

Abstract Submitted  
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**PIV measurements of flow characteristics induced by mini plate-wing plasma actuators** A.N.M. MOMINUL ISLAM MUKUT, PhD Student, HIROSHI MIZUNUMA, Professor, TAKEHIKO SEGAWA, Researcher, OBARA HIROMICHI, Associate Professor — The surface DBD plasma actuator is known to be effective for flow control process. Plasma is produced on actuator and gives a body force to the ambient air which is the mechanism for active flow control. Until now, the actuators have been mounted on the wall surface. The plasma actuator is thin and controllable electrically. If we combine the plasma actuator and the passive devices like a vortex generator and Large Eddy Break Up device, those passive devices would be activated. As the basis of the combination use, this paper investigated the wing-like plasma actuators, the width and chord length of which were 96mm and 19.6mm respectively. The electric wind was generated in the absence of external flow by the plasma actuator. Two electrodes were separated by a Kapton thin wing plate and were located at 5.75mm or 14mm from the leading edge. The induced flow was compared as a function of the distance from the leading edge to the actuator position. It was found that the increase in the distance shifted the point of maximum velocity downstream but the induce wake flow indicated the same momentum integral.

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