26b Teh Chung Ho and Hydrodynamic Stability Theory

Morton Denn

Teh Chung Ho's Ph.D. research, in which he showed that pressure-driven channel flow of a Maxwell viscoelastic liquid is stable to infinitesimal disturbances, was a seminal contribution to the study of polymer processing instabilities, and the primary publication from that work [T. C. Ho and M. M. Denn, "Stability of plane Poiseuille flow of a highly elastic liquid," J. Non-Newtonian Fluid Mech. 3:179-195 (1977)] continues to be cited after twenty-eight years. I will briefly discuss some new ideas that relate Ho's work to the current understanding of flow instabilities. I will also consider the nature of chemical engineering graduate education in the 1970's that made it possible for someone doing theoretical research in viscoelastic flow instabilities to develop into a recipient of the R. H. Wilhelm Award in Chemical Reaction Engineering.