

Abstract Submitted
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Electro-Luminescence based Pressure-Sensitive Paint System for Unsteady Flow Field Measurements YOSHIMI IIJIMA, Aerospace Research and Development Directorate, JAXA, HIROTAKA SAKAUE — Electro-luminescence (EL) based pressure-sensitive paint (PSP) system is developed for capturing unsteady flow fields. It has advantages in uniform distribution in the illumination without remotely apply the illumination source from the testing object. The resultant system can be applied directly onto a testing object surface. It consists of an inorganic EL and a PSP. The EL emits blue illumination uniformly applied onto the PSP layer. Because of a sheet illumination, the EL gives uniform distribution, while a point illumination gives a spot in illumination. The PSP is developed to provide a fast response to a change in pressure. It uses a porous particle and a polymer to create porous-polymer PSP. The response time characterization of the developed system is included in the presentation. The developed system is applied to an unsteady flow field, such as a sound field in a resonance tube.

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