



Preface

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This section is the special issue for the winners of Optics Awards for Excellent Papers, given by the Optical Society of Japan. This special issue contains the review articles by two winners. These papers were reviewed and accepted according to the editorial policy of Optical Review.

Optics Awards for Excellent Papers started in 1960 and 111 young researchers received these awards by 2019. The recipients have led and inspired optical researches in Japan, and have extended application fields in the science. The award succeeds long history and traditions of OSJ.

Two excellent papers were selected: one is “Scattering imaging of biomolecules with metallic nanoparticles: localization precision, imaging speed, and multicolor imaging capability,” by Dr. Jun Ando and the other is “Full-parallax three-dimensional display based on light field reproduction” by Dr. Hayato Watanabe.

Dr. Jun Ando reported multicolor, high speed, and high-precision optical imaging methods using metallic nanoparticles. Their techniques have been applied to biological studies such as elucidating the operation mechanism of motor proteins that move forward at intervals as small as several nm,

and the dynamics of lipid molecules those diffuse rapidly across biological membranes.

Dr. Hayato Watanabe reported a display method called Aktina Vision, which is a light field display based on multi-view projection. They demonstrated a display system with a maximum of approximately 330,000 pixels. Each view-point image is imaged on the 3D screen, and high-density light rays diffused by the 3D screen from an optical image in space. This allows the observer to view full-parallax 3D images.

I hope you enjoy the excellent reviews by two winners and get some inspirations on your research. Finally, I greatly appreciate members of the Selection Committee of Optics Awards for Excellent Papers for their great efforts.

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Manabu Sato

The Chair of the Selection Committee of Optics Awards for Excellent Papers

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