of the class, who was able to propose a new constitutive equation. Preliminary evaluation of this proposal shows promise and suggests further work. Another project involved the application of polymers as photoresist or e-beam resist materials in microelectronics industry. Resist spinning on semiconductor wafers was modeled. The relevant continuity and dynamic equations were established in this effort. Analytical solution was obtained only through the incorporation of rather drastic assumptions. More accurate results rely on incorporation of improved viscoelastic equations and concentration-dependent solvent diffusion rate expressions.

Other problems included the effect of pressure-dependent viscosity on injection molding, dynamic behavior of a single-screw extruder, bubble rise in a viscous medium, and attempts at modeling high-conversion polymerization reactors. As a result of these class efforts, some potential long-term research projects were nucleated. □

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ChE stirred pots

HEAT EXCHANGERS

The Agony and the Ecstasy

Premeditated motions
Control the beckoning valves.
Water begins its hereditary migration
Towards the shell side
While steam penetrates other water
Destined by ulterior motives to ramble
In a twisting gyrating frenzy
To the tube side.

Swept up in the confusion
Of bombarding torrents
A decision must be reached
By the bold few who dare
Comprehend heat exchangers,
IS there a heat balance?

Time vacates as great minds
Ponder through flow rate commandments
And theories of original heat.
Minds seeking to know
Whys and wherefores,
Pros and cons,
Ins and outs,
And clues only heat exchangers can provideS
The elusive stigma attached to heat transfer.

Peering through the cheap answers
The truth shyly steps forward;
Heat has indeed been abducted
By common two-bit fouling resistance schemes
Use primarily by alien heat exchangers
Affiliated with corporations of ill repute
And shady character profiles.

This then becomes . . . the agony.

Despite seemingly corrupt odds,
Heat transfer does occur;
The hot gets colder
The cold gets hotter
And data gets its wish, a plot.

How can one put into words
The ecstasy of a well correlated Wilson plot?
How can one man conceived in liberty
And dedicated to the proposition
That all men are created equal
Stand up and boldly proclaim
"I have found it . . . heat exchangers!"

Let this man step forward and be heard,
For he has indeed found
The elusive truth;

And this is . . . the ecstasy.

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