sultant crystal or composite eutectic structure. During his tenure as chairman, a number of faculty with interests in materials or materials processing have joined the department. Obviously, as indicated by the lattice connections, the materials and the processing methods are wide ranging and of current commercial and theoretical interest. Rasmussen, Babu, Sukanek and McCluskey, as well as Wilcox, have an interest in electronic materials and on-chip processing. Each of these faculty members have spent at least one summer or sabbatical year with an industrial electronics manufacturer. Campbell, a polymer processing engineer, and Sukanek, a polymer rheologist, combine to work on polymer processing in bulk, injection molding, blown film and spin coating. They are also involved with Rasmussen in work on foaming of polymeric and multicomponent systems. Baltus's interest in hindered diffusion in porous systems and McCluskey's work in kinetics and catalysis complete the left hand unit cell.

Shankar Subramanian did his doctoral dissertation under Bill Gill and joined Clarkson's faculty in 1973. His ascent to the chairmanship of the department in 1986 brings continuity to the research group—originally founded by Gill—interested in transport and transport related problems. McLaughlin, Chin, Nunge, and Cole combine with Subramanian to study turbulence, electrochemical phenomena, fluids, and bubbles. Weiland has worked in slurry rheology and fluid flow in filled systems. Taylor, Weiland and Lucia have interests in mass transfer and separation processes. Cole and Obot are interested in boiling and convective heat transfer. Harris's work on digital control and Ward's work on analog control complete both this unit cell and help to tie together the left and right hand parts of the department, as does the interaction between Cole and Sukanek on optical measurement techniques.

A number of important interactions have not been included in the lattice connections because of inability to place the appropriate parties in nearest neighbor relationship. For example, Cole's interest in nucleation during boiling is not far removed from Rasmussen's interest in nucleation of crystals from the liquid state or solution or his interest in polymeric foams. Wilcox, Subramanian and Cole all study materials processing in low gravity and both Wilcox and Cole enjoy flying NASA's KC-135 aircraft to monitor low-G experiments themselves. Again, McLaughlin and Campbell have an interest in fluid rheology of filled systems under high shear, though our model cannot indicate this collaboration. The newest faculty member, S. Ted Oyama, is included in the matrix where he is expected to interact. His background is in the study of surfaces on solids and processing at surfaces. Oyama will arrive on campus this summer.

The research interests of our faculty are constantly evolving. The future will combine materials and transport phenomena. The obvious evolution continues to materials processing and the establishment of a center for materials processing, CAMP. The building of a physical facility for CAMP which will include our entire department indicates Clarkson's commitment to our research interests. We will move on. □

ChE book reviews

THE CHEMICAL ENGINEERING GUIDE TO HEAT TRANSFER: Vol. 1, Plant Principles; Vol. 2, Equipment

Edited by K. J. McNaughton and the Staff of Chemical Engineering; Hemisphere Publishing Corp., Washington, DC and McGraw-Hill, New York, NY; 362 pages, $49.95 and 300 pages, $49.95, respectively (1986)

Reviewed by
Robert Cole
Clarkson University

Each volume consists exclusively of papers originally published in the McGraw-Hill Chemical Engineering magazine. The editors have classified ninety-three articles into two major categories depending upon whether they emphasize plant principles or equipment. These categories are further broken down as

- Heat exchangers
- Design
- Steam
- Shell-and-tube equipment
- Heat recovery
- Cost

for the former, and

- Boilers
- Heating and insulation
- Dryers
- Cooling
- Condensers
- Other equipment

for the latter. In general, the classification has been well done and the articles on heat recovery, for exam-

ple, do emphasize heat recovery. That is not to say, however, that the same articles do not discuss either design or equipment.

Chemical Engineering magazine is noted for its abundance of very practical and clearly written articles. It is, in effect, a "how to" magazine for the practicing chemical engineer. It follows that the same may be said about these two volumes. Articles are found which discuss, for example:

- Choice of construction materials (for heat exchangers)
- Latest TEMA standards
- Trouble shooting shell and tube equipment
- Hairpin, finned bundle, and helical coil heat exchangers
- Energy efficiency and conservation
- Heat recovery networks
- Steam traps and accumulators
- Fog formation
- Selection of industrial dryers
- Microwave drying
- Solar ponds
- Packaged boilers (specify carefully)
- Selecting refrigerants
- Coolers for cryogenic grinding
- Winterizing process plants
- Insulation without economics

The examples above are, of course, just a sampling of the many interesting articles which have been selected by the editors. Thirteen articles include detailed programs for both the TI-58/59 and HP-67/97 programmable calculators. Although many engineers now have their own microcomputers, and portable or laptop versions are available, it is doubtful that they are being carried around to the extent that the personal calculator is or the slide-rule (what?) was. Hence these programs should still be of considerable interest and use.

Although these volumes are certainly not intended as a text for any specific course, they should be part of any collection of reference books available for use with courses in heat transfer, design principles, and plant design. Excellent examples are presented of the practical usage of equations and concepts already familiar to upper level chemical engineering students. Perhaps just as important, the articles are short, interesting, and readable. With the increasing emphasis accreditation has placed upon such topics as safety, economics, practical open-ended type problems, *etc.*, these volumes become of increasing interest and value. □

ChE letters

JOURNAL PRICES SKYROCKET

To the Editor:

An article in *Science* (**236**,908,1987) caught my attention. It was entitled

Libraries Stunned by Journal Price Increase
...research libraries also believe they are being exploited by journal publishers.

It tells of libraries being terribly upset by a 16% annual price increase. That's just peanuts. I wonder whether my fellow academics know what goes on in our field. Let me relate one of our horror stories.

In the 70s *CEC* was launched with six real bona fide issues/volume and one volume/year. Then things started changing with more and more volumes per year, combining issues, calling one mailing three issues and so on; of course always charging per volume. Finally they dispensed with the fiction of issues. Now each mailing is called a volume, and the number of pages has continually shrunk. The latest volume has just 254 small pages with large print.

CEC published thirteen and one-half volumes in 1987, charging close to $300/volume. That comes to just about $4000/year. In comparison, *CES* gives you twelve issues/volume, each issue having more in it than a whole volume of *CEC*.

The following table compares what you get from these two commercial publishers (December 1987 figures):

	# pages/vol.	# words/page	Cost/vol.	Cost/1000 words
CES	2,989	~1,240	$435	$0.117
CEC	~350	~630	$296	$1.34

Look at that - over eleven times as expensive.

A rogue operation like *CEC* acts as an insidious cancer on our profession, looking healthy at first but then strangling its host - the information disseminating channels of our profession. For example, why shouldn't other publishers say, "If *CEC* can get away with charging over ten times as much as we do, we're fools if we don't follow suit." And if many of them do, what will this do to our libraries and to the profession's ability to disseminate knowledge?

How does such a situation develop? Simple. You want something (a place to publish your papers), the publisher gives you what you want, and it costs you nothing directly. To get going, the publisher gets a prestigious editorial board, the rest follows. In a way we are all to blame for this situation: the editorial board members for allowing their good names to be associated with these rapacious operations, and we, the consumers, for going along with it.

What can we do about this? More important - do we want to do anything about it? I wonder. Does anyone have ideas?

This spring our library has asked each university department to recommend cutting 15%, in dollar terms, from its journal holdings. I think I know how to do this in chemical engineering by eliminating just 1% of our journals.

Sincerely,

Octave Levenspiel
Oregon State University

EDITOR'S NOTE: *CEE* welcomes any additional comments from our readers on this subject. *CEE* has published four issues/volume since its inception while at the same increasing the average size of individual issues. Subscription rates have been raised only twice in the past ten years.