

Parametric sensitivity and autothermal stability are next treated and the chapter concludes with a discussion of flow profile and axial dispersion effects. The last chapter (10) is primarily con-

cerned with optimal operation and control of batch reactors.

K. B. Bischoff
Cornell University

ChE curriculum

Specialization in FINE PARTICLE TECHNOLOGY

CLYDE ORR, JR.
Georgia Institute of Technology
Atlanta, Georgia

American universities do not emphasize specialities within a general field as much as do some of our European counterparts, except by way of thesis research. Georgia Tech and Loughborough University of Technology in England are inaugurating an exchange program for first-year master's degree graduate students in chemical engineering that will bring somewhat more specialization into U. S. education and will broaden the program for the English students. The area of specialization of this initial program may be generally termed fine particle technology.

Loughborough University is primarily a technological institution with departments covering a full range of engineering disciplines, applied sciences, management, and the social sciences. It is much like Georgia Tech in orientation, course offering, size, and student background. Within its chemical engineering department are professors having special competence in solid-liquid separation, comminution, emulsification, mixing and blending, and the like, while Georgia Tech competence in the fine particle area tends more toward aerosol technology and air pollution abatement. Exposure of students to both special groups with their different viewpoints along with instruction in the more traditional subjects of thermodynamics, transport phenomena, advanced mathematics, etc., will result, it is believed, in an augmented educational experience and lead to considerable expertise on the part of the recipients.

Approximately the first six months of graduate study will be spent at the foreign institution and the remaining time at the home institution, thus enabling the students to conduct their thesis research at the home institution. The thesis prob-

lem must involve some aspect of particle technology. The degree will be awarded by the home institution upon satisfactory completion of the course of study. Each institution enrolls its own students and is responsible for obtaining or advising on financial support for its students.

A typical Master's program for Georgia Tech students at Loughborough would be as follows:

Fall Quarter	Winter Quarter
Mathematics	Mathematics
Fluid Mechanics	Particle Characterization
Heat & Mass Transfer	Particle/Fluid Systems
Thermodynamics	Interfacial Phenomena
Computing	Particle Lab. 15 hrs/wk
Laboratory (6 hrs/wk)	

Upon returning to Georgia Tech, students will be required (1) to complete satisfactorily two of the three graduate courses: Aerosol Technology, Industrial Emission Control, and Atmospheric Reactions; (2) submit an acceptable thesis; and (3) participate, as long as enrolled, in a seminar course.

WHITE: Polymer Program (Con'd from p. 41.)

- R. L. Boles, H. L. Davis and D. C. Bogue, "Entrance Flows of Polymers Materials: Pressure Drop and Flow Patterns," *Poly. Eng. Sci.*, **10**, 29 (1970).
- Bogue, D. C., "An Explicit Constitutive Equation Based on an Integrated Strain History," *Ind. Eng. Chem. Fund.*, **5**, 253 (1966).
- White, J. L., "Elastomer Rheology and Processing," *Rubber Chem. Technol.*, **42**, 257 (1969).
- Ballenger, T. F., I. J. Chen, J. W. Crowder, G. F. Hagler, D. C. Bogue and J. L. White, "Polymer Melt Flow Instabilities in Extrusion: Investigation of the Mechanism and Material and Geometric Variables," *Trans. Soc. Rheol.* (in press).
- White, J. L. and M. Yamamoto "Lattice Theory of Melting of a Crystalline Polymer," *J. Phys. Soc. Japan*, **28**, 891 (1970).
"A Theory of Deformation and Strain Induced Crystallization of an Elastomeric Network Polymer," (to be published).
- White, J. L. and G. Kingry "Theoretical Analysis and Critique of the chromatographic separation of Macromolecules Using Porous Adsorbents" *J. Appl. Poly. Sci.* (in press)