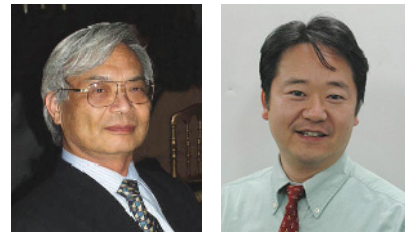


## Preface

### High Performance Instruments for PIV Seek Frontier



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In this present issue of the *Journal of Visualization* (Vol. 9, No. 4), 11 technical papers and one short paper are presented.

In Japan, the number “9” is not an ordinary number, rather it is a lucky number signifying “long life”, “long time”, and “large quantity”. The editors of this present issue, on behalf of the editorial board, gratefully acknowledge all the authors, referees and others who have contributed to the publication of this issue.

Instruments for flow visualization and PIV analysis have progressed surprisingly over recent years. High resolution and high frame rate video cameras have gained popularity. High performance and high specification PCs have enabled PIV analysis to be performed in almost real-time and have allowed larger quantities of images to be processed than previously. As a result, the usefulness of PIV has been extended to a large range of phenomena ranging from the micro scale to very large scales.

Over the last 20 years, people working in the field of PIV have enjoyed contributing to the advancement of this technique and to the application of the new techniques that have successfully analyzed various fluid phenomena.

However, when we consider the lower limit of the spatial resolution of measurements involving visible light, the ultimate achievable resolution would be one tenth of a micrometer. It has already attained. If we do not require real-time measurements or very rapid results, the current performance of PCs used for analysis seems to be sufficient. What should the target of advanced PIV techniques be for the next few years?

*Managing Editors*  
Uemura, T. and Kikura, H.