

Invention relates to the chemical, oil refining, petrochemical, and other industries for the study and continuous measurement of dynamic and kinematic viscosity and density of Newtonian fluids and their mixtures. Method for measuring physical and mechanical parameters of Newtonian fluids, according to which the fluid under study is passed at a constant volumetric flow rate through throttle valves, which are connected by means of inlet, outlet, and inter-throttle chambers into a hydrodynamic bridge circuit, wherein opposite arms of the bridge are selected with identical throttle valves, while laminar and turbulent throttles are placed in adjacent arms, and the pressure differential between the inter-throttle chambers of the hydrodynamic bridge is measured. Additionally, the pressure differential between the inlet and outlet chambers of the bridge is measured and an additional flow of the fluid under study is created between the inter-throttle chambers of the bridge at a constant volumetric flow rate that is lower than the flow rate supplied to the inlet chamber of the bridge. Technical result: improved measurement accuracy, expanded measurement range, and provision of simultaneous continuous measurement of dynamic viscosity, density, and kinematic viscosity of Newtonian fluids.