



APPLICATION OF VARIOUS METHODS OF VISUALIZATION IN THE STUDY OF TURBULENT MIXING IN A SHOCK TUBE EXPERIMENTS

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Examples of application in experiments on shock tubes of different methods of flow visualization: shadow method, the method of laser sheet, a method of defocused filament (Ronchi method) and method of defocused gratings are discussed. These methods have been used in the study of turbulent mixing zone that develops at the interface of two gases of different density, accelerated by shock waves. The combination of these methods allowed to discover the existence of a jump in the concentration of the heavier gas at the boundary between the gas and the turbulent mixing zone.

The peculiar feature of instability development of interface accelerated by unsteady decaying shock (Taylor wave) is the decaying ability (up to full suppression) of the interface instability in case, when a wave passes through the interface in the direction from light to heavy gas.

Application of the method of defocused gratings allowed to use the usual flat plexiglas for windows of the test section of the shock tube