

BOOK REVIEW

SESHADRI (C. V.) and PATANKAR (S. V.); *Elements of Fluid Mechanics*. VIII, pp. 236. Prentice-Hall of India (E E E), New-Delhi, 1971. Rs. 20.00.

This text-book enables pure science students to know the application of principles of fluid mechanics to practical situations and at the same time it enriches the imagination of engineering students to apply the knowledge to practical problems wherein variable multiparametric influences are encountered. In the light of the guidelines provided for students in the last chapter, one can go much deeper into the modern subjects like biofluid mechanics, rheodynamics and fluid mechanics of space.

The examples cited in the text book are very instructive and practical. Any student irrespective of the degree of calibre will be more interested in such teaching methods, which make use of such practical examples as cited in the text, than the conventional methods which straightaway start with momentum equation, boundary conditions and numerical solutions. In the meanwhile, some tougher assignment problems can open up new venues for further research in the selected topics of fluid mechanics.

But the following clarifications could be incorporated in revised editions.

It is not suggested very clearly as to what is the correct definition of critical Reynolds number (p. 204), which is actually that Reynolds number which is computed from such critical velocity, at which abrupt pressure drop values are obtained.

There are different types of friction factors (Fanning, Blasins and several others) which are widely used in many text-books on fluid mechanics and also in current literature. It is better to mention them and their interrelations so that the students are benefited more.

The guideline given for calculating the entry length in page 127 is obtained from Langhaar's analysis and is usually referred to as Schiller's formula. This point has to be mentioned. The applicability of this formula to multi-phase flows, Non-Newtonian flows or pipe flows of different geometrics like rectangular pipes, coiled pipes is very doubtful, and it should be mentioned.

The difference between average velocity, point velocity and maximum velocity should be indicated. It should be very clearly indicated as to which velocity has been used in computing Reynold's number and friction factors.

Different types of vortex flows and their occurrence in conventional equipments like cyclone separators and stirred vessels could be mentioned.

Instruments like orifice meters and other meters used in different types of fluid flows could be mentioned.

Concepts of potential and boundary flows could be introduced in greater detail so that an interested student will increase his imagination to apply them to practical situations.

V. G. KUBAIR