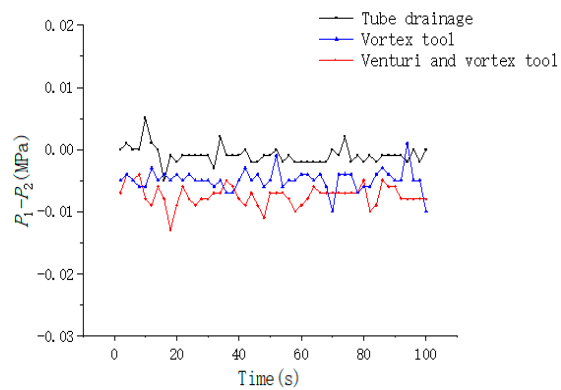
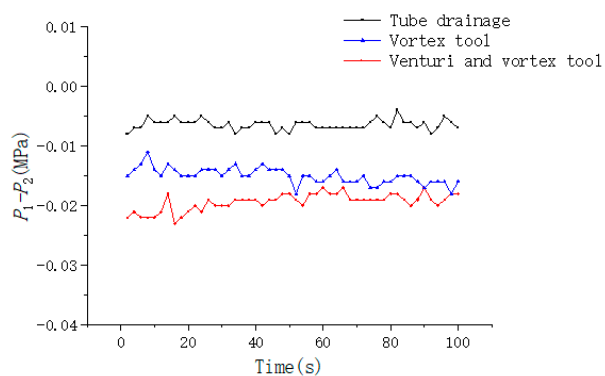


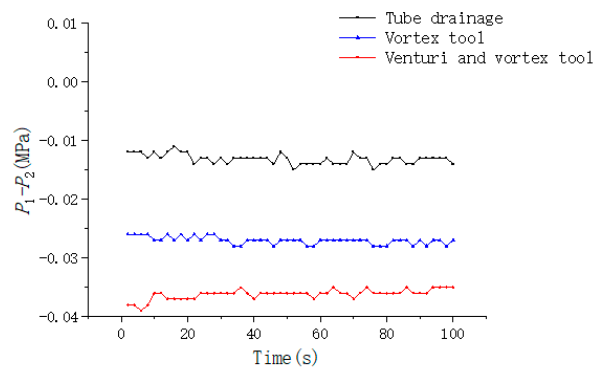
(a) 100 m³/h



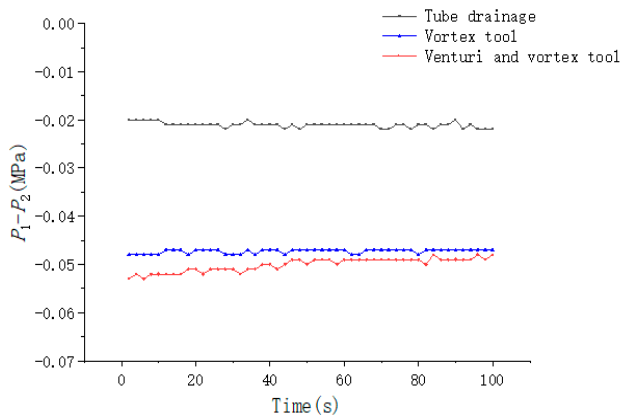
(b) 200 m³/h



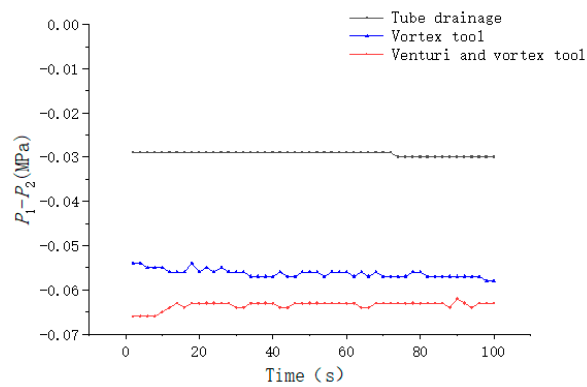
(c) 300 m³/h



(d) 400 m³/h

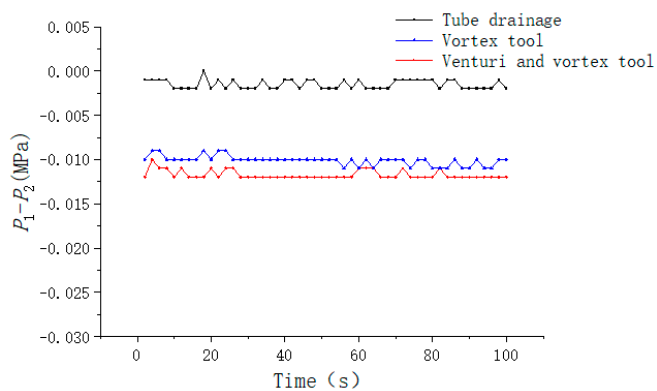


(e) 500 m³/h

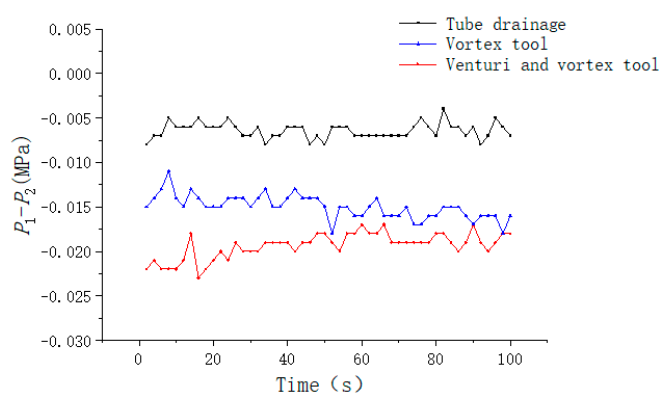


(f) 600 m³/h

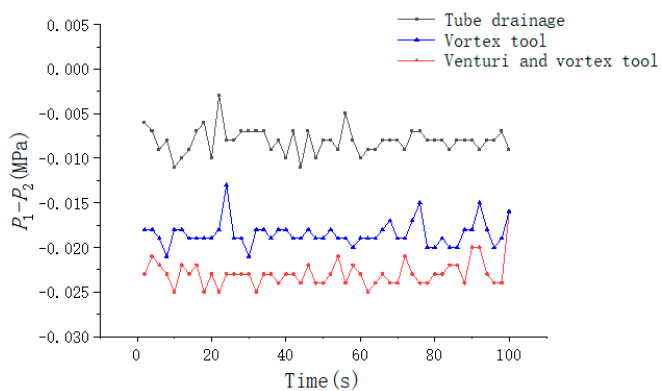
Figure S1. Instantaneous pressure drop of different tools in the horizontal tube with liquid flow rate of 3L/min and gas flow rates of 100 - 600m³/h



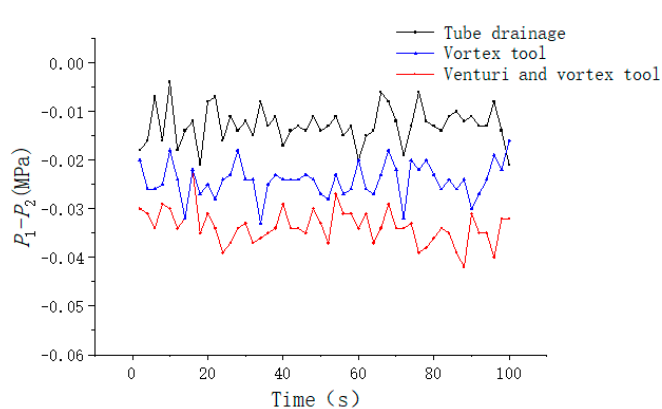
(a) 1L/min



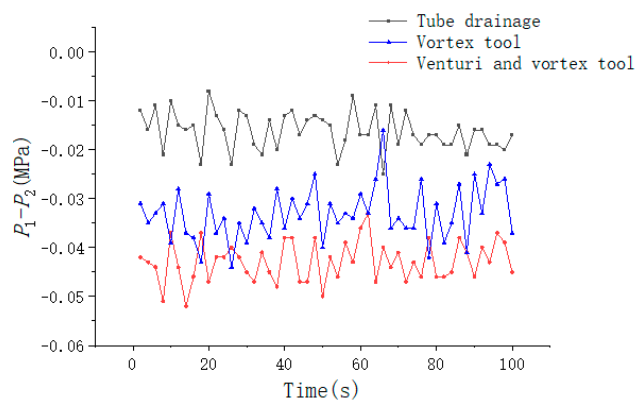
(b) 3L/min



(c) 5L/min



(d) 10L/min



(e) 15L/min

Figure S2. Instantaneous pressure drop of venturi and vortex tool in the horizontal tube with different liquid flow rates (1,3,5,10,15 L/min) and the gas flow rate of 300m³/h