepted but also even promoted the notion that elite graduate programs are deserving of high esteem, whereas others, including their own, are not.

Ultimately, I think it should be asked: Are the eight highest-ranked programs indeed the best PhD programs in chemical engineering, or do they comprise an "academic elite" with a large number of faculty members in the discipline and an obvious interest in perpetuating the present ranking system? I believe that data suggest that the latter is true.

Two final comments seem in order. First, I contend that because of their subjectivity, current ranking systems are a detriment to the discipline. They may impede professional mobility, reward status over achievement, and result in programs of lesser renown being bypassed, even though they may merit as high or higher recognition than do those of the elite. Second, I believe that current, subjective ranking systems incorporate serious distortions and misrepresentations. Because they have the potential to do as much harm as good, I recommend that as they are presently constituted, subjective systems of departmental ranking should be routinely ignored.

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\begin{bookreview}

\textbf{CHEMICAL AND ENGINEERING THERMODYNAMICS}

Second Edition


Reviewed by

J.P. O'Connell, D.J. Kirwan

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This is the second edition of a text for undergraduate chemical engineers. As the author's preface points out, the objectives of both editions are the same: 1) to develop a course relevant to other parts of the curriculum, such as separations, reactors, and design, and 2) to present sufficient detail in a way that leads to good understanding and proficiency of application.

Distinctive treatments of the first edition included introduction of the mass, first, and second law balance equations in the same way (this may demystify entropy for some students). Also, treatment of the variety of phase equilibrium situations among solids, liquids, and vapors is more complete and more categorized than in other texts.

The major change from the first edition is the inclusion of BASIC programs for calculating 1) thermodynamic properties and VLE for pure and for multicomponent systems from a cubic EOS, 2) low-pressure VLE from activity coefficients from group contributions, and 3) equilibrium constants and stan-Continued on page 195.

\end{bookreview}
The qualities of the text are numerous. It has been adopted in a limited number of situations, according to the latest AIChE Education Survey, and it is worthy of serious consideration at least as a reference.

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