

## Paradigm shift in experimental fluid dynamics (EFD)

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As often mentioned, UVP has three main advantages over the conventional techniques of flow measurements; (1) space-time velocity field, (2) Applicable to opaque liquids and (3) Efficient flow mapping. Among these advantages, the information of space-time velocity field is a sort of solution of the basic equations and it was the ultimate goal to invent novel flow measurement method. The development of the UVP was a pioneering work for this generation and it surely influenced on the development of PIV using laser. A successful development of such measurement techniques which enables us to obtain spatio-temporal velocity field compelled us change the methodology in physics. Hydrodynamic instability problem received its benefits. In the industrial applications too, two important branches in fluid engineering are currently faced to the paradigm shift in their application principles. One is a principle in flow metering and another is a flow behavior of viscoelastic materials. These current changes will be explained in detail with examples.