

Coherent Structures of the Particle-laden Turbulent Round Jet at Different Reynolds Number*

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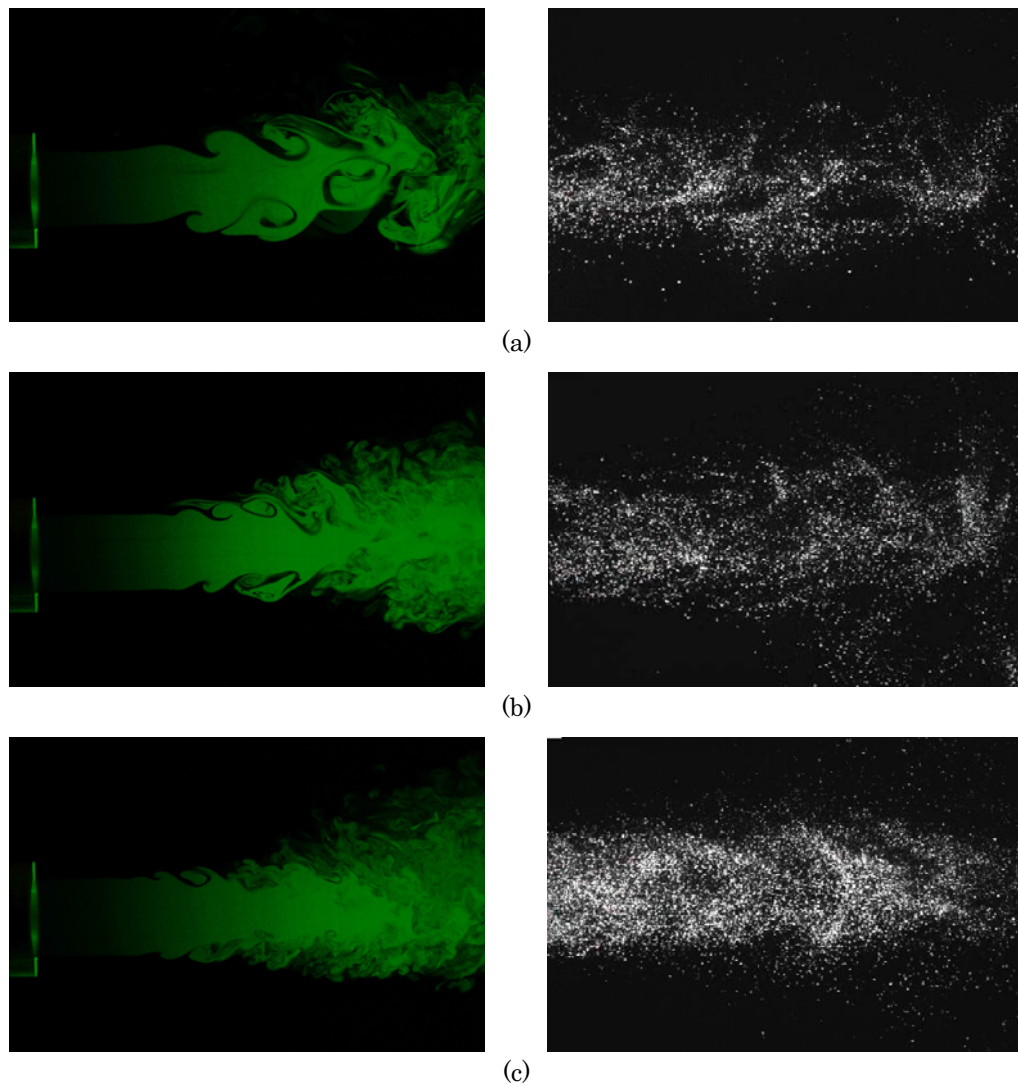


Fig.1. The evolving of the coherent vortex structures and corresponding particle dispersion patterns. (a) Re=3190; (b) Re=6230; (c) Re=10010;

PIV (Particle Image Velocimetry) system was employed to study the particle-laden turbulent round jets at different flow Reynolds numbers. The evolving of the coherent vortex structures in the flow-field and the corresponding particle dispersion patterns are visualized as Fig. 1. With the increasing of the Reynolds number, the large-scale vortex structures become smaller due to the break up of the flow. At the same time, the particles distribute more evenly in the flow-field and disperse less along the lateral direction. In addition, we have obtained lots of other visual images and valuable data that can be useful for associated engineering applications and numerical simulation research.

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