PREFACE

The thesis entitled studies on gas-liquid flow through curved geometries is submitted herewith. In present investigation studies have been carried out on the hydrodynamics of two-phase gas-Newtonian liquid flow through horizontal tube, different types of bends (45° to 180° bend) in horizontal plane, vertical and horizontal helical coils. In case of horizontal two-phase flow correlation in terms of various physical, geometric and dynamic variables of the system have been developed to predict the frictional pressure drop and Lockhart-Martinelli curve agree well with holdup. Correlations have been developed for individual bends in terms of various physical and dynamic variables of the system to predict the frictional pressure drop. A generalised correlation, taking into consideration the angle effect for individual bend, has been developed to predict the frictional pressure drop across the bends. Correlations in terms of various physical, geometric and dynamic variables of the system have been developed to predict the frictional pressure drop and holdup fraction in helical coils of vertical and horizontal orientation.